



ANNUAL REPORT

2018-19

Dr.Y.S.R.Horticultural University

Venkataramannagudem, West Godavari Dist.-534101

Dr.YSRHU, Annual Report, 2018-19

Published by

Dr.Y.S.R. Horticultural University

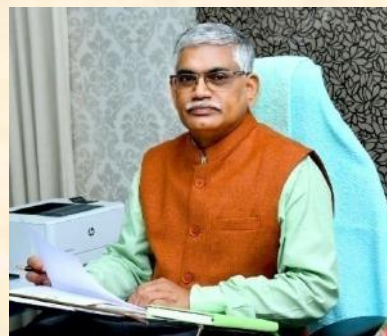
Administrative Office, P.O. Box No. 7,
Venkataramannagudem-534 101, W.G. Dist., A.P.
Phones : 08818-284312, Fax : 08818-284223
E-mail : vc@drysru.edu.in
URL: www.drysru.edu.in

Compiled by

Dr.B.Srinivasulu, Director of Extension, Dr.YSRHU
Dr.R.V.S.K.Reddy, Director of Research, Dr.YSRHU
Dr.E.Karuna Sree, Principal Scientist & Head, KVK, V.R.Gduem, Dr.YSRHU
Dr.R.V.Sujatha, Associate Professor, CoH, Venkataramannagudem, Dr.YSRHU

All rights are reserved. No part of this book shall be reproduced or transmitted in any form by print, microfilm or any other means without written permission of the Vice-Chancellor, Dr.Y.S.R.Horticultural University, Venkataramannagudem.

Dr.T.Janakiram
Vice-Chancellor
Dr.Y.S.R.Horticultural University



FOREWORD

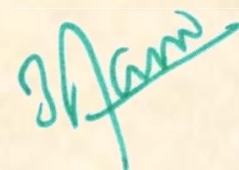
Horticulture has emerged as an important sector for improving income through increased productivity, generating employment and in enhancing exports besides providing nutritional security. 30% of India's GDP accounts from Horticulture and provides about 31.7% of the total exports of agricultural commodities. Recognizing the importance of Horticulture and its growth potential in Andhra Pradesh, its contribution to GSDP and the future need for professional human resources, Government of Andhra Pradesh had established Andhra Pradesh Horticultural University, second of its kind in the country at Venkataramannagudem, West Godavari district during the year 2007. Subsequently, it was renamed as Dr Y.S.R.Horticultural University (Dr YSRHU) during the year 2011. This university has a mandate of human resource development through Education, Research and Extension.

The university is functioning with four Horticultural Colleges, four Affiliated Private Horticultural Colleges, nineteen Research Stations, four Horticultural Polytechnics, five Affiliated Private Horticultural Polytechnics and four Krishi Vigyan Kendras. This University offers four year B.Sc.(Hons.) Horticulture, two year M.Sc.(Horticulture) with specialization in (i) Fruit Science (ii) Vegetable Science (iii) Plantation, Spices, Medicinal and Aromatic crops (iv) Floriculture and Land Scape Architecture (v) Post-Harvest Technology (vi) Plant Pathology (vii) Entomology and three year Ph.D.(Horticulture) with specialization (i) Fruit Science (ii) Vegetable Science (iii) Floriculture & landscape Architecture (iv) Plantation, Spices, Medicinal and Aromatic crops (v) Plant Pathology (vi) Entomology and two year Diploma in Horticulture. The course curriculum prescribed by the V Deans Committee of ICAR is being followed for the degree programmes. In UG programme, the Rural Awareness Work Experience Programme (RAWEP) is uniquely designed programme for final year B.Sc (Hons.) Horticulture students. The Experiential Learning Programme (ELP) is aimed to develop skill on horticulture techniques to the under graduates. As per the rankings of ICAR, the university was placed in first rank among the Horticultural Universities in the country and 11th rank among 71 State Agricultural Universities in the country.

This university is conducting basic, applied, location/region specific and anticipatory research for the overall development of Horticultural crops in the state in 19 research stations in various districts of Andhra Pradesh. Under this University, a Horticultural Research Station was established at T.Venkupalem Village, Anakapalli Mandal, Visakhapatnam District. Centre for Research and Development on Orchids was established at Horticultural Research Station, Chintapalli, Visakhapatnam District under NABARD-RIDF and started functioning. Established Food Quality Testing Laboratory at Horticultural Research Station, Lam, Guntur under RKVY and started functioning.

University is continuously concentrating on transfer of technologies (extension activities) through Krishi Vigyan Kendras (KVKs) and Horticultural Research Stations (HRSs). The activities of KVKs includes technology assessment and refinement, conduct of OFTs & FLDs, vocational and skill oriented training programmes to farmers, rural youth and women. The scientists also involved in different extension activities like organizing Kisan Melas, Rythu Sadassus, Exhibitions, Polam Badi, Polam Pilustondi etc., to cater the timely needs of the farmers. This University has introduced Bi-monthly T&V Programme to impart training to Officers of Department of Horticulture & to get feedback on field problems. The University has organized “New India Manthan-Sankalp Se Siddhi”, “Swachata He Seva”, “World Soil Day”, “World Adivasi Day”, “World Food Day”, Agricultural Education Day & Kisan Sammelans are some of the significant events. The University has hosted XXVIII Workshop on AICRP on spices at HRS, Lam, Guntur and National level knowledge sharing workshop on Tropical fruits - Banana & Pomegranate at HRS, Ananthapuramu. Horticultural Research Station, Lam, Guntur and Horticultural Research Station, Chintapalli have received “Best AICRP on Spices Centre Award” for the year 2016-17 from ICAR.

I am thankful to University Officers, Associate Deans, Principals, Heads of Research Stations, Heads of KVKs and supporting staff for their cooperation in carrying out the activities reported in this annual report.



(T.Janakiram)
Vice-Chancellor

CONTENTS

S.No.	Particulars	Page No.
	Summary	1
I.	Introduction	4
II.	University Administration	5
	A. Authorities of the University	5
	1. Board of Management	5
	2. Officers of the University	10
	3. Academic Council	10
	B. Meetings of the Authorities of the University	12
	1. Academic Council	12
	2. Research and Extension Council	12
	C. Faculty Strength	16
III.	Education	
	1. Teaching Institutes	17
	2. Admission Strength and out turn of Students	18
	3. Students' Hostels	19
	4. Students Activities	
	i) NSS Activities	22
	ii) Sports, Games & Cultural Activities	28
IV.	Research	
	1. Thrust areas of Research	38
	2. Research Stations	38
	3. Seasonal conditions and crop performance	39
	4. Salient Achievements	
	A. Crop Improvement	46
	B. Crop Production	111
	C. Post-harvest Technology	140
	D. Entomology	151
	E. Plant Pathology	179
V.	Extension	
	A. Extension programmes organized at University level	208
	B. Diagnostic visits	208
	C. Training programmes conducted	251
	D. Training programmes participated	290
	E. HRD trainings	332
	F. Method demonstrations	337
	G. Group discussions	348

H. Field days	360
I. Mass communications	
a) Radio programmes	367
b) Television programmes	370
J. Rythu sadassus/Kisan melas	374
K. Exposure visits	377
VI. Publications	
A. Books/Book chapters	392
B. Research papers	392
C. Abstracts	416
D. Technical Bulletins	419
E. Leaflets/Pamphlets	426
F. Popular Articles	427
G. Participation in International and National Conferences/ Symposium/Workshops & HRD Programmes	431
VII. Finance and Budget	437
VIII. Awards & Honours	438
IX. Other Significant events	444



SUMMARY

Realizing the potential horticultural growth in the state, the Govt. of Andhra Pradesh had established Andhra Pradesh Horticultural University (APHU) second of its kind in the country at Venkataramannagudem, West Godavari District vide Govt. Act No.30 of 2007 (G.O.Ms.No.134 dated 26.06.2007). Subsequently, it was renamed as **Dr.Y.S.R. Horticultural University** vide Act No.13 of 2011.

The University has a mandate of human resource development through **Education**, conduct need based **Research** and dissemination of the proven technologies through **Extension**. The university is functioning with four Horticultural Colleges, four Affiliated Private Horticultural Colleges, nineteen Research Stations, four Horticultural Polytechnics, five Affiliated Private Horticultural Polytechnics and four Krishi Vigyan Kendras.

As per the rankings of Indian Council of Agricultural Research, New Delhi the university was placed in 11th Rank among all the 71 State Agricultural Universities in the country and First Rank among the Horticultural Universities in the country.

During the year 2017-18, the university has bagged the Prestigious Awards i.e., Best AICRP Centre on Fruits to CRS, Tirupati, Best AICRP on Spices Centre Award to HRS, Lam and HRS, Chintapalli and Pandit Deendayal Upadhyay Krishi Vigyan Protsahan Puraskar for best KVK in Zone-X to KVK, Venkataramannagudem.

MANDATE

- To train human resources needed for the development of horticulture and allied sciences (**Education**).
- To conduct research and generate technologies for crop improvement, production, and post-harvest technologies of horticultural crops (**Research**).
- To transfer/disseminate the technologies generated by the University and also in collaboration with the line departments of the Government (**Extension**).

UNIVERSITY ADMINISTRATION

The Board of Management of Dr.YSRHU is the apex body, empowered to make policy decisions, with the Vice-Chancellor as its Chairman who is also the Chief Executive of the University. In the University administration, the Vice-chancellor is supported by the University Officers Viz., Registrar, Dean of Horticulture, , Director of Research, Director of Extension, Dean of P.G studies, Dean of Student Affairs, Director of Industrial and International Programmes, Controller of Examinations, University Librarian, Comptroller, and Estate Officer in handling administrative, academic, research, extension and financial matters.

EDUCATION

Development of the horticultural expertise and skilled manpower is one of the important mandates of the University which aims at meeting the needs of technically trained human resource for the horticulture industry of the state and nation. The University offers B.Sc.(Hons.) Horticulture, M.Sc.(Horticulture) with specialization in (i) Fruit Science (ii) Vegetable Science (iii) Plantation, Spices, Medicinal and Aromatic crops (iv) Floriculture and Land Scape Architecture (v) Post-Harvest Technology (vi) Plant Pathology (vii)





Entomology and Ph.D.(Horticulture). The course curriculum prescribed by the V Deans Committee of Indian Council of Agricultural Research is being followed for the degree programmes.

RESEARCH

The University adopts a multipronged approach for conducting research which includes

- Research at university colleges by post graduate and Doctoral students.
- Research in colleges by the faculty members.
- Research at Horticultural Research stations (HRS) on mandate crops by the Scientists.
- All India Coordinated Research Projects(AICRPs) on specific crops.
- On farm research for validation, refinement, adoption and popularization of new technologies in farmers' fields with participatory mode.

Thrust Areas of Research:

- Germplasm collection, conservation and evaluation
- Water management and micro-irrigation
- Dry land horticulture
- Organic farming and promoting bio-fertilizers
- Production of quality planting material
- Protected Cultivation.
- Post harvest technology, product development and value addition
- Biotechnology
- Bio-Control and mass production of bio-agents
- INM and IPM technologies

Collaborative Research:

The University takes up collaborative research programmes with other organizations like ICAR Institutes, RKVY, DST, DBT, MIDH, Spices Board, DCCD,CDB and NHB on important problems of horticultural crops.

EXTENSION

The Extension services are being offered through the four Krishi Vigyan Kendras located at Venkataramannagudem (West Godavari dist.), Pandirimamidi (East Godavari dist.), Periyavaram (SPSR Nellore dist) and Vonipenta (YSR Kadapa dist). Education of rural youth in horticulture and allied areas is one of the main functions and the university works in tandem with line departments in the formation of Rythumithra and self help groups of farm men and women.





- The Krishi Vigyan Kendras and Research Stations mandated with transfer of technology are taking care of the extension activities. KVKs are conducting OFTs, FLD's to assess and demonstrate location specific technologies.
- Scientists also attend kisan melas, rythu sadassus, diagnostic field visits, polam pilustondi etc.
- Every year UDYANA PANCHANGAM a telugu publication covering the production technology of horticultural crops is being brought out and released on UGADI festival day for the benefit of the farmers.
- Scientists are involved in disaster management during natural calamities and conduct demonstrations on amelioration measures.
- Zonal Research and Extension Advisory Council meetings involving scientists, officers of the line departments and farmers are usually held to identify the research/extension gaps and finalizes technical programme for research and extension.
- REC meeting involving scientists, officers of line departments, representatives from industry and progressive farmers is held once in a year to discuss the progress in Research and Extension activities and to identify the research and extension gaps for further action.
- Horticultural Colleges in Venkataramannagudem and Anantharajupeta Libraries were provided with high standard internet and digitization services for strengthening the Education and Research activities. The Memorandum of Understandings (MoUs) signed between the University and reputed National and International Institutions have paved the way for providing quality trainings and technology transfer to the farmers.





I. INTRODUCTION

The Andhra Pradesh Horticultural University was established by the Government of Andhra Pradesh by Act 30 of 2007 with its headquarters at Venkataramannagudem, near Tadepalligudem in West Godavari District and renamed as Dr.Y.S.R.Horticultural University w.e.f. 18th April, 2011 by Act 13 of 2011. It is the second Horticultural University in the country. The University runs on the Land Grant pattern followed in USA, with emphasis on Education, Research and Extension of Horticulture and allied subjects.

The University at present has 4 constituent Colleges of Horticulture, 4 Horticulture Polytechnics, 17 Research Stations and 4 KVKs across 5 agro-climatic zones of the state. Based on the present day need 4 private Horticultural Colleges and 5 private Polytechnics were also started with affiliation to this university. Ongoing research programmes at all the Research Stations have been re-oriented into eight thrust areas. Apart from the non-plan research programmes, fifteen All India Coordinated Research projects are also operating at different research stations of the University. Funds for research are provided by the State Government and also the Indian Council of Agricultural Research (ICAR). The ICAR provides 75 per cent of funds for conducting research under various All India Coordinated Research Projects of ICAR.

The University is governed by a Board of Management headed by the Vice-Chancellor. The Vice-Chancellor is supported by University Officers viz., Registrar, Dean of Horticulture, Director of Research, Director of Extension, Director of Industrial and International Programmes, Dean of PG Studies, Dean of Student Affairs, Controller of Examinations, Comptroller and Estate Officer in University management. The academic affairs of the University are governed by the Academic Council, UG and PG Boards led by the Vice-Chancellor. The Research and Extension services are guided by the Research and Extension Council (REC).

This university offers B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in i) Fruit Science ii) Vegetable Science iii) Floriculture and Landscape Architecture, and iv) Spices, Plantation, Medicinal and Aromatic crops v) Post harvest technology vi) Entomology vii) Plant Pathology and Ph.D (Horticulture) with specialization in (i) Fruit Science (ii) Vegetable Science (iii) Plantation, Spices, Medicinal and Aromatic crops (iv) Floriculture and Land Scape Architecture. The course curriculum prescribed by the V Deans' committee of Indian Council of Agricultural Research is being followed for the degree programme. At under graduate level, besides course work, students to equip the practical field knowledge on the Horticultural crops, they shall also undergo Rural Horticulture Work Experience Programme (RHWEP) and subsequently Experiential Learning Programme (ELP) in the final year with subject modules, namely, (1) Commercial Horticulture (2) Protected cultivation of high value Horticulture crops (3) Processing of fruits & vegetables for value addition (4) Bio-inputs – biofertilizers and bio-pesticides (5) Mushroom Culture (6) Bee Keeping (7) Vermicomposting. In RHWEP, the final year students are deputed to stay in villages and are attached to different host farmers for 90 days, where they will interact with farmers of the village, work with them, understand the field problems, apply the latest knowledge, acquire necessary skills and gain self confidence. The Experiential Learning Programme was aimed at equipping Under Graduates with entrepreneur skills in horticulture through hands on training.

The University scientists are involved in popularizing the proven technologies and improved varieties developed through various extension activities viz., All India Radio, print and visual media, participation in Exhibitions, Kisan melas, diagnostic surveys, Polam pilustondi, Rythu kosam chandranna yatralu, disaster management programmes, Rythu sadassus and training programmes.



II. UNIVERSITY ADMINISTRATION

His Excellency, the Governor of Andhra Pradesh, **Sri E.S.Lakshmi Narasimhan** is the Chancellor of the University.

Sri Chiranjiv Choudhary, IFS, Vice-Chancellor is the Academic Head and Principal Executive Officer of the University.

The organizational set up of the University is presented in flow chart.

The University is governed by the following authorities.

- Board of Management
- Academic Council

A. AUTHORITIES OF THE UNIVERSITY

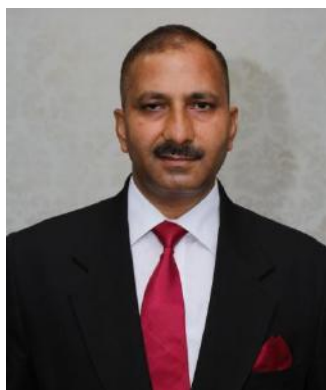
1. Board of Management

The Board of Management of Dr.YSRHU is the apex body, empowered to make policy decisions, with the Vice-Chancellor as its chairman who is also the chief executive of the university.

The Board of Management has representatives from State Legislature/Parliament (4 no.), the Horti-industry (2 no.) and State Chamber of Panchayat Raj (1) as well as Horticultural Scientific Community (1 no.). In addition, one representative from the Indian Council of Agricultural Research, three Members of Academic Council of the University, Secretaries to Government from Panchayat Raj and Finance Departments and Director of State Departments of Agriculture and Animal Husbandry are also the Members of the Board of Management of Dr.YSRHU. During the period under report the Board of Management was not constituted by Govt. of Andhra Pradesh except for the Ex-officio members.

Members of Board of Management, Dr.YSRHU

1



Sri Chiranjiv Choudhary, IFS,
Vice-Chancellor,
Dr.Y.S.R. Horticultural University,
Venekataramannagudem-534 101,
West Godavari District

2



Dr.V.Damodara Naidu,
Vice-Chancellor, ANGRAU,
Vijaya Durga Towers, M.G. Inner Ring Road,
Guntur, A.P.





3



Dr.Y.Hari Babu,
Vice-Chancellor, Sri Venkateswara Veterinary
University, Administrative Office,
Dr. Y.S.R. Bhavan,
Tirupati - 517 502.

4



Sri K.V.V.Satyanarayana, IRAS,
Special Secretary (B & A), Finance Department,
Govt. of A.P., Building No.2, A.P. Secretariat,
Velagapudi, Guntur District.

5



Sri Nimmala Kistappa,
Hon'ble Member of Parliament,
Anantapuramu, Gorantla, Anantapuramu
district-515 231

6



Dr. Nimmala Ramanaidu,
Hon'ble MLA,
Palakol, D.No.3-16, Agarthi Palem (Post),
Palakol mandal,
West Godavari district-534 206

7



Sri Peela Govind Satyanarayana,
Hon'ble MLA,
Anakapalli, Visakhapatnam district, D.No.4-
46/9, 70 Division, Pendurthy-530 047,
Visakhapatnam District- 530 047

8



Dr. Nookasani Balaji,
Zilla Parishad Vice-Chairman,
Binginapalli village, S.Konda mandal, Prakasam
distirct-523 104





9



Dr.Sanjeev Saxena,
Assistant Director General (IPTM & PME),
Indian Council of Agricultural Research,
New Delhi- 110 001.

10



Dr.G.Subbi Reddy,
Dean of Student Affairs (Retd.),
Dr.YSRHU, C/o.Nagendra Reddy, D.No.10-104-14-
12/8, Jawahar Nagar colony, Near Puttur Hospital,
Markapuram-523 316, Prakasam district.

11



Sri G.Padmanabha Naidu,
G.Gollapalli (V), Thavanampalle mandal,
Chittoor district – 517 129

12



Sri Popuri Siva Rama Krishna
S/o. Upendra Rao, Edlapadu village & mandal,
Guntur district – 522 233

13



Sri Bonam Nageswara Rao
BNR Complex, Tatipaka Village (Centre),
Razole mandal,
East Godavari district – 533 249

14



Smt. M.Ushadevi,
Ex-Sarpanch, W/o. Muralidhar Goud
Railway Kodur village
Kadapa district – 516 101

15



16





Dr.J.Dilip Babu,
Director of Research,
Dr.Y.S.R.Horticultural University,
Venkataramannagudem-534 101,
West Godavari District

17



Dr.L.Naram Naidu,
Principal Scientist,
Horticultural Research Station,
Lam, Guntur-522 101.

19



Dr.B.Srinivasulu,
Registrar & Ex-Officio Non-Member Secretary ,
Dr.Y.S.R. Horticultural University,
Venkataramannagudem-534 101,
West Godavari District

Dr.K.Umajyothi,
Professor (Hort.) & Associate Dean, College of
Horticulture,
Venkataramannagudem – 534 101,
West Godavari District

18

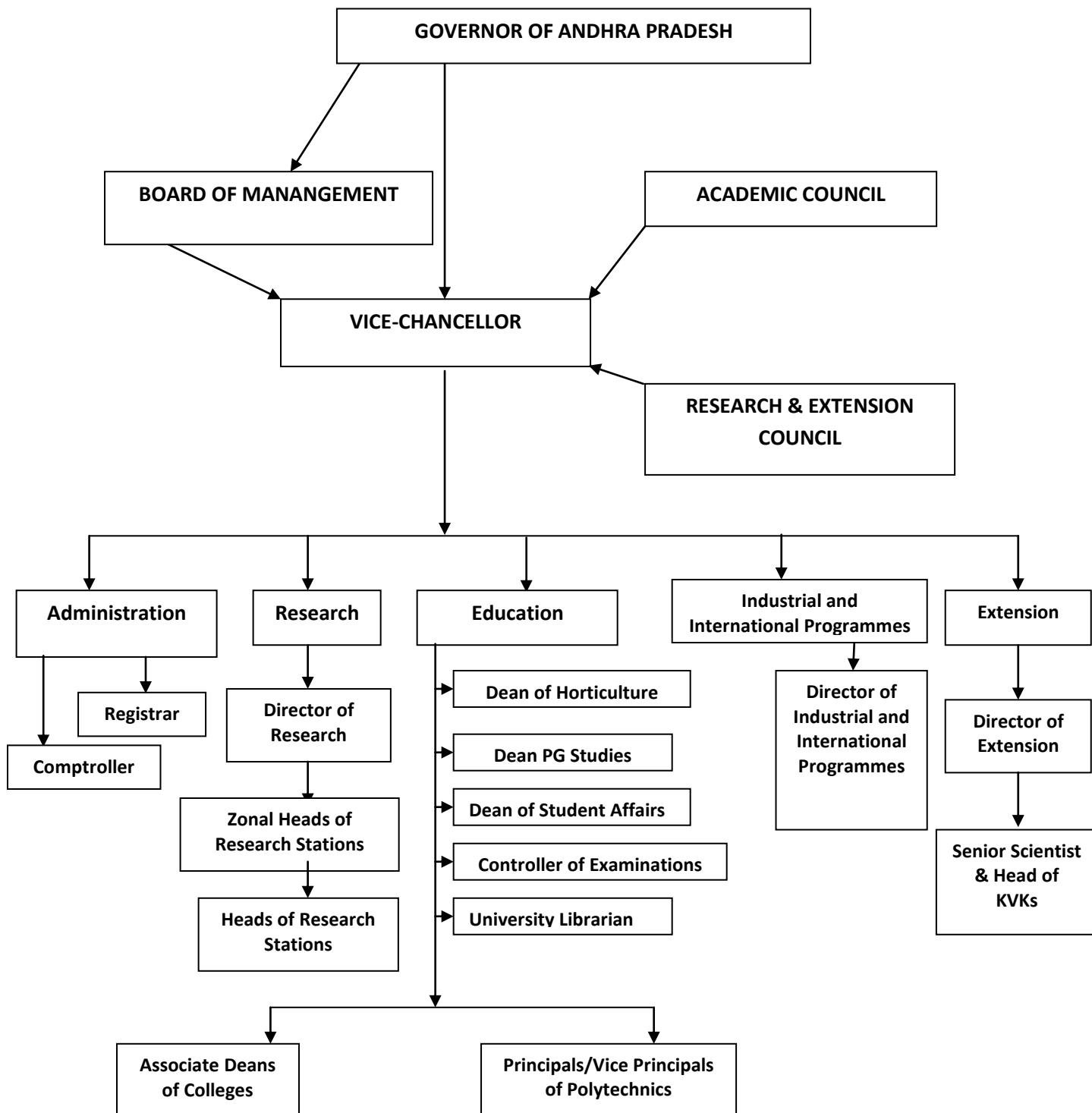


Dr.K.T.Venkata Ramana
Principal Scientist,
Citrus Research Station,
Tirupati – 517 502,
Chittoor district





**ORGANIZATIONAL STRUCTURE OF
Dr. Y.S.R. HORTICULTURAL UNIVERSITY**





2. Officers of the University

The list of University Officers for the year is furnished as follows.

UNIVERSITY OFFICERS

Vice-Chancellor	Sri Chiranjiv Choudhary, IFS
Registrar	Dr. B.Srinivasulu
Dean of Horticulture	Dr.M.Lakshminarayana Reddy
Dean of Post Graduate Studies	Dr. D. Srihari
Dean of Student Affairs	Dr.A.Sujatha
Director of Research	Dr. J.Dilip Babu
Director of Extension	Dr.R.V.S.K.Reddy
Director of Industrial & International Programmes	Dr. B.Srinivasulu
Controller of Examinations	Dr.K.Gopal
University Librarian	Dr.R.V.S.K.Reddy
Estate Officer	Sri S.Narasimhulu (upto 14.02.2019) Sri M.Krishna Reddy (15.02.2019 onwards)

3. Academic Council

The Academic Council is vested with the responsibility of implementing and monitoring all the academic programmes. The Council is headed by the Vice-Chancellor, as Chairperson and consists of Deans of Faculties, Directors of Research and Extension, Dean of Student Affairs, Controller of Examinations, University Heads of Departments and Professors as Members. In addition, the Council consists of ten academicians, representing different faculties nominated by the Vice-Chancellor and two representatives of the Board of Management. As Chief Executive of the University, the Vice-Chancellor is having the powers and responsibilities for the academic administration.

MEMBERS OF ACADEMIC COUNCIL

Clause (i) The Vice-Chancellor	Sri Chiranjiv Choudhary, IFS, Vice-Chancellor, Dr.YSRHU
Clause (ii) The Vice-Chancellor, ANGRAU	Dr.A.Padma Raju, Vice-Chancellor, ANGRAU
Clause (iii) The Vice-Chancellor, SVVU	Dr.Manmohan Singh, IAS, Vice-Chancellor, SVVU & Principal Secretary to the Govt. of A.P., AH, DD & F Dept.
Clause (iv) The Dean of Faculties	Dr.M.Lakshminarayana Reddy, Dean of Horticulture, Dr.YSRHU Dr.M.Lakshminarayana Reddy, Dean PG Studies, Dr.YSRHU
Clause (v) The Directors	Dr.J.Dilip Babu, Director of Research, Dr.YSRHU





	Dr.R. V.S.K.Reddy, Director of Extension, Dr.YSRHU Dr.M.B.Nageswara Rao, Director of Industrial & International Programmes, Dr.YSRHU
Clause (vi) Dean of Students Affairs	Dr.A.Sujatha, Dean of Students Affairs, Dr.YSRHU
Clause (vii) Controller of Examinations	Dr.K.Gopal, Controller of Examinations, Dr.YSRHU
Clause (viii) The University Librarian	Dr.R. V.S.K.Reddy, University Librarian, Dr. YSRHU
Clause (ix) The University Heads of Departments and Heads of Departments of College	
Clause (x) The Associate Deans of Colleges	Dr.K.Uma Jyothi, Associate Dean Dr.M.Ramakrishna, Associate Dean
Clause (xi) The Associate Directors of Research of the Regions / Zones/Zonal Heads	Dr.B.V.K.Bhagawan, Principal Scientist (Hort.) & Zonal Head Dr.L.Naram Naidu, Principal Scientist (Hort.) & Zonal Head Dr. K.T.Venkataramana, Principal Scientist (Pl.Path.) & Zonal Head
Clause (xii) Three Principal Scientists (Crop)	Dr.B.Govindarajulu, Principal Scientist (Pl.Path.) & Head Dr. L.Naram Naidu, Principal Scientist (Hort.) & Head Dr. G.Ramanandam, Principal Scientist (Hort.) & Head
Clause (xiii) Members of Board of Management	Smt. V.Usha Rani, IAS, Commissioner of Horticulture, Government of A.P. Dr.P.V.Ramesh, IAS, Principal Secretary, Government of A.P. (R&F), Finance Department
Clause (xiv) The eminent educationists from outside the University in the field of Horticulture	Dr.A.B.Patil, Director of Extension, University of Horticultural Sciences, Bagalkot, Karnataka Dr.C.Ravisankar, Professor (Hort.) & Univ. Head (Retd.), ANGRAU
Clause (xv) One nominee of the Indian Council of Agricultural Research	Dr.S.Arulraj, Director Indian Institute of Oil Palm Research, Pedavegi
Clause (xvi) Two Associate Professors and two Assistant Professors from the faculties	Dr. K.Swarajya Lakshmi, Associate Professor (Hort.) Dr. D.R.Salomi Suneetha, Associate Professor (Bio- Chemistry) Dr.N.Emmanuel, Assistant Professor (Ento.) Sri V.N.P.Siva Rama Krishna, Assistant Professor (Hort.)
Clause (xvii) Two Principals of Polytechnics	Dr.C.N.Byanna, Vice Principal





Smt. D.Aparna, Vice Principal

Clause (xviii) The Registrar

Dr.B.Srinivasulu, Registrar, Dr.YSRHU

B. MEETINGS OF THE AUTHORITIES OF THE UNIVERSITY

Academic Council:

The Academic Council normally meets once in six months accordingly 21st Academic Council meeting was held on 11.06.2018 and 22nd Academic Council meeting was held on 11.12.2018 at Dr.Y.S.R.Horticultural University, Venkataramannagudem, West Godavari District respectively

Research and Extension Council:

The Research and Extension Council normally meets once in a year.

Members of Research and Extension Council (REC)

The Vice-Chancellor, Dr.YSRHU	Sri Chiranjiv Choudhary, IFS
The Commissioner of Horticulture	Commissioner & Director of Horticulture
The Commissioner of Agriculture	Commissioner & Director of Agriculture
The Director of Women Development & Child Welfare	Director, Women Development & Child Welfare
The Commissioner of Sericulture	Director of Sericulture
The Principal Chief Conservator of Forests	Principal Chief Conservator of Forests
Two members of the Board of Management	1. Vice-Chancellor, ANGRAU 2. Vice-Chancellor, SVVU
The Director of Research	Dr.J.Dilip Babu, Dr.YSRHU
The Director of Extension	Dr.R.V.S.K.Reddy,Dr.YSRHU
All Deans of the Faculties, Dr.YSRHU:	
The Dean of Horticulture	Dr. M.Lakshminarayana Reddy
The Dean of PG Studies	Dr. M. Lakshminarayana Reddy
The Dean of Students Welfare	Dr. D. Srihari, Dr.YSRHU
All Associate Directors of Research (Zonal Research Heads)	1. Dr.B.V.K.Bhagawan, Principal Scientist (Hort.) & Head, Coastal Zone-I
	2. Dr.L.Narama Naidu, Principal Scientist (Hort.) & Head, Coastal Zone-II
	3. Dr.K.T.Venkata Ramana, Principal Scientist (Hort.) & Head, Rayalaseema Zone
All Associate Deans of the Colleges	The Associate Dean, HC & RI, V.R.Gudem
	The Associate Dean, HC & RI, A.R.Peta
All Heads of Departments of the University	Head, Department of Pomology
	Head, Department of Olericulture
	Head, Department of Floriculture
	Head, Department of Spices, Plantation crops and Medicinal crops
	Head, Department of Post Harvest Technology
	Head, Department of Entomology





	Head, Department of Plant Pathology
	Head, Department of Genetics & Plant Breeding
	Head, Department of Agronomy & Soil Science
	Head, Department of Plant Physiology Bio-chemistry and Microbiology
	Head, Department of English Statistics and Social Sciences
	Head, Department of Horticultural Engineering and Environmental Science
17.Principal Scientists (Crop)	Principal Scientist (Pomology)
	Principal Scientist (Olericulture)
	Principal Scientist (Floriculture)
	Principal Scientist (Spices, Plantation crops and Medicinal crops)
All Heads of Krishi Vignan Kendras & District Extension Units.	Dr.E.Karuna Sree, Senior Scientist & Head, KVK, Venkataramannagudem, W.G.District.
	Dr.A.Srinivas, Senior Scientist & Head, KVK, Pandirimamidi, East Godavari District
Three Officers not below the rank of The Deputy Director of Horticulture	Additional Director of Horticulture Executive Director, MIDH Dy. Director of Horticulture, Eluru
Research and Extension Council may co-opt as members not more than four persons who are specialized in research for such period and in such manner as may be prescribed, so as to secure adequate representation of different sectors of Horticulture/Agriculture and allied fields. Such members shall be two from Andhra Pradesh and two from outside the state.	Dr. K. Purushotham, Former Director of Research, Dr.YSRHU Dr. Y. N. Reddy, Former Professor & University Head (Hort.), ANGRAU
Ten progressive farmers of which three shall be woman, who are prominent in horticulture/agriculture and allied branches to be nominated by the Vice-Chancellor for their specialized knowledge and experience	1. Sri G. Venkatamaraju Surya Nagar, Railway Kodur, Kadapa District. 2. Sri Powdu Kusalavudu Gondhi Pakala,(V), Chintapalli (M), Visakhapatnam District. 3. Smt. Mallina Lakshmi Devi W/o Sri. M. Ravindra Prasad, Bowdara (V), S. Kota Mandal, Vizianagaram District 4. Sri Bandaru Srinivasa Rao S/o Tirupathiah,





	<p>Ananthavarappadu (V), Vatticherukuru (M), Guntur District</p> <p>5. Sri Bantu Srinivasa Rao Madicherla (V), Bapulapadu (M) Krishna District</p> <p>6. Smt. Garimella Mythili Venkataramana W/o Chinna Satyanarayana, Kotevari Agraharam, Ambajipeta Mandal, East Godavari District .</p> <p>7. Sri Danda Veeranjanyulu Sri Veeranjanya Chilli & Vegetable nursery, Bobbepalli (V), Martur (M), Prakasam District</p> <p>8. Sri Ch. Trinadha Srinivasa Rao, Vattigudipadu Post, Aagiripalli (M), Krishna District</p> <p>9. Mrs. P. Vijaya Lakshmi, Kondampalli, Penukonda (M), Anatapuramu District</p> <p>10. Sri B. S. V. Raghavayya (Raghu) Venkataramannagudem, Tadepalligudem (M) West Godavari District</p>
22. Two persons nominated by the Vice-Chancellor representing different horticulture based industries.	<p>1. Sri K. J. Prabhakar Rao, General Manager, M/s.Ruchi Soya Industries, Ampapuram, Bapulapadu Mandal, Krishna District.</p> <p>2. Sri. Y. Narayana Rao, C/o R. Surya Rao, Rajavolu, Rajahmundry, East Godavari District</p>
23. Representatives from the under mentioned organizations, not exceeding seven	
a. Agriculture Chemicals	--
b. The A.P.State seed development corporation Limited/National seed corporation /Seed industry/NABARD/Commercial banks	Chief General Manager, NABARD, Hyderabad
c. Indian Nursery Association	Sri Palla Subrahmanyam, President, All India Nurserymen Association, Kadiyapulanka, Kadiyam (M), West Godavari District.





d. Micro Irrigation Industries	Sri M. S. Prasad, State Agronomist, M/s. Jain Irrigation Systems Ltd., Opp: Park, Near Canara Bank, Gandhinagar, Hyderabad
e. Food processing industry	Sri T. Chandrasekhar Reddy, Thalupulapalli post, <u>Puthalapattu</u> mandal, Chittoor District – 517124.
f. The A.P.State Agro-Industries Development Corporation Limited	--
g. Non-govt. organization	President Bhagavathula Charitable Trust BCT Farm Complex, Haripuram, 531 061, Rambilli Mandal Visakhapatnam District.
h. Exporters, Horticulture products export development agency	General Manager, APEDA, 8 th Floor, Chandra Vihar Building, Mozzamjahi Market Hyderabad-500 001
i. Marketing / Food packing Industry	Sri P. Janardhana Reddy, Bharathi Seeds Pvt Ltd, 51/28, Opposite petrol pump, Noonepalli, Nandyal, Kurnool District.
The Vice-Chancellor may, for purpose of consultation, invite any two Scientists and/or two extension experts as per the need of the agenda to attend the meeting.	1. Dr.M.R.Dinesh, Director Indian Institute of Horticulture Research, Hessaraghatta Lake Post, Bengaluru. 2. Dr.Prakash Patil, Project Co-ordinator AICRP on Fruits, IIHR, Bengaluru 3.Dr.S.S.Hebbar, Principal Scientist (Hort.) Division of Vegetable Crops, IIHR, Bengaluru 4. Sri Pulla Veera Venkata Rao, General Secretary, Sri Satyadeva Nursery, Kadiyapulanka, E.G.District.
1. The Vice-Chancellor Shall be Ex-Officio Chairman.	
2. The Term of Nominated/Co-opted Members Shall be two years.	
3. The Research and Extension Council shall meet at least once in a year.	





C. FACULTY STRENGTH

The cadre-wise strength of teaching staff of Dr.YSRHU is as follows

Teaching Staff	
Post	No.
Professors	18
Associate Professors	23
Assistant Professors	98





III. EDUCATION

Teaching Institutions

Dr.YSR Horticultural University (Dr.YSRHU) offers, B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture & Landscape Architecture and Spices, Plantation, Medicinal & Aromatic crops and Ph.D (Horticulture). In addition to these, Dr.YSRHU is also offering two years Post-metric-diploma programme in horticulture.

The list of colleges and polytechnics with their location, year of establishment and courses offered is given in Table-1.

S.No.	Year of establishment	Name of the institute & location	Courses offered
I. Colleges of Horticulture			
1.	2007	College of Horticulture, Anantharajupeta, YSR Kadapa district	B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture & Landscape Architecture and Spices, Plantation, Medicinal & Aromatic crops
2.	2007	College of Horticulture, Venkataramannagudem West Godavari district	B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture & Landscape Architecture and Spices, Plantation, Medicinal & Aromatic crops and Ph.D (Horticulture)
3.	2016	College of Horticulture, Parvathipuram, Vizianagaram District	B.Sc. (Hons.) Horticulture
4.	2017	College of Horticulture, Chinalataripi, Prakasam District	B.Sc. (Hons.) Horticulture
II. Horticultural Polytechnics			
1.	2003	SKPP Horticultural Polytechnic, Ramachandrapuram, East Godavari district	Diploma in Horticulture & allied courses in Plant Breeding, Soil Science, Agronomy, Plant Pathology, Entomology, Economics, Engineering, English, extension education etc., are offered.
2.	2008	SSPG Horticultural Polytechnic, Madakasira, Anantapuram district	
3.	2009	Horticultural Polytechnic, Kalikiri, Chittoor district	
4.	2013	Horticultural Polytechnic, Nuzvid, Krishna district	





Admission Strength and out turn of Students

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Course	Students admitted (2018-19)			Students on roll (all years)		
	Boys	Girls	Total	Boys	Girls	Total
B.Sc.(Hons) Horticulture	178	352	530	178	352	530
M.Sc. (Horticulture)-4 departments	13	20	33	06	08	14
Ph.D in Horticulture	03	07	10	03	07	10

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

Course	Students admitted (2018-19)			Students on roll (all years)		
	Boys	Girls	Total	Boys	Girls	Total
B.Sc.(Hons) Horticulture	43	85	128	149	239	388
M.Sc. (Horticulture)-4 departments	6	9	15	18	13	31
Ph.D in Horticulture	2	2	4	2	3	5

COLLEGE OF HORTICULTURE, PARVATHIPURAM

Course	Students admitted (2018-19)			Students on roll (all years)		
	Boys	Girls	Total	Boys	Girls	Total
B.Sc.(Hons) Horticulture	15	45	60	40	88	128

COLLEGE OF HORTICULTURE, CHINALATARIPI

Course	Students admitted (2018-19)			Students on roll (all years)		
	Boys	Girls	Total	Boys	Girls	Total
B.Sc.(Hons) Horticulture	19	43	62	42	82	124

HORTICULTURAL POLYTECHNICS

Name of the college	Students admitted (2018-19)			Students on roll (Both the years)		
	Boys	Girls	Total	Boys	Girls	Total
Ramachandrapuram	22	33	55	36	58	94





Madakasira	48	50	98	48	50	98
Kalikiri	15	20	35	99	135	234
Nuzvid	18	20	38	30	33	63

STUDENT'S HOSTELS

Details of hostels and students accommodated during 2018-19

Name of the college/polytechnic	No. of Hostels			No. of students accommodated		
	Boys	Girls	Total	Boys	Girls	Total
CoH, V.R.Gudem	2	2	4	246	355	601
CoH, A.R.Peta	01	02	03	175	311	486
CoH, Parvathipuram	1	1	2	40	86	126
CoH, Chinalataripi	01	01	02	41	82	123
HPT, Madakasira	01	01	02	48	50	98
HPT, Ramachandrapuram	1	1	2	28	37	65
HPT, Kalikiri	01	01	02	27	37	64
HPT, Nuzvid	1	1	2	30	33	63

Research Projects operated in Colleges

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Name of the project	Name of the PI/MD	Amount (Rs.)
Dehydration of fruits and vegetables for value addition	Dr. V.Sudhavani, Assoc .Prof [Hort.], COH VR Gudem	59.5 lakhs
Estt. Of Horti Business Incubator Centre (HBIC)	Dr RV Sujatha, Asst Prof (Ag.Economics), COH, VRGudem	35 lakhs





SCHOLARSHIPS AND STIPENDS

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Name of the scholarship	No. of recipients	Amount received
Govt scholarship	313	8260649/-
RHWEP &ELP	210	18,58,500/-
NTS (UG)	23	6,90,100/-
NTS (PG)	8	1,20,000/-
Junior Research Fellow	4	3,15,360/-
Stipend		
M.Sc	22	1,10,000/-
Ph.D	2	14,000/-
Rajiv Gandhi national fellowship	-	--

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

Name of the Scholarship	No. of recipients	Amount received(2018-19)
Post metric Scholarships	330	80.30 Lakhs

COLLEGE OF HORTICULTURE, PARVATHIPURAM

Name of the Scholarship	Caste	No. of recipients	Amount received
RTF	ST	8	1,79,535-00
	SC	17	40,927-00
	BC	62	5,25,100-00
	EBC	5	1,41,549-00
	Kapu	6	2,00,755-00
	Minority	3	40,319-00

HORTICULTURE POLYTECHNIC, KALIKIRI

Name of the scholarship	No. of recipients	Amount received
S.C	04	42128.00
B.C	09	90788.00
S.T	03	25065.00
Minority	03	29596.00
EBC	02	13064.00
Kapu	05	32660.00

HORTICULTURE POLYTECHNIC, MADAKASIRA

Name of	No. of recipients	Amount received
---------	-------------------	-----------------





theScholarships		
S.C	19	1,95,036
B.C	41	2,44,785
S.T	9	1,35,304
Minority	8	67,002
EBC	11	38,659
Kapu	12	50,444
TOTAL		731,230

HORTICULTURE POLYTECHNIC, NUZVID

Name of the Scholarship	No. of recipients	Amount received (Rs.)
S.C	25	165852
S.T	7	51251
B.C	34	217591
E.B.C (O.C)	6	21344
Minority	4	27554

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

Name of the Scholarship	No. of recipients	Amount Received
BC Post Metric (Fresh)	39	3,97,891-00
SC Post Metric (Fresh)	10	1,33,462-00
ST Post Metric (Fresh)	1	13,765-00
EBC Post Metric (Fresh)	1	8,765-00
BC Post Metric (Renewal)	24	5,01,175-00
SC Post Metric (Renewal)	4	53,128-00
ST Post Metric (Renewal)	2	38,286-00
BC-C (Minority) Post Metric (Renewal)	1	14,742-00
Total:-	82	11,61,214-00



4. STUDENTS ACTIVITIES

NSS Activities

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Name of the College	Camp	Venue	Date	No. of students attended
COH, VRG	Vanamahotsavam	COH,VRG	30-07-18	200
COH, VRG	Swatchathapakwada	COH,VRG	01.08.18-15.08.18	200
COH, VRG	Swachbharat, Swach A.P	COH,VRG	04.05.18 05.05.18 30.07.18	300
COH,VRG	International yoga day	COH,VRG	21.06.18	200
COH, VRG	NSS special camp	Ramannagudem, Jagannapeta	27.02.19-05.03.19	67+68
COH, VRG	NSS Youth Festival	Acharya Nagarjuna University, Guntur	13.12.18 to 14.12.18	15



VanamManam



Ms. P. Navya Harathi receiving first prize in Rangoli

Ms. D. Archana receiving first prize in Rangoli

Students of COH, VRGudem have participated in state level NSS youth festival conducted at Acharya Nagarjuna University, Guntur on 13th and 14th December, 2018. under the leadership of NSS Programme Officer Dr.N.Emmanuel.





Self defense training programme was organized to the UG girl students at College of Horticulture, Venkataramannagudem on 23-03-2019. The programme was organized by Dr.N.Emmanuel, Associate Professor and NSS Programme Officer.

	
Medical Camp organized at Jaggannapeta	
	
Street Play at Jaggannapeta	Dental Camp at Jaggannapeta
	
Awareness Rally at Ramannagudem	Valedictory Function at Ramannagudem

NSS Special camps were conducted at Ramannagudem and Jaggannapeta villages from 27-02-2019 to 05-03-2019. NSS Programme Officers Dr.N.Emmanuel, Associate Professor and Dr.P.Subbaramamma, Assistant Professor along with Sri V.Sekhar, Teaching Associate and Sri Sitaram, Physical Director have co-ordinated the programme.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- Vanamahotsavam planting of tree saplings and avenue trees in the adopted villages.
- Swatch Bharath Programme service in the old age home and orphanages.





- Training students in Yoga, Blood Donation Camp, Free Eye Screening Camp, Digital Payments.
- NSS Day, World AIDS Day, Youth Day, Non-Violence Day, Independence Day, Republic Day, Volunteers Day, National Educational Day etc., were celebrated.

Special Camp activities:

- NSS special camp was organized by the NSS programme officers, Dr. M. Jayaprada, Unit I officer and Dr. K. Arunodhayam, Unit II officer i/c from 17-01.19 to 23-01-2019 in two adopted villages B-Kamapalli and Chinnaorampadu. A total of 120 volunteers from II year B.Sc. (Hort.) actively participated in the various activities for upgrading the livelihood of beneficiaries during the camp. The following activities were taken up during the special camp.
- Socio-economic survey of the village, Training the women on alternate income methods like preparation of jams, jellies, kitchen gardening etc.,
- Medical camp, Veterinary camp, Cleaning and Whitewashing of Anganwadi kendras and Government Schools.
- Planting the trees in Government schools, Panchayats, Cleaning and bleaching the drains, Awareness rallies.
- Educating the villagers on maintenance of health and hygiene, Computer Literacy, Adult Education.

Other Activities

1	AP Navanirmanadeeksha	02-06-2018
2	International Yoga day	21-06-2018
3	NABARD formation day	12-07-2018.
4	Independence Day	15-08-2018.
5	“SwachaPakwada” a fortnight long programme was inaugurated on 01-08-2017	01-08-2018 to 15-08-2018
6	Teachers Day on the occasion of 128 th Birth day celebrations of Dr. Surveypalli Radha Krishnan	05-09-2018
7	“Swachtha hi seva “ awareness programme	25-09-2018
8	Antiragging awareness programme	05-10-2018
9	“Agricultural Educational Day” on the occasion of 132 nd Birth Day of Dr Babu Rajendra Prasad to create awareness about agricultural education among school children	03-12-2018

HORTICULTURE POLYTECHNIC, KALIKIRI

Name of the College	Camp	Venue	Date	No. of students Attended
Horticulture Polytechnic, Kalikiri	NSS General activity	Horticulture Polytechnic, Kalikiri	21-08-2018	50





Horticulture Polytechnic, Kalikiri	NSS General activity	Horticulture Polytechnic, Kalikiri	29-08-2018	50
Horticulture Polytechnic, Kalikiri	NSS General activity	Horticulture Polytechnic, Kalikiri	04-09-2018	50
Horticulture Polytechnic, Kalikiri	Swachhata Hi Sewa	Horticulture Polytechnic, Kalikiri	15-09-2018 to 02-10-2018	50
Horticulture Polytechnic, Kalikiri	NSS Special Camp	Yellampalli, Kalikiri mandal	16-03-2019 to 22-03-2019	50

HORTICULTURE POLYTECHNIC, MADAKASIRA

Name of the College	Camp	Venue	Date	No. Of Students attended
NSS REGULAR ACTIVITIES				
S SSPG. HPT, Madakasira SPG. HPT, Madakasira	Dr.BabuJagjivan Ram Jayanthi	SSPG. HPT, Madakasira	05-04-2018	50
SSPG. HPT, Madakasira	Dr.B. R.Ambedkar Jayanthi	SSPG. HPT, Madakasira	14-04-2018	100
SSPG. HPT, Madakasira	World Environment Day	Yadava KaiyanaMandapam, Madakasira	05-06-2018	50
SSPG. HPT, Madakasira	International Yoga Day	SSPG. HPT, Madakasira	21-06-2018	50
SSPG. HPT, Madakasira	National Sports Day	SSPG. HPT, Madakasira	29-08-2018	100
SSPG. HPT, Madakasira	Teachers Day	SSPG. HPT, Madakasira	05-09-2018	100
SSPG. HPT, Madakasira	Surgical Strike Day	Chatram Village (RDT Colony)Madakasira	29-09-2018	50
SSPG. HPT, Madakasira	Gandhi Jayanthi	SSPG. HPT, Madakasira	02-10-2018	100
SSPG. HPT, Madakasira	National Unity Day	SSPG. HPT, Madakasira	31-10-2018	100
SSPG. HPT, Madakasira	National Constitution Day	SSPG. HPT, Madakasira	26-11-2018	100
SSPG. HPT, Madakasira	National Voters Day	SSPG. HPT, Madakasira	25-01-2018	50
SSPG. HPT, Madakasira	Republic Day	SSPG. HPT, Madakasira	26-01-2018	100





Madakasira		Madakasira		
SSPG. HPT, Madakasira	Swachh Pakwada	SSPG. HPT, Madakasira and in Different Villages	01-08-2018 to 15-08-2018	50
SSPG. HPT, Madakasira	SwachhtahiSewa	SSPG. HPT, Madakasira and in Different Villages	16-09-2018 to 30-09-2018	50
SSPG. HPT, Madakasira	Plantation Programmes	SSPG. HPT, Madakasira& D. Echaladdi Village		50
SSPG. HPT, Madakasira	Swachh Bharat	SSPG. HPT, Madakasira and D. Echaladdi Village	12 Programmes in Different Date	50
NSS SPECIAL CAMP				
SSPG. HPT, Madakasira	NSS Special Camp	D. Echaladdi	16-03-2019 to 22-03-2019	50

HORTICULTURE POLYTECHNIC, NUZVID

Camp	Venue	Date	No. of students attended
Anti ragging awareness programme	Horticulture Polytechnic, Nuzvid	04.10.2018	63
Plastic Free Campus programme	Horticulture Polytechnic, Nuzvid	22.09.2018	63
Swatchh Hi Sewaprogramme	VenkatadripuramNuzvid	24.09.2018	63
Rally on the occasion of "Surgical Strikes Day"	Horticulture Polytechnic, Nuzvid	29.09.2018	63
International Day For Girl Child	Horticulture Polytechnic, Nuzvid	11.10.2018	63
DaanUstavprogramme	Sneha rides children's home, Nuzvid	12.10.2018	63
National Unity Day	Horticulture Polytechnic, Nuzvid	31.10.2018	63
Constitution Day	Horticulture Polytechnic, Nuzvid	26.11.2018	63
AIDS Day	Horticulture Polytechnic, Nuzvid	01.12.2018	63
World Soil Day	Horticulture Polytechnic, Nuzvid	05.12.2018	63
Dr. B .R .Ambedkar vardhanthi	Horticulture Polytechnic, Nuzvid	06.12.2018	63





International women's Day	Horticulture Polytechnic, Nuzvid	08.03.2019	63
Birthday Celebrations of Sri Potti Sriramulu	Horticulture Polytechnic, Nuzvid	16.03.2019	63

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

Camp/Activity	Venue	Date	No. of Students attended
World Health Day	College campus and RCPuram Town	07-04-2018	50
Water Harvesting pits	College campus	14-05-2018	50
NAVA NIRMANA DEEKSHA	-do-	02-06-2018	50
International Yoga Day	-do-	21-06-2018	50
Alluri Sita Rama Raju Jayanthi	-do-	04-07-2018	50
SwachhtaPakwada	-do-	01.08.2017 to 15-08-2018	50
Independence Day celebration	-do-	15.08.2018	50
Teacher's Day	-do-	05-09-2018	50
National Literacy Day	R.C.Puram Town, East Godavari District	08.09.2018	50
Swachhta Hi Seva	College campus	15-09-2018 to 02-10-2018	50
NSS Day	R.C.Puram Town, East Godavari District	24-09-2018	50
Surgical Strike Day	R.C.Puram Town, East Godavari District	29-09-2018	50
Plastic Free Campus	College campus	29-09-2018	50
National Blood Donation Day	-do-	01-10-2018	50
Communal Harmony Day	-do-	02-10-2018	50
Daan Utsav	-do-	02-10-2018 to 08-10-2018	50
National Integration Week	-do-	19.11.2018 to 25.11.2018	50
Indian Constitution Day	-do-	26-11-2018	50
World AIDS Day	R.C.Puram Town, East Godavari District	1-12-2018	50
National Agriculture Education Day	SKPP Horticultural Polytechnic, Ramachandrapuram	03.12.2018	50
World Human Rights Day	-do-	10-12-2018	50
PottiSreeramuluVardanti	-do-	15-12-2018	50





National Voters Day	R.C.Puram Town, East Godavari District	25.1.2019	50
Republic Day	R.C.Puram Town, East Godavari District	26.01.2019	50
Silence Day	SKPP Horticultural Polytechnic, Ramachandrapuram	30-01-2019	50
Swatch Bharath Programme	-do-	19.02.2019	50
Matru Bhasha Divas	-do-	21-02-2019	
Meditation Classes	-do-	25-02-2019 to 27-02-2019	50
World International Women's day	-do-	08.03.2019	50
Ethical Voting Day	-do-	14-03-2019	50
Sri PottiSreeramulu Jayanthi	-do-	16-03-2019	50
PoshanPakwada	-do-	08-03-2019 to 22-03-2019	50
NSS Special Camp	Vella, East Godavari District	25-03-2019 to 31-03-2019	50

SPORTS, GAMES AND CULTURAL ACTIVITIES :

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUEM

Name of the College	Name of the event	Venue	Date	No of students participated
COH,VRG	11 th college annual day celebrations	COH,VRG	12.04.18	500
COH,VRG	8 th Intercollegiate sports, games, cultural and literary meet	COH,AR Pet	1.12.18 to 3.12.18	42
COH,VRG	19 th Agri unifest-2019	SDAU Gujarat	3.02.19 to 7.02.19	15
COH VRG	19 th All India agri sports meet, from	Ludhiana, Punjab	30.01.19 to 4.02.19	21





Students of COH, VRGudem have participated in 8th intercollegiate sports, games, cultural and literary meet conducted at college of horticulture, Anantharajupet from 01-12-2018 to 03-12-2018



The students of COH, V R Gudem participated in 19th All India Agricultural Universities Youth Festival at SDAU (Sardarkrushinagar Dantiwada Agricultural University), Sardarkrushinagar, Gujarat from 03-02-2019 to 07-02-2019.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- The 8th intercollegiate sports, games, cultural and literary meet 2018-19 was hosted by College of Horticulture, Anantharajupeta from 1st to 3rd, Dec, 2018. The students of College of Horticulture, Anantharajupeta won the overall championship in athletic for the year 2018-19.
- The students of College of Horticulture, Anantharajupeta participated in 19th All India Agricultural University Sports and Games Meet -2018 at Panjab Agricultural University, Ludhian, Punjab from 2nd to 5th, Jan, 2019.

COLLEGE OF HORTICULTURE, CHINALATARIPI



Intercollegiate :

Men- Athletics –400 m- 2nd(R.Thavurya Naik-CH/18-52)800 m -1st& 2nd(R.Thavurya Naik-CH/18-52,P.Hanumanth Reddy-CH/17-09)1500 m- 1st& 2nd(R.Thavurya Naik-CH/18-52,P.Hanumanth Reddy-CH/17-09)Triple jump- 3rd(M.Harish-CH/17-53) 4x100 m relay- 3rd(R.Thavurya Naik-CH/18-52,P.Hanumanth Reddy -CH/17-09,D.John Gorden-CH/17-13,Shaik.Jahangir-CH/18-19)

Women- Athletics – High jump- 2nd, 3rd(B.Sowmya-CH/17-34, ShaikSaloni-CH/18-40) Triple jump- 3rd(B.Sowmya-CH/17-34)

2. Literary events- Elocution (Telugu)- 1st , Essay writing (Telugu)- 2nd(S.Spandana-CH/17-46)

3. Cultural events – Monoaction- 1st(P.SaiVammse-CH/17-26)

All India Agricultural Universities Sports and Games Meet

Men- 800 m- 4th(R.Thavurya Naik-CH/18-52)

COLLEGE OF HORTICULTURE, PARVATHIPURAM

The Inter Collegiate Sports, Games, Cultural and Literary meet 2018-2019 held at College of Horticulture, V R Gudem:

Athletics:

S.No.	Event	Name of Student	Place
1	100 mts(Men)	G. Manmadha Rao	II
2	100 mts(Women)	T. Deepa Reddy	II
3	200 mts(Men)	G. Manmadha Rao	II
4	200 mts(Women)	T. Deepa Reddy	III
5	400mts(Women)	D.Priyanka	III
6	Shotput(Men)	B. Dayakar Naik	I
7	Long Jump(Men)	K. Suresh	III
8	Javelin(Men)	O. Raju	II
9	Javelin(Women)	S. Sharmila	I
10	Discuss (Men)	O. Raju	II

Cultural:

S.No.	Event	Name of Student	Place
1	Classical Dance	K. Sirisha	I

Literary:

S.No.	Event	Name of Student	Place
-------	-------	-----------------	-------



1	Essay Writing	M. Sarvani	II
2	Elocution	D.Vineela	II

HORTICULTURE POLYTECHNIC, KALIKIRI

Principal, Physical Director and 25 Students had participated in **7th Inter collegiate sports, games, cultural and literary meet** held at HPT, Nuzvid from 01-03-2019 to 03-03-2019. Students had won 15 prizes.

HORTICULTURE POLYTECHNIC, MADAKASIRA

Participated in 7th Inter Collegiate Sports, Games, Cultural and Literary meet which is held at Horticultural Polytechnic, Nuzvid from 01-03-2019 to 03-03-2019 (3 Days) under Dr.YSRHU and got over all championship.



HORTICULTURE POLYTECHNIC, NUZVID

S. No.	Activity	Venue	Dates	No of students	Prizes won
1	7 th inter collegiate sports, games & cultural meet.	Horticultural Polytechnic College Nuzvid	March 1 st to 3 rd , 2019	25	1.Volleyball(Boys) – 1 st 2.Badminton(Boys) – 1 st 3.100 mts (Boys) – 1 st 4.Shotput (Boys) – 1 st 5.Discuss (Boys) – 2 nd 6.Javelin (Boys) – 2 nd 7.Longjump(Boys) – 2 nd 8.Shotput (Girls) – 3 rd 9.Tennikoit (Girls) – 2 nd 10.Boys Overall Championship 11.Skit – 1 st





					12.Mono Action – 1 st 13.Essay Writing – 1 st 14.Elocution – 1 st 15.Solo Song – 1 st 16.Group Song – 1 st
--	--	--	--	--	---

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

Conducted 7th Inter Collegiate Sports, Games, Cultural and Literary meet, 2018-19 at SSPG Horticultural Polytechnic, Nuzvid.

Cultural & Literary events		
Event	Name	Result
Essay writing	P.Mounika Devi	2 nd
Elocution	B.Pushpalatha	2 nd

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUEM

Academic Excellence No.of students selected Through ICAR and other entrance exams for M.Sc.-54 Ph.D – 7

- **Three of our post graduate** students were admitted into Ph.D. programme in the reputed universities of our country *i.e.* UBKV, West Bengal; UHS, Bagalkot and Y.S.Parmar University of Horticulture and Forestry, Himachal Pradesh.
- **Four** of our students are pursuing Ph.D. Degree in our University.

Nine graduated students of this campus were admitted in M.Sc. in various top ranking universities in the country such as Gujarat Agricultural University, Gujarat; UBKV, West Bengal; UHS, Bagalkot, TNAU, Coimbatore, OUAT, Orissa; Assam Agricultural University and IGKV, Chhattisgarh and Viswa Bharathi University, West Bengal. Besides these, sixteen graduates entered into Post graduate degree in our University.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

Academic Excellence (Top ranks obtained if any in GATE-2018-19, ICAR-2018-19, Gold medals etc.,

- 5 students were selected as Horticulture Supervisors by APCRDA (Andhra Pradesh Capital Region Development Authority), Amaravathi.
- 2 students were selected by Integrated Tribal Development Agency, Paderu (ITDA) as Cluster manager(Coffee).
- 3 students were selected as Micro Irrigation Area Officers by APMIP, Kadapa, Govt. of Andhra Pradesh. One student was selected as Area Field Officer by Canara Bank.
- Number of students joined for higher education for M.Sc (JRF -4, Non- JRF-5) : 9





- Number of students joined for higher education for Ph.D : 2
- Number of students qualified for NET exam : 7

HORTICULTURE POLYTECHNIC, MADAKASIRA

Top ranks obtained in HORTICET

S.No.	Name of the Students	Rank
1	Guttalasandu Devendra Reddy	2
2	KurakuSwarnalatha	3
3	Maddileti Jayalakshmi	4
4	SiriveluAsritha	5
5	U.Soujanya	12
6	Putlur Salma	14
7	Perugu Lokesh Reddy	15

HORTICULTURE POLYTECHNIC, NUZVID

(Top ranks obtained in HORTICET-2018)

- i. V.Shanmuka Reddy – 08
- ii. K.Siva Subramanyam -22
- iii. S.Maneesha - 27
- iv. G.Mery - 32
- v. U.Spandana – 34
- vi. K.NagaHarividhya– 48
- vii. K.Neelaveni– 64

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

a) HORTICET, 2018:

- 7th Rank: MSV Lakshmi Prasanna
- 13th Rank: K. Hyma
- 21st Rank: V.SuvarnaSruti
- 23rd Rank: B.Srinu
- 33rd V.V. Sai Rama Varaprasad
- 8 Nos. of students secured seats in B.Sc Horticulture at HCRI, V.R.Gudem, ParvathipuramChinnalaterpy from this polytechnic college through HORTICET, 2018.

Student Ready Programme

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

As a part of this programme both Rural Horticultural work Experience Programme (RHWEPE) and Experiential Learning Programme (ELP) with the following modules were conducted



simultaneously to the final year B.Sc. (Hons) Hort. students in both semesters. Each student was attached two modules in ELP.

Rural Horticultural work Experience Programme (RHWEP):

- Students gained practical experience regarding various package of practices in different horticultural crops like pruning, fertigation, harvesting etc.
- Through visits to different firms students got practical exposure in preparation and marketing of bio inputs like vermicompost, *Pseudomonas fluorescens*, *Trichoderma viridi*, Bt etc.
- Students gained knowledge regarding socio economic status of horticultural farmers in their village.
- Got expertise in different extension strategies to transfer technology to farmers like method demonstration etc

Module -1 – Commercial Horticulture Nursery

- The ELP students are involved in the production of elite plant material for different fruit crops.
- They gained the knowledge on sterilization of soil, selection of seed material, grading and plant protection measures.
- They gained hands on experience on grafting techniques like, ground layering in guava, Veneer grafting in mango and raising of acid lime seedlings in raised bed method, containers and pro-trays.
- They produced acid lime seedlings cv. Balaji -25,000 no's, guava layers -2,000no's and other ornamental plants.

Module -II- Protected cultivation of high value vegetable crops

- **The students have grown high value vegetable crops like** cucumber and tomato in the protected structures.
- The students are exposed to training and pruning, fertilization, pest and disease management of these crops.
- The different inter cultural practices like sterilization of soil, staking, maintenance of drip irrigation and foggers are also done by the students.

Module- III: Processing of fruits and vegetables for value addition

- Students practically gained hands on experience on processing of fruits and vegetables for value addition.
- Students got exposure of Identification of sources for procurement of raw material at possible low cost, planning and execution of a market survey, preparation of processing



schedule, project module based on market information, calculation of capital costs, source of finance and assessment of working capital requirements and other financial aspects.

- In future it is proposed to prepare fruit beverages and papads in large scale for improving the profits.

Module - IV: Bio-Inputs: Bio-Fertilizers and Bio-Pesticides

- Students got practical knowledge regarding vermicompost production and maintenance of vermicompost unit.
- Besides they were acquainted with marketing skills of vermicompost and application techniques of various other bio-inputs.
- Students were engaged in organic vegetable production by using different bio-inputs.

Module –V: Mushroom culture

- Students were equipped with practical knowledge regarding construction, cultivation and disinfection, substrate preparation and pasteurization, procurement of mother culture, spawn preparation, production of mushrooms and marketing.

Module – VI: Organic Production Technology

- Students got practical knowledge regarding organic production and maintenance of organic unit.
- Organic Production Technology for Alternative Cropping Systems. The present and future demands of food can be met through intensive crop production with temporal and spatial increase in productivity. Crop diversity is the basic principle of sustainable agriculture.

Equipment purchased

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

Sl. No.	Purpose	Name of Laboratory where Equipment installed	Amount (Rs.)
1	To carry out PG Research and for practical classes of UG students	Digital PH Meter ATC	8,968.00
2		Quartz Double Distillation Unit with quartz boiler and quartz condenser	1,28,233.00
3	For Plant Physiology laboratory strengthening	Hot air oven	44,700.00
4		Digital conductivity meter	9,145.00
5		Water bath & centrifuge	51,260.00
6		Hot air oven	39,775.00
7		Lab Equipment (Gloves,	9,735.00





		magno super, lens)	
8	To carry out PG Research and for practical classes of UG students	Digital Vernier Calliper& Test Sieves	7,434.00
9		Cyclo Mixer	8,585.00
10		Magnetic Stirrers with hot plate	6,962.00
11		Dissecting Microscope	23,128.00
12		Equipments	26,639.00
14		Lab Equipments & materials	19,410.00
15		Lab Equipments& materials (weight balance, digital electrical balance)	85,428.00
19		For Fruit science laboratory strengthening	Moisture Analyzer
21	Equipments		85,208.00
22	LG fridge		24,400.00
23	Hot air oven		61,398.00
24	To carry out PG Research and for practical classes of UG students	Flame photo meter	62,155.00
26		Water bath	13,500.00
27		Deep freezer	26,773.00
28	To carry out PG Research and for practical classes of UG students	Automatic solvent extraction system	2,07,712.00
29		Table top cooling centrifuge	1,77,723.00
30		Fume hood	1,29,025.00
31		Equipments	52,973.00
32		Sanitary Napkin incinerator	45,150.00
33		Low temperature	80,085.00
34		Brush cutter	33,000.00
35	Central laboratory	Automatic Nitrogen / Protein	1,32,447.00
36		Leaf area meter	4,86,675.00
37		Conveyor Belt	3,80,835.00
38	For plant pathology strengthening	Deep Freezer	62,186.00

HORTICULTURE POLYTECHNIC, KALIKIRI

S. No.	Equipment	Cost (Rs.)
1	EPSON LCD Projector	27,500.00

Visit of Foreign dignitaries / University officers

HORTICULTURE POLYTECHNIC, KALIKIRI



S. No.	Date	Name of the Visitor & Address	Purpose of Visit
1	28-04-2018	Dr.M.L.N.Reddy, Dean of Horticulture, Dr.YSRHU	Inspected Hostels & College buildings and given suggestions for the students and staff for the improvement of the institute.
2	20-07-2018	Dr.M.L.N.Reddy, Dean of Horticulture, Dr.YSRHU	Inspected Hostels & College buildings and given suggestions for the students and staff for the improvement of the institute.
3	12-10-2018	Dr.A.Sujatha, Dean of Student Affairs, Dr.YSRHU., V.R.Gudem	Inspected hostels, fields and had meeting with students.
4	27-10-2018	Dr.G.N.Reddy, Retd. Professor	Awareness on Organic Farming to the students.
5	01-12-2018	Dr.M.L.N.Reddy, Dean of Horticulture, Dr.YSRHU	Inspected hostels, fields and had meeting with students and given suggestions for improvement of the college.
6	19-03-2019	Honourable Vice Chancellor Sri Chiranjiv Choudhary, IFS	Given suggestions for the students and staff for the improvement of the institute and he also inspected Hostels and office building.
7	23-03-2019	Sri M. Krishna Reddy,Estate Officer, Dr. YSRHU.,	Inspected Hostels and office Buildings, Approach road and Playground.

HORTICULTURE POLYTECHNIC, MADAKASIRA

S.No.	Name of the Visitors & Address	Purpose of Visit
1	Dean of Students Affairs (DSA)Dr. A. Sujatha and Controller of Examinations (COE) Dr. K. Gopal, Dr. YSRHU, VR Gudem.	Inspected the college and Hostels and interacted with the Non Teaching Staff Contract Workers and Students of SSPG. HPT, Madakasira on 29-04-2018





IV. RESEARCH

THRUST AREAS OF RESEARCH

- Increasing productivity
- Sustaining productivity under biotic and abiotic stress
- Improving nutritive value
- Environment protection
- Increasing profitability to the farmers
- Export promotion
- Minimization of post harvest losses
- Processing and value addition
-

RESEARCH STATIONS

Sl.No.	Horticultural Research Stations	Research Crops	AICRP on
1.	Horticultural Research Station, Kovvur, West Godavari District.	Banana, elephant foot yam, colocasia, dioscorea	Banana, elephant foot yam
2.	Horticultural Research Station, Ambajipeta, East Godavari District.	Coconut, cocoa	Coconut
3.	Horticultural Research Station, Pandirimamidi, East Godavari District.	Fruits, vegetables, palmyrah, rubber, passion fruit	Palmyrah
4.	Horticultural Research Station, Venkataramannagudem, West Godavari District	Sapota, jack, betelvine, medicinal & aromatic plants, vegetables	Sapota, jack, papaya, betelvine, medicinal plants
5.	Horticultural Research Station, Chintapalli, Visakhapatnam District.	Spices, flowers, coffee, pine-apple, ginger,	Black pepper, turmeric, ginger
6.	Horticultural Research Station, Peddapuram, East Godavari District	Tapioca	Tapioca
7.	Post harvest Technology Research Station, Venkataramannagudem, West Godavari District.	Mango, sweet orange	
8.	Horticultural Research Station, Lam, Guntur District.	Chilli, vegetables, spices	Chilli, vegetables, grain spices
9.	Horticultural Research Station, Darsi, Prakasam District.	Sweet orange, vegetables	-
10.	Mango Research Station, Nuzvid, Krishna District	Mango	-
11.	Cashew Research Station, Bapatla, Guntur District.	Cashew	Cashew
12.	Horticultural Research Station, Vijayarai, West Godavari District.	Oil Palm, vegetables	Oil palm, Cocoa
13.	Citrus Research Station, Tirupati, Chittoor District.	Citrus, sweet orange	Sweet orange, acid lime
14.	Horticultural Research Station, Anapuramu, Anapuramu District.	Arid fruit crops	Pomegranate, amla
15.	Horticultural Research Station,	Fruit crops, vegetables	Fruits



	Anantharajupeta, Kadapa District.		
16.	Horticultural Research Station, Mahanandi, Kurnool District	Vegetables	-
17.	Citrus Research Station, Petlur, Nellore District.	Citrus (Acid Lime)	-
18.	Horticultural Research Station, Peddapuram, East Godavari District	Tapioca, Sweet Potato	Tapioca, Sweet Potato

SEASONAL CONDITIONS AND CROP PERFORMANCE

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Herbal garden was extended with new medicinal crops and the growth of all the medicinal and aromatic crops was satisfactory.
- Betelvine: Crop performance was satisfactory and the germplasm established well in the experimental farm.
- Growth of Jack fruit trees in different trials is satisfactory. Twenty-six genotypes in germplasm trial are in bearing stage. Gummosis was observed in Burliar, Gumless Jack and Pechiperai and it was controlled by Bordeaux paste application. Growth of Rambutan and Dragon fruit in different trials are satisfactory.

MANGO RESEARCH STATION, NUZVID

The seasonal conditions were favorable for vegetative growth of the tree. Flowering was observed during the month of January in varieties like Rasalu, Totapuri etc. Delayed flowering was observed in Baneshan due to high night temperatures prevailing during the period under report. High temperatures coupled with continuous mist during flowering season resulted in severe occurrence of powdery mildew which resulted in poor fruit set. Incidence of sucking complex like thrips, hoppers was observed during the period under report. Incidence of mango fruit borer was low during this year. Infestation of fruit fly was observed in some gardens. Incidence of leaf webber, anthracnose disease on leaves was recorded in some gardens.

HORTICULTURAL RESEARCH STATION, KOVVUR

Month and Year	Avg. Temperature (°C)		Avg. Relative Humidity (%)		Rainfall (mm)	Rainy days	Avg. Evapo-Transpiration (mm)
	Maximum	Minimum	Max. (8hrs)	Min. (14 hrs)			
April,2018	38.33	25.26	87.80	19.00	12.40	2.00	4.23
May,2018	39.80	27.16	73.48	19.00	27.20	2.00	3.60
June,2018	35.16	26.70	70.03	25.33	113.90	6.00	4.13
July,2018	31.74	25.93	93.51	40.96	309.20	21.00	2.19
Aug,2018	31.80	24.12	93.00	41.09	155.30	16.00	2.88
Sept,2018	35.50	25.06	93.13	26.93	64.00	7.00	3.76
Oct, 2018	36.12	24.12	90.16	19.00	31.30	1.00	4.74
Nov,2018	34.26	22.46	88.10	19.00	9.10	1.00	4.23



Dec,2018	30.25	20.45	90.16	19.00	48.30	3.00	2.94
Jan, 2019	29.77	18.16	95.41	19.09	25.70	1.00	5.54
Feb,2019	32.35	21.89	92.60	19.00	0.00	0.00	3.49
Mar,2019	35.51	23.48	91.93	19.00	4.10	1.00	3.36
Total	-	-	-	-	800.50	61.00	-
Mean	34.22	23.73	88.28	23.87	-	-	3.76

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- **Geographic Features:** *Altitude* : 260 MSL - 1400 MSL
Latitude: 17°.13' North Latitudes
Longitude: 84°.33' East Longitude
- **Area Coverage** : 11 agency mandals of Visakhapatnam district
- **Land Topography** : Variable landscape ranging from wide plains to rolling, hill ranges covered with dense vegetation and valleys.
- **Climate** : Sub-humid with high seasonal variation
- **Rainfall** : 1360 mm
- **Temperature** : **Min.:** 10.5 - 15.80°C **Max.:** 25.90 – 35.97°C
- **Relative Humidity** : 58.0– 99.2%
- **Soils** : Red sandy loams (51.58 percent); Red loams with clay base(43.20 percent) and alluvial soils (4.30 percent)
- **Land use Pattern** : Total geographical area -17.996 lakh ha.
 Area sown -19.24%, Forests - 58.86%,
 Irrigated area - 27.20%
- **Crops grown** : Black Pepper, Coffee, Ginger, Turmeric, Cardamom, Pine apple

Mandate:

- Study on Important Spice crops like black pepper, ginger, turmeric and orchids

State wise lead function:

- Lead centre for black pepper, ginger and turmeric

Area of operation:

- Tribal areas as well as plains for black pepper, ginger, turmeric - 11 agency mandals of the Visakhapatnam district

Location specific problems and constraints

Specific Constraints:



1. Acidic soils
2. Major area is under rain fed
3. Undulated topography
4. Soil erosion
5. Podu cultivation
6. Poor and neglected soils
7. Erratic rain fall
8. Weed problem during rainy season

Crop constraints:

1. **Pepper:** *Phytophthora* foot rot, Slow wilt and termite attack during summer
2. **Ginger:** Soft rot disease, *Phyllosticta* leaf spot, micro nutrient deficiencies and weeds management
3. **Turmeric:** Weed management, rhizome rot, leaf spot, leaf blotch

Weather prevailed in Agency area of Visakhapatnam during July- September months favoured the incidence of foot rot disease in black pepper, rhizome rot incidence in ginger and turmeric.

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

Meteorological data for the year 2018 at Horticultural Research Station Pandirimamidi

Weather data for the period at Horticultural Research Station, Pandirimamidi

MATEOROLOGICAL DATA FOR THE PERIOD 2018-19					
Month	Ave Temperature		Relative Humidity	Normal Rain Fall	Normal Rain Days
	°C		%		
	Min.	Max.	Average	Mm	No.
April	19.1	39.6	73.6	47	05
May	24.4	41.0	75.7	8	01
June	22.2	40.0	84.7	222	12
July	23.0	34.5	90.6	251.6	23
August	23.0	34.5	89.2	223.8	21
September	21.0	35.9	87.1	113.6	14
October	14.0	35.0	81.8	112.2	08
November	19.3	33.3	84.27	108.2	06
December	18.3	29.1	84.4	56.6	02
January	15.91	29.6	82.3	15.4	02
February	16.9	32.5	73.8	27.8	01
March	20.7	34.0	76.7	3.4	01
				1189.6	96

HORTICULTURAL RESEARCH STATION, DARSI

A total of 326.0 mm rainfall was received during the period from June, 2018 to December, 2018 as against the normal rainfall of 781 mm with a deviation of -58.26. The rainfall distribution is also uneven and as such the horticultural crops such as acid lime, mango, guava and chilli in prakasam district recorded poor yields.



CASHEW RESEARCH STATION, BAPATLA

During the year 2017-18, the total rainfall received is 886.2 mm, with 59 rainy days. The average maximum and minimum temperatures were 33.7 and 23.3 respectively.

During the season the pest and disease incidence is less with respect to Tea mosquito bug, leaf and blossom webber, leaf miner, leaf folder, shoot tip caterpillar and apple and nut borer. Tea mosquito bug incidence was 5-10 per cent in north costal districts of Andhra Pradesh. However cashew stem and root borer was the major problem in all cashew growing areas of the state.

CITRUS RESEARCH STATION, TIRUPATI

Meteorological Data: (2018-19)

Month	Temp(⁰ C)		Relative Humidity (%)		Evaporation (mm)	Total Rain fall (mm) & rain days
	Max	Min	Morning	Evening		
April, 2018	38.00	25.60	79.20	38.20	7.20	2.2 (0)
May, 2018	38.40	26.70	76.90	39.40	6.20	84.2(3)
June, 2018	36.90	26.70	70.40	42.10	5.60	51.20(5)
July,2018	35.90	26.70	66.60	41.30	6.40	35.60(2)
Aug,2018	35.10	26.20	70.30	44.00	5.90	70.60(5)
Sep,2018	34.70	24.70	81.00	48.20	5.20	169.40(9)
Oct,2018	33.50	22.30	85.40	50.90	5.10	90.00(4)
Nov,2018	30.80	21.20	88.80	55.60	4.60	114.8(6)
Dec,2018	29.40	19.80	85.30	58.00	5.10	27.40(2)
Jan, 2019	29.50	16.40	85.10	45.60	5.30	0.20
Feb, 2019	33.80	20.50	79.80	39.60	6.60	1.00 (0)
March, 2019	37.4	23.32	70.80	30.68	7.20	0.0

4. Physical and Chemical Properties of Soil

Sl. No.	Properties	Units	Name of the Centre - Tirupati
I. Physical Properties			
1	Soil type	--	Sandy loam
2	Clay content	%	10
3	Bulk density	g/cc	1.5-1.6
4	Moisture holding capacity	%	11-12
5	Moisture at field capacity	%	9
6	Moisture at wilting	%	3
II. Chemical Properties			
7	pH (1:2.5)	--	7.2
8	Conductivity	Dsm ⁻¹	0.09
9	Available N	Kg/ha.	180



10	Available P	Kg/ha.	12.5
11	Available K	Kg/ha.	160
12	Available Ca	ug/g	720
13	Available Mg	ug/g	240
14	Available Zinc	ug/g	6.0

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

A. Seasonal conditions and crop performance

Cassava:

Time of planting: June-July

It is a 10-11 months crop. The crop growth was satisfactory and performed well in rainy season. In case of dry weather, the crop has become susceptible to red mite and white flies.

Sweet Potato:

Time of planting: Kharif: June-July

Rabi: October – November

Summer: February - March

It is a 90-120 days crop depends upon varieties. If delayed the harvesting, the incidence of sweet potato weevil became more problematic.

Meteorological data for 2018-19

Month	Temperature (°C)		Rainfall (mm)
	Maximum	Minimum	
	18-19	18-19	18-19
June	35.71	26.82	81.20
July	31.34	25.77	95.00
August	31.65	25.66	32.80
September	33.64	25.29	41.20
October	33.76	24.25	22.50
November	32.30	22.38	11.40
December	29.12	20.12	89.70
January	29.24	18.25	8.90
February	31.60	18.60	6.90
Average	32.04	23.02	-
Total	-	-	389.60

CITRUS RESEARCH STATION, PETLUR

WEATHER DATA FROM APRIL, 2018 TO MARCH, 2019

Weather Data					
Month	Temperature (Max) (°C)	Temperature (Min) (°C)	Total Rainfall (mm)	Total Rainy Days	Decennial Mean Rainfall (mm)



April, 2018	41.0	22.0	Nil	Nil	15.85
May, 2018	40.6	22.8	31.4	3	19.05
June, 2018	38.8	22.4	89.6	6	70.31
July, 2018	36.8	22.0	5.6	2	120.18
August, 2018	35.5	21.0	58.6	6	143.16
September, 2018	36.6	19.2	41.6	3	19.00
October, 2018	34.7	17.5	16.2	4	197.18
November, 2018	28.0	17.0	276.2	9	361.55
December, 2018	26.0	15.0	44.0	3	98.85
January, 2019	26.0	12.9	7.8	2	6.14
February, 2019	32.2	17.1	17.3	1	18.47
March, 2019	39.0	19.0	Nil	Nil	7.66
Total Rainfall			588.3	39	1177.4
Decennial Mean			1177.4		

The rainfall (588.3mm) received during the period under report was less than decennial mean rainfall (1177.4mm). The maximum temperatures recorded in April month was highest (41⁰C) and lowest in January, 2020 (26.0⁰C). Whereas, the minimum temperatures recorded in January, 2019 (12.9⁰C) was least and highest minimum temperatures were recorded in the month of May, 2018 (22.8⁰C).

Impact of weather on acidlime:

Severe leaf fall in acid lime orchards was observed due to low night temperatures during December, January and February months. Dry root rot incidence was observed during summer months in bearing old acid lime orchards.

Severe infestation of mites and snow scale was observed in bearing acid lime orchards during hot summer months.

Thrips incidence was also observed in acid lime orchards in July and August months. Bacterial canker, greasy spot incidence was noticed in acid lime orchards during November and December months.

D. Research findings in crop improvement

HORTICULTURAL RESEARCH STATION, VIJAYARAI

- Of the 12 years old (2007 planting) ten new cross combinations of oil palm (NRCOP-1 to NRCOP-10) evaluated, the cross combination NRCOP-4 recorded significantly highest

fresh fruit bunch yield of 25.89 t ha⁻¹ followed by NRCOP-1(23.05 t ha⁻¹) and NRCOP-6 (22.04 t ha⁻¹)

- Of the 7 years old (2011 planting) ten new progeny cross combinations of oil palm (NRCOP-31 to NRCOP-40) evaluated, the cross combination, NRCOP-39 recorded significantly highest fresh fruit bunch yield of 26.60 t ha⁻¹ followed by NRCOP-32(25.17 t ha⁻¹) and NRCOP-34 (24.95 t ha⁻¹)

HORTICULTURAL RESEARCH STATION, KOVVUR

Studies on improving the shelf life of banana cv. Tella Chakkerakeli

Post harvest treatment of banana cv. Tella Chakkerakeli with 1- MCP at 750 ppb for 12 and 24 hours and 1- MCP at 400 ppb for 24 hours significantly improved shelf life of banana by 7.67 to 8.34 days over banana without 1-MCP treatment and by 4.33 to 5.00 days over banana stored in PE packing without 1-MCP treatment.

Varieties Recommended for release through AICRP on tuber crops

The cassava variety 'TCa 12-9' was recommended for release in Andhra Pradesh during 18th Annual Group Meeting, AICRP on Tuber Crops held at Thiruvananthapuram, Kerala from 26th – 28th, April, 2018.

Salient features of TCa 12-9:

- Medium duration: 8-9 months
- Average tuber yield/Ha : 40 – 42 t/ha
- Average starch content : 24-26 %
- Average dry matter content: 35-38 %
- Cassava mosaic incidence: 2-4 %





A.CROP IMPROVEMENT

FRUITS

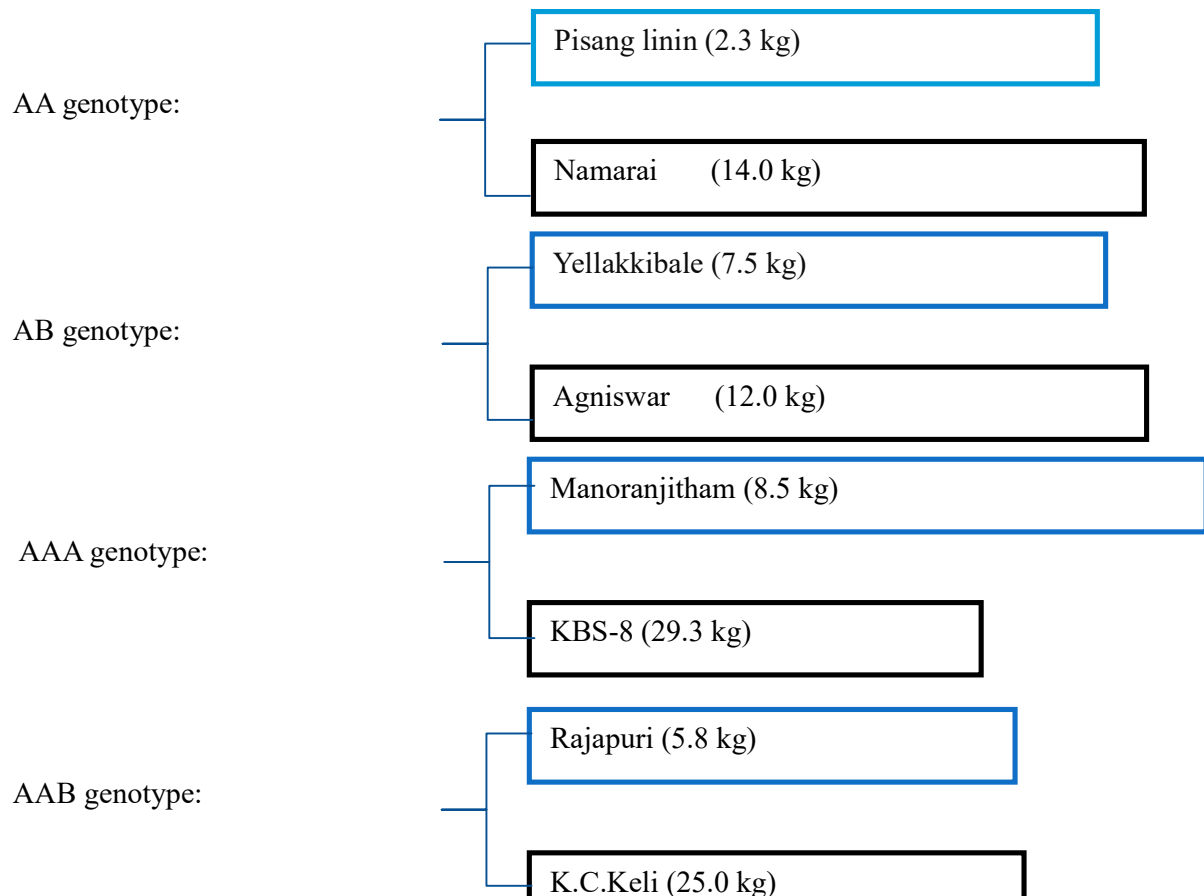
HORTICULTURAL RESEARCH STATION, KOVVUR

Collection, Characterization, Conservation, Evaluation and Utilization of banana germplasm

Among the different genomic groups evaluated for their growth characters, Pisang linin (AA) (202 days), Agniswar (AB) (236 days), Tellachakkerakeli (AAA) (214 days), Popoulu (AAB) (179 days), Kothia (ABB) (198 days), FHIA-17 (AAAA) (277 days) and PA-03-22 (AAAB) (187 days) recorded earliest shooting than other genotypes in the same genomic group.

Among the different genomic groups evaluated for yield characters, Pisang linin (AA) (258 days), N. Jalipoovan (AB) (332 days), Tellachakkerakeli (AAA) (309 days), Popoulu (AAB) (254 days), Monthan (ABB) (288 days), FHIA-23 (AAAA) (347 days) and PA-03-22 (AAAB) (339 days) recorded earlier harvesting than other genotypes in the same genomic group.

Yield range in different genomic groups in banana:





Evaluation of promising clones of banana

In plant crop, among the Cavendish group, KBS-8 (AAA) has recorded highest bunch weight of 28.33 kg than local check. In Poovan Group (AAB), local check (KC Keli) recorded higher bunch weight of 15.33 kg than H-531. Under Plantain group (AAB), ManjeriNendran-II has given higher bunch weight of 19.67 kg which was significantly higher than local check *i.e.*, Nendran (13.00 kg) whereas in Monthan group (ABB), Kovvur Bontha has recorded highest yield of 20.67 kg which was on par with NRCB-8 and BCB-2 clone. Similarly, under Pisang awak group (ABB), BCB-1 has recorded higher yield (25.33 kg) which was on par with check.

Clonal Selection in banana

During the year 2018-19, identified a clone of Tella Chakkerakeli at Nutakki village of Guntur district in Shri Sivaramireddy field having 160 fingers with eight hands per bunch. The selected clone also possessing specific characters like more number of fingers in 1st and 2nd hands.

Evaluation of new introductions of banana (MLT-2)

In ratoon crop, among the two clones in Karpuravalli group, NRCB slecion-10 recorded significantly shortest plant height (2.51 m) over check *i.e.* NukalaBontha (3.93 m). Significantly maximum number of green leaves per plant (17.83) was recorded in NRCB Sel-10 over Check (NukalaBontha). Earlier shooting (172.78 days) was observed in NRCB Sel-10 over check (187.50 days).

Among the three clones in plantain group, significantly maximum plant height (3.65 m), pseudostem girth (60.30 cm) was recorded in ManjeriNendran II. However, highest number of green leaves (14.75) was recorded in BRS selection, Popoulu. Nendran took less number of days (145.00 days) for shooting over ManjeriNendran II (150.50 days) and BRS selection Popoulu (156.50 days).

Evaluation of the field performance of the macro-propagated plants of banana

In both the cultivars (Grand Naine and Tella Chakkerakeli) earliest shooting was recorded in plants propagated through suckers as compared to macro propagated ones and there was no significant difference in other growth characters like plant height, girth, number of leaves and leaf area. However, among the two cultivars, earlier harvest by 5 days was recorded in Grand Naine macro propagated one where as in Tella Chakkerakeli, 19 days early harvest was recorded in sucker propagated one. Among the two treatments, slightly higher bunch weights were recorded in plants propagated through macro propagation as compared to sucker propagated ones.

Low cost gelling agents for *in vitro* multiplication of banana

Highest shoot proliferation of banana cv Grand nainewas recorded in the treatment, MS media supplemented with 0.28% Phytigel (2.2) followed by 0.48% + 0.42% Agar + Corn flour (2.1) respectively (Fig:1). Poor establishment of the cultures and low multiplication rate was

recorded in the media supplemented with 4% Isabgol and 17.5% sago powder used as gelling agents.



a)Phytigel (0.28%) b) Corn flour (0.42%) + Agar (0.48%)

Fig:1 Highest shoot proliferation in banana cv. Grand naine in MS media solidified with a) Phytigel (0.28%) and b) Corn flour (0.42%) + Agar (0.48%)

Optimization of *in vitro* protocol for shoot proliferation in banana cv. Karpura Chakkerakeli

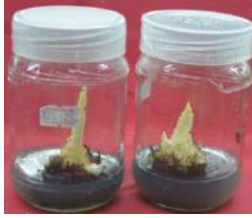
Among the different surface sterilization treatments tested for producing the axenic cultures of banana cv. K.C.Keli, suckers treated with 0.1 % HgCl_2 at 12 minutes, followed by 8 minutes along with supplementation of MS media with 1.0 ml/l anti-microbial supplement recorded the highest explant survival (70.0 %) over other treatments.

Higher phenol exudation in the initial establishment stages is the main detrimental factor for culture establishment in Poovan group banana. To circumvent the phenol exudation from the explants, MS media was supplemented with different concentrations of ascorbic acid. Among the treatments, media enriched with 100 mg/l ascorbic acid after autoclaving through filter sterilization recorded the highest ex-plant survival (70.0 %) and lowest phenol exudation (Fig:2). Enriching the media with ascorbic acid before autoclaving is not effective as it is a heat liable component.



Fig:2 Culture initiation in banana cv.KarpuraChakkerakeli (Poovan AAB) in MS media supplemented with 100 mg L^{-1} ascorbic acid (left) in comparison with Control (right) to control the phenol exudation.

Among the different growth regulator combinations tested along with different antioxidants, MS media mg/l IAA + 120 mg/l Charcoal + 40 mg/l Adenine survival (80.0%) followed by 0.4 mg/l Thiamine –HCl + 160 mg/l Adenine sulphate + sterilization (72.0 %) and par with each other (Fig:3).



supplemented with 4.5 mg/l BAP + 0.18 Ascorbic acid + 200 mg/l PVP + 200 mg/l sulphate recorded the highest ex-plant the treatment 5 mg/l BAP + 2 mg/l IAA + 100 mg/l Tyrosine + 100 mg/l Inositol + 0.01 % ascorbic acid through filter both the treatments were statistically on

Fig:3 Response of banana cvKarpuraChakkerakeli (Poovan AAB) apical meristem in MS media supplemented with 5 mg/l BAP + 2 mg/l IAA + 0.4 mg/l Thiamine –HCl + 100 mg/l Tyrosine + 100 mg/l Inositol + 160 mg/l Adenine sulphate + 0.01 % ascorbic acid through filter sterilization in I₂ cycle.

Standardization of protocol for *in vitro* regeneration of banana cv. Grand Naine from male flower bud as explant

Among the different growth regulator combinations tested for explant survival, except in control (40.0%) and kinetin supplemented media, in all other treatments the survival rates were more than 75%. Among the treatments, highest culture response was observed in the form of swollen bases in the MS media supplemented with 1.0 mg/l TDZ and 1.5 mg/l TDZ in combination with 0.5 mg/l IAA after 15 days of culture initiation. In these two treatments, 100 % CLBs were formed from ex-plants within 25 to 28 days of culture initiation.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Under the experiment “Collection, Characterisation, Conservation, Evaluation and utilization of Jackfruit germplasm” highest plant height was recorded in Monkey jack (12.0 m), while canopy volume was maximum in Ainipala (1086.3 m³). Number of fruits and Yield was maximum in Palur-1 (56.0 and 398.1 kg per tree). However, average fruit weight (11.5 kg) was maximum in Boduluru-4.
- Under Varietal Trial on Jackfruit (MLT-1), seven varieties were tested for yield and quality attributes. Maximum yield was recorded in Palur-1(398.1 kg /tree) whereas average fruit weight (7.4 kg) was maximum in Velipala.
- Performance of promising Date palm varieties was initiated. Among 4 tissue culture date palm varieties, maximum plant height (1.8m) was recorded in Accsona code 101



- Experiment on Performance of Dragon fruit in Coastal districts of Andhra Pradesh was conducted. In white fleshed variety, days taken for flower to fruit formation was 35-40 days and the fruit TSS was 11 Brix⁰
- Among the 40 accessions of sapota germplasm maintained, Kirthabarthi recorded maximum number of fruits/tree (2100) followed by kalipatti (1894.66) whereas maximum yield (160 kg fruit/tree) was recorded in Virudhnagar followed by Kalipatti (135.63 kg/tree).
- For widening the genetic base of Pala cultivar, half-sibs were planted for evaluation to select superior types and are in vegetative stage. So far dwarf types and normal growth types of seedlings were observed and normal growth trees recorded an average plant height of 2.76 m with 1.92m 1.85 m of plant spread in EW and NS directions respectively while, dwarf types with 1.48 m , 1.15 m and 1.09 m of plant height ,plant spread of EW and NS respectively.
- In the varietal/hybrids evaluation of sapota, the highest plant height and stem girth was recorded in Kalipatti variety (1.52 m and 3.68 cm) while, non significant differences were observed in plant spread in EW and NS direction for all the varieties/hybrids tested.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

1. PEP/CI/1.1: Germplasm collection, characterization, evaluation and conservation – 1987 (Cultivated & Wild accessions)

The trial was initiated during 1987. Among the 26 germplasm lines maintained, Panniyur - 1 recorded the highest number of spikes per vine (639), fresh berry yield/ vine (4.04 kg), dry yield (1.29 kg) and fresh yield/ha (4.13 t/ha) whereas the highest number of berries per spike was recorded in Neelamundi and highest dry recovery was recorded in Permabramundi (32.65 %).

2. PEP/CI/3.3: Coordinated Varietal trial in Black Pepper (2006)

The maximum plant height was recorded in C-1090 (675.87 cm) followed by HP-39 (622.63 cm) whereas the minimum plant height was noticed in ACC 33 (402.90 cm). ACC-33 recorded maximum number of branches per plant (28.96) followed by C-1090 (21.91) and ACC 57 (21.56) and these two were on par with each other. Fresh berry yield was highest in Panniyur-1 (830.05) followed by P-8 (638.45) and ACC 33 (615.49). It was observed that all varieties are susceptible to *Phytophthora* foot rot disease.

Treatment	Plant height (cm)	No. of Branches per vine	Dry yield per vine (g)
HB20052 (P-8)	601.87	18.51	638.45
PRS-88	430.53	15.70	254.61
ACC.53	473.43	18.07	290.68
ACC 106	487.07	20.43	302.55
ACC 33	402.90	28.96	615.49
ACC 57	554.93	21.56	497.90



C-1090	675.87	21.91	607.30
HP-39	622.63	19.37	404.39
Panniyur-1	442.23	21.43	830.05
Karimunda	453.80	20.12	497.70
CD 5%	80.75	5.41	157.98
SE (m) ±	26.97	1.88	52.76
CV %	9.2	15.2	18.5

3. PEP/CI/3.5:CVT 2015 on Farmers varieties of Black Pepper Series VII

It was observed that among the farmers varieties and national check, Kumpukkal variety recorded the maximum plant height (165.78 cm) followed by Zion Mundi (164.97 cm). Panniyur-1 recorded the highest number of branches vine (7.42) followed by Kumpukkal (6.14).

Treatments	Plant Height	No. of Branches/Vine
Pepper Thekkan	153.16	5.67
Kumpukkal	165.78	5.61
Zion Mundi	164.97	6.14
Panniyur-1	154.13	7.42
CD (5%)	NS	NS
SE (M)	5.65	0.95
CV	6.14	26.55

4. PEP/CI/3.6: CVT on Black Pepper -2015 Series VIII

The experiment was started during Kharif 2018 and the crop is at vegetative stage.

5. PEP/CI/3.7 Coordinated Varietal trial in Black Pepper-2018 series IX

The planting material was collected from different AICRP centres and is being multiplying due to lack of sufficient material. The experiment will be planted during *Kharif* 2019

6. TUR/CI/2.6: Coordinated Varietal trial on turmeric-2016

Among the genotypes, maximum plant height was recorded in IT 10 (149.15 cm) followed by Roma (134.58 cm) and the highest number of tillers per plant was recorded in TCP-191 (2.80). IT-36 recorded the highest fresh weight per plant (508.13 g), yield per plot (12.66 kg) and yield per ha (37.97 t) Dry recovery was highest in PTS-2 (27.87 %) followed by LTS-2 (27.40 %) and Roma (26.20%).

Treatments	Plant height	Tillers/plant	No. of leaves/plant	Fresh weight of rhizome/plant	Yield/plot (kg)	Yield/ha (t)	Dry Recovery (%)
IT 10	149.15	2.13	14.88	367.33	9.23	27.68	24.95
IT 23	94.57	1.73	17.03	353.73	8.76	26.27	18.34
IT 36	85.87	1.93	15.24	508.13	12.66	37.97	18.76
RH-9/90	98.59	2.20	15.69	460.67	11.35	34.06	16.11
RH 80	83.25	2.00	16.76	437.07	10.56	31.69	19.30
TCP 191	132.91	2.80	17.97	465.87	11.86	35.57	20.36



NDH-11	126.65	1.20	15.49	384.13	10.96	32.88	24.96
NDH-128	93.54	2.33	15.47	489.47	11.78	35.33	18.82
PTS 2	134.45	1.60	15.40	361.33	9.56	28.67	27.87
PTS-3	80.79	1.80	15.93	421.07	10.61	31.83	22.17
LTS-1	128.27	1.13	11.93	301.67	8.62	25.86	24.98
LTS-2	120.22	1.33	13.28	352.27	7.99	23.97	27.40
Roma (LC)	134.58	1.80	13.98	300.40	8.75	26.24	26.20
Prathibha (NC)	130.57	1.73	18.69	336.80	9.04	27.12	22.84
CD (5%)	12.01	0.47	2.78	75.33	1.68	5.03	2.74
SE (M)	4.11	0.16	0.95	25.77	0.57	1.72	0.94
CV (5%)	6.26	15.27	10.58	11.28	9.81	9.81	7.27

7. GIN/CI/4.3: Performance of bold and vegetable ginger

Planting material was multiplied during the *Kharif* 2018 and the experiment will be executed during *Kharif* 2019

8. Evaluation of performance of Orchid varieties under high altitude tribal zone of Visakhapatnam

Among the six commercial *Dendrobium* Spp Orchid varieties evaluated, maximum plant height was recorded in var. New Pink (44.30 cm) followed by Sonia-17 (33.27 cm) and Anna (30.85 cm) where as minimum plant height was noticed in Venus (28.55 cm). The Highest number of florets per spike was recorded in var. New Pink (11.41) followed by var. Queen Pink (10.28). Spike length was maximum in var. New Pink (44.37 cm) followed by var. Queen Pink (40.11 cm). Maximum number of spikes per plant per year was recorded in the var. New Pink (6.12) followed by var. Sonia-17 (5.48) and var. Queen Pink (5,48).

Performance of growth and flower parameters of *Dendrobium* orchid varieties grown in shade net house under high altitude tribal area of Visakhapatnam

Variety	Plant height (cm)	Leaf length (cm)	Leaf width (cm)	No. of Pseudo bulbs per plant	Days to harvest of spike	No. of florets per spike	Spike length (cm)	No of spikes /plant/year
var. Sonia-17	33.27	13.25	4.018	6.59	35.75	8.50	33.70	5.48
var. New Pink	44.30	13.38	4.73	7.10	39.27	11.41	44.37	6.12
var. Queen Pink	30.28	14.28	5.00	6.40	36.95	10.28	40.11	5.21
var. Apricot	28.80	12.78	4.19	5.54	45.10	7.05	30.31	4.61
var. Venus	28.55	13.13	3.85	5.61	46.55	7.23	33.34	4.98
var. Anna	30.85	12.27	3.96	5.26	43.33	6.32	28.83	4.36
CD @ 5%	4.96	NS	NS	1.18	3.89	3.05	6.61	NS
SE (m) ±	1.63	0.62	0.29	0.39	1.28	1.00	2.17	0.56
CV	10.01	9.39	13.32	12.75	6.21	23.72	12.39	21.89



9. Evaluation of broccoli genotypes under high altitude tribal zone of Visakhapatnam

Among the varieties tested, the variety Palam Vichitra recorded maximum plant height (67.10 cm) followed by Palam Kanchan (65.47 cm). The maximum leaf length was recorded in Palam Kanchan (52.42 cm) where as the maximum leaf width was recorded in F1 Festival (17.47 cm). The maximum curd weight (431.37 g) and yield per hectare (162.96 q) were recorded in var. Saki and the maximum curd diameter was recorded in PusaSamridhi (18.90).

Performance of Broccoli genotypes under high altitude tribal zone of Visakhapatnam

Treatments	Plant height (cm)	Leaf length (cm)	Leaf width (cm)	Plant Spread (cm)	Days to 50% curd initiation	Curd weight (cm)	Curd Diameter (cm)	Yield/ha (q)
Palam Kanchan	65.47	52.42	16.18	3650.73	65.33	341.43	12.47	128.99
F1 Festival	48.43	43.27	17.47	3203.53	53.67	312.22	17.83	117.95
Palam Samridhi	44.27	37.43	15.63	3213.79	81.33	347.13	14.20	131.14
Oynasty	51.53	42.50	14.93	3890.15	60.00	361.77	14.93	136.67
PusaSamridhi	47.76	43.35	15.80	3490.67	72.33	249.20	18.90	94.14
Saki	57.00	44.70	16.42	3896.45	61.00	431.37	12.77	162.96
Palam Vichtira	67.10	46.33	16.38	3271.67	91.33	374.27	12.87	141.39
NSC 105 B	53.70	43.90	14.83	5308.12	53.33	407.03	18.37	153.77
Pusa KTS 1	53.43	40.80	15.15	4186.72	62.00	278.97	13.97	105.39
Se(m)±	1.73	1.39	0.65	166.40	1.33	7.38	0.74	128.99
CD (5%)	5.22	4.21	NS	503.16	4.04	22.31	2.25	117.95
CV	5.51	5.50	7.04	7.60	3.47	3.71	8.50	131.14

10. Evaluation of Garlic (*Allium sativum* L.) varieties for growth and bulb yield under high altitude tribal zone of Visakhapatnam

Among the 8 genotypes evaluated, Yamuna Safed-3 (G-282) recorded the highest plant height (83.58 cm) followed by Yamuna Safed-2 (G-50) (83.46 cm). The highest number of leaves was recorded in Yamuna Safed-4 (G-323). Yamuna Safed-4 (G-323) recorded the highest bulb girth (15.13 cm), bulb weight per plant (26.53 g), number of cloves per plant (21.33), bulb yield per plot (2.48 kg) and also the highest bulb yield/ha (105.39 t).

Performance of growth and yield parameters of garlic genotypes under high altitude tribal area of Visakhapatnam

Treatments	Plant Height (cm)	No. of leaves	Leaf length (cm)	Leaf width (cm)	Bulb length (cm)	Bulb girth (cm)	Bulb wt/plant (g)	No. of cloves/Plant	Bulb yield/plot (kg)	Bulb yield/ha (q)
Bhima Purple	71.45	9.60	45.48	2.18	6.54	12.09	17.47	19.07	1.97	83.67
Bhima Omkar	67.86	9.87	42.93	2.15	5.49	11.48	8.60	16.73	1.42	60.48
YS-2 (G-50)	83.46	10.53	52.13	1.84	6.58	14.61	24.43	19.00	2.24	95.22



YS-3 (G-282)	83.58	10.33	49.87	2.36	8.69	12.49	16.08	17.80	1.89	80.31
YS-4 (G-323)	78.53	10.73	51.07	1.97	8.41	15.13	26.53	21.33	2.48	105.39
Solan Local	68.40	10.07	56.27	2.88	4.20	11.81	12.36	12.00	1.31	55.82
Manali Local	64.83	10.00	53.60	2.82	4.95	11.56	12.19	10.67	1.00	42.36
Dumbriguda Local	74.47	9.20	50.80	2.10	6.71	12.23	16.63	18.53	1.64	69.63
Se(m)±	2.34	0.45	1.92	0.16	0.91	0.64	2.91	0.65	0.26	11.7
CD (5%)	7.16	NS	5.88	0.49	2.78	1.96	8.90	1.99	0.84	35.84
CV	5.45	7.84	6.61	11.99	24.35	8.76	25.57	6.67	26.71	26.71

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

1. Studies on effect of Interstock on performance and fruit quality in mango var. Alphonso

The Alphonso mango grafted on different interstocks showed 46.4 per cent flowering with single panicles of 41 cm length with 1.22 per cent fruit set whereas in branched panicles the mean panicle length was 36.6 with 0.71 per cent fruit set.

Highest plant height (5.5m) was recorded in Peddarasam and Suvernakha and the lowest (3.8m) in A.U.Rumani. Graft Joint circumference was highest (59.6cm) in and lowest (40.6cm) in Rati banginapalli which were significantly different. The highest (8.3 & 8.4 m) plant spread in EW & NS direction was observed in Peddarasam. Highest chlorophyll content was recorded in 52 SPAD units in H-13. Highest yield per plant (110 kg) was recorded in H-13 whereas lowest (53kg) in A.U.Rumani.

Highest average fruit weight (210g) was recorded in H-10 followed by H-13 and lowest in (164g) Allampur Baneshan. The highest score of spongy tissue was recorded in Prabhasankar followed by Panchadarakalasa and Suvernakha.

2. Studies on performance of Jasmine varieties under polyhouse conditions

Among the different jasmine varieties which are grown under polyhouse conditions, Kakadamalli flowered early i.e in the month of December, followed by Pedana and Coimbatore malli and Tupparamalli.

3. Studies on performance of Rose cultivars under polyhouse conditions

Among the Rose cultivars, significantly highest plant height (75 cm) was recorded in Sovereign whereas the highest plant spread was observed in Solarie. Highest leaf area (39cm²), leaf chlorophyll content 48 SPAD units, more number of flowers (18 per plant), highest flower stalk length (9.0 cm), flower bud length (5.4cm), flower bud diameter (3.7cm) and flower stalk thickness (4.9mm) was recorded in Top Secret

AICRP on Palms (Palmyrah)



1. Survey, Collection and Evaluation of Palmyrah germplasm.

Survey and collection of palmyrah germplasm was done to identify dwarf and superior palmyrah genotypes for high neera and nungu yield. So far 272 number of Palmyrah germplasm accessions were collected and are being maintained in separate year wise germplasm blocks at Horticultural Research Station, Pandirimamidi. The germplasm accessions are being evaluated for various biometric, yield and yield related characters.

In 1991 planted germplasm accessions, the highest number of bunches (6.0) was recorded with Acc. No. 4/91 and 9/91. and the highest average number of fruits (10.6) was recorded with Acc. No. 7/91.

Among the 10 accessions of 1993 germplasm, Acc. No. 7/93 has recorded the highest number of fruit bunches (7.5) whereas the maximum number of fruits (10) per bunch was recorded with Acc.No. 6/93.

Among the 1994 planted germplasm accessions. The highest number of fruit bunches (8) as well as number of fruits per bunch (11.7) was recorded with Acc. No. 4/94.

The 1995 planted germplasm accessions are showing huge variation for plant height. Among the five accessions of 1995 planted germplasm. highest number of bunches (5.3) and highest number of fruits per bunch were recorded with Acc. 2/95.

In 1998 planted germplasm, flowering and fruiting was observed in accessions 1/98, 5/98, and 7/98. Among them Acc. No. 3/98 has recorded the highest number of bunches (3.3) as well as highest number of fruits per bunch (6.9)

Among all the accessions planted during 1999, Acc. No. 2/99, 3/99, 4/99 and 5/99 recorded flowering during this year. Among them Acc. No. 3/99 recorded the maximum number of bunches (3.5) as well as maximum number of fruits per bunch (4.14).

Among the 2000 year planted germplasm flowering was observed only in the accession 2/2000, 18/2000 and 19/2000, whereas Acc-2/200 recorded 6 number of bunches with 5.4 fruits per bunch.

In 2001 planted germplasm flowering and fruiting was observed in accessions 3/01, 6/01, 16/01, 19/01, 20/01, 21/01, 22/01, 23/01, 30/01, 32/01, 34/01, 35/01, 38/01, 39/01 and 43/01. Among them Acc. No. 23/01 has recorded the highest number of bunches (7.5). The highest number of fruits per bunch (6.0) was recorded in Acc. No. 35/01.

In the germplasm collected during 2002, flowering and fruiting was observed in accessions 3/02, 9/02 and 11/02. Among them Acc. No 11/02 has recorded the highest number of bunches (7). The highest number of fruits per bunch (13.0) was recorded in Acc. No. 3/02.

In the 2003 planted germplasm, flowering and fruiting was observed in accessions 1/03 only. In 2004 planted germplasm, flowering and fruiting was observed in accessions, 1/04, 2/04, 3/04, 4/04 and 08/04



In the germplasm collected during 1991, minimum plant height (8.78 m) was recorded in Acc.No.11/91. Maximum plant height (10.78 m), number of leaves (13.8) and stem girth (1.99 m) were recorded in Acc. No. 4/91.

In the germplasm collected during 1993, minimum plant height (5.65 m) was recorded in Acc.No.10/93 and maximum plant height (8.29m), number of leaves and stem girth was recorded in Acc. No. 4/93.

In the germplasm collected during 1994, minimum plant height (6.26 m) was recorded in Acc.No.01/94 and maximum plant height (8.26 m) in Acc.No.4/94, maximum number of leaves in Acc.No3/94 and maximum stem girth was recorded in Acc. No. 5/94.

In the germplasm collected during 1995, minimum plant height (2.24 m) was recorded in Acc.No.05/95 and maximum plant height (7.38 m), maximum number of leaves and stem girth was recorded in Acc.No1/95

In the germplasm collected during 1998, minimum plant height (4.27 m) was recorded in Acc.No.07/98 and maximum plant height (7.24 m) in Acc.No.5,6/98, maximum number of leaves and stem girth was recorded in Acc. No. 8/98.

In the germplasm collected during 1999, minimum plant height (3.19 m) was recorded in Acc.No.01/99 and maximum plant height (5.84m) in Acc.No.6/99, maximum number of leaves in Acc.No3/99 and maximum stem girth was recorded in Acc. No.4/99.

In the germplasm collected during 2000, minimum plant height (0.9 m) was recorded in Acc.No.13/00 and maximum plant height (5.53m) and maximum number of leaves was recorded Acc.No.14/00.

In the germplasm collected during 2001, minimum plant height (1.85 m) was recorded in Acc.No.45/01 whereas maximum plant height (5.8m) in Acc.No.20/01, maximum number of leaves in Acc.No38/01.

CASHEW RESEARCH STATION, BAPATLA

- Among the different hybrids of 2000 evaluated, the maximum nut yield per tree was recorded in H-218 (12.00 kg/tree) with a cumulative nut yield of 98.75 kg for 9 annual harvests.
- Among the different hybrids of 2006, the annual nut yield was found highest in H-365 (21.20 kg/tree) followed by H-355 (18.90 kg/tree) at 7th harvest.
- Among the different hybrids of 2009, the highest annual nut yield was recorded in H-483 (9.20 kg/tree) followed by H-491 (7.90 kg/tree) at 5th harvest.
- Among the different hybrids of 2010, the annual nut yield was highest in H-530 (14.20 kg/tree) followed by H-504 (7.40 kg/tree) at 4th harvest.
- Among the different hybrids of 2011, maximum nut yield was recorded in H-632 (6.80 kg/tree) followed by H-642 (6.50 kg/tree) at 3rd harvest
- Among the different hybrids of 2011, maximum nut yield was highest in H-695 (13.90 kg/tree) followed by H-653 (4.80 kg/tree) at 2nd harvest



- Among the different hybrids of 2012, highest nut yield was recorded in H-716 (3.40 kg/tree) followed by H-717 (3.30 kg/tree) at 2nd harvest

3. Characterization of Germplasm for Cashew apple

Among the 13 genotypes studied, the total soluble solids were ranged from 9.6⁰ Brix to 12.9⁰ Brix. However, the highest TSS was recorded in Priyanka (12.60). Whereas the lowest to tannin was recorded in Priyanka (3.11mg/100g)

CITRUS RESEARCH STATION, TIRUPATI

1. Collection, Characterization, Conservation, Evaluation and Utilization of Citrus Germplasm:

- A total of 117 citrus germplasm accessions comprising of Sweet orange (13), Sour orange (5), Pummelo (7), Grape fruit (3), Rough Lemon (5), Trifoliate orange & Hybrids (4), Mandarins (9), Acid lime (48), Lemons (2) and other species (19) are being maintained for evaluation and characterization.
- Among them 55 germplasm accessions were evaluated for their growth and yield attributes.

a) Evaluation of sweet orange germplasm accessions:

Table 1. Performance of sweet orange accessions at Tirupati							
Sweet orange (<i>Citrus sinensis</i> Osbeck)				Date of planting: 12-09-2005			
S. No.	Name of the accession	Plant height (m)	Scion girth (cm)	Canopy spread (m)		Canopy volume (m ³)	No. of fruits
				EW	NS		
1	Valencia	2.58	45.00	3.33	3.32	14.97	169
2	Excelsor malta	2.05	33.00	2.50	2.55	7.01	25
3	Jaffa	2.25	28.00	2.88	2.90	10.78	-
4	Pinapple	3.50	55.00	4.00	4.05	29.71	193
5	Egypt Sweet orange	2.25	45.00	3.50	3.25	13.40	75
6	Paperind Sweet orange	2.45	36.33	2.83	2.78	10.15	80
7	S/CM Sweet orange	2.75	36.50	2.70	2.88	11.20	50
8	Enter prise 8718	2.25	33.33	3.00	2.83	11.45	70
9	Parson brown	1.88	29.50	2.00	1.88	8.25	40
10	Mediterranean sweet orange	4.03	51.00	4.50	4.37	41.78	97
11	Queen Sweet orange 8763	3.40	50.33	3.67	3.92	25.61	170
12	Madam venus	2.38	39.00	2.83	2.78	10.67	13
13	Cadenarafine	2.35	38.00	2.63	2.68	8.67	10

Data presented on growth parameters (Table 1) of thirteen sweet orange accessions revealed that maximum vegetative growth was observed in Mediterranean sweet orange (Plant height: 4.03m, canopy volume 41.78 m³) followed by Pineapple sweet orange (canopy volume



29.71 m³). Maximum number of fruits were noticed in Pineapple (193 fruits/tree), maximum fruit weight (192g) in S/CM sweet orange and good TSS (12.30°Brix) in Parson brown sweet orange were noticed (Table 2).

Table 2: Physico - chemical parameters of sweet orange accessions at Tirupati

Name of the accession	Fruit weight (g)	Rind thickness (mm)	Juice %	No. of seeds (Avg)	TSS (°Brix)	Acidity (%)	TSS: Acidity ratio
Valencia	123.00	4.03	48.51	7.33	12.72	0.30	42.40
Excelsor malta	120.00	3.42	40.00	11.33	10.83	0.36	30.08
Pinapple	125.00	4.70	51.66	17.67	11.10	0.51	21.76
Egypt	156.00	3.64	54.06	3.00	9.95	0.51	19.51
Paperind	153.75	4.95	44.73	7.00	11.75	0.60	19.58
S/CM	192.00	2.65	55.45	19.33	12.18	0.60	20.30
Enter prise 8718	138.59	4.21	54.23	16.67	11.82	0.43	27.49
Parson brown	133.33	2.87	52.09	15.00	12.30	0.55	22.36
Mediterranean	124.83	5.25	65.24	30.00	10.62	0.90	11.80
Queen 8763	185.09	3.39	53.63	25.33	9.52	0.47	20.26
Madam venus	180.00	4.20	45.44	13.00	12.30	0.30	41.00

Reaction to citrus greening: Mediterranean sweet orange accessions was found resistant to greening. Madam Venus (83.33%), Jaffa (83%) and Excelsormalta (75%) accession were highly susceptible to greening.

b) Evaluation of sour orange, trifoliolate and mandarin germplasm accessions

In sour orange group Emekaipuli sour orange has recorded maximum plant height (4.83m) and Australian sour orange has recorded maximum canopy spread (EW: 4.50m and NS: 4.95m) and canopy volume (24.02 m³). Troyer citrange (canopy volume: 28.99 m³) among trifoliolate hybrids and Kinnow Mandarin (canopy volume 28.11 m³) among mandarins are highly vigorous (Table 4).

Table 4. Performance of sour orange, trifoliolate and mandarins at Tirupati

Sour orange (<i>C. aurantium</i> (L) Osbeck)								Date of planting: 12-09-2005	
S.No	Name of the accession	Plant height (m)	Scion girth (cm)	Canopy spread(m)		Canopy volume (m ³)	No. of Fruits	Greening (PDI)	
				EW	NS				
1	Herale Sour orange	2.70	46.67	3.03	3.25	14.02	120-130	0.00	
2	Australian sour orange	3.78	62.33	4.50	4.95	44.80	55-60	0.00	
3	Sour Dig	2.58	37.00	3.00	3.33	13.74	120-140	25.00	
4	Sour orange-8751	2.33	35.67	2.42	2.67	7.85	30-40	0.00	
5	Chinnato	2.07	17.00	1.92	2.03	5.65	40-50	0.00	
6	Emekaipuli	4.83	69.67	3.75	4.00	39.54	200-220	0.00	
Trifoliolate oranges (<i>Poncirus trifoliata</i>)									
1	Troyer Citrange	3.42	51.67	3.80	4.08	28.99	37	0.00	
2	Carrizo citrange	3.25	36.50	2.50	3.00	12.76	10	0.00	



Mandarin group								
1	Willow leaf	3.25	53.00	3.88	3.88	25.53	100-116	0.00
2	Dancy Tangeron <i>Citrus tangerina</i>	2.40	28.00	2.38	2.50	7.85	20-30	8.33
3	Unshiu Mandarin <i>Citrus unshiu</i>	3.50	46.33	3.33	3.25	22.62	100-130	0.00
4	Calamondin <i>C. madurensis</i>	2.58	26.33	1.75	2.00	5.13	25-30	0.00
5	Kinnow	3.75	49.00	3.50	4.00	28.11	70	37.50
6	Cleopatra	2.00	39.00	2.25	2.50	5.89	--	12.50
7	Mermaloid	2.38	28.50	2.13	2.00	7.54	--	0.00

Reaction to citrus greening:

- Among the sour orange germplasm collections, Herale, Australian sour orange, Sour orange 8751, Emekaipuli and Chinato sour orange were non symptomatic.
- Citrus greening ranged from 0.00 to 37.50 PDI. Willow leaf, Unshiu mandarin, Calamondin and Mermaloid orange did not show any symptoms where as Kinnow recorded highest PDI of 37.50.

c) Evaluation of Pummelo and grape fruit germplasm accessions

- Pummelo 21-111-10 (canopy volume 49.74 m³) among Pummelos and Grape fruit Attari small (canopy volume 14.53 m³) among grape fruits are highly vigorous (Table 5).

Table 5. Performance of pummelo and grape fruit accessions at Tirupati								
Pummelo (<i>Citrus grandis</i>)				Date of planting: 12-09-2005				
S.No	Name of the accession	Plant height (m)	Scion girth (cm)	Canopy spread(m)		Canopy volume (m ³)	No. of Fruits	Greening (PDI)
				EW	NS			
1	Pummelo pink	3.08	52.67	3.75	3.83	23.70	60-70	0.00
2	Pummelo- 21-111-10	4.00	58.00	4.75	5.00	49.74	25-30	0.00
3	Pummelo 31-1-13	2.63	39.50	2.13	2.25	6.58	30	0.00
Grape fruit (<i>Citrus paradise</i>)				Date of planting: 12-09-2005				
1	Grape fruit (Attari small)	3.65	38.67	2.42	2.50	14.53	30	50.00
2	Japanese summer	2.50	33.00	3.13	3.28	13.99	30	0.00
3	Marsh grape fruits	2.92	39.33	2.83	3.25	13.88	45	25.00
4	Grapefruit red	3.30	37.00	2.25	2.13	8.40	20-30	0.00

Reaction to citrus greening:

- Pummelo accessions were non-symptomatic.
- Grape fruit (*Citrus paradise*) accessions recorded the per cent disease index from 0.00 to 50.00. Japanese summer and grape fruit red accessions were non-symptomatic.



d) Evaluation of lemon and other species of citrus germplasm accessions

Rough lemon 8779 (canopy volume 53.42 m³) among rough lemons, CRH-47 (canopy volume 24.54 m³) are highly vigorous (Table 6).

Table 6. Performance of rough lemon and other species of citrus at Tirupati								
Name of the accession	Date of planting	Plant height (m)	Stem girth (cm)	Canopy spread(m)		Canopy volume (m ³)	Fruit no.	
				EW	NS			
Rough lemon (<i>Citrus jambhiri</i> Lush)								
1	Soh Myndong	12-09-2005	3.85	58.50	4.08	4.38	35.75	120
2	Rough lemon 8779	12-09-2005	5.00	58.50	4.18	4.88	53.42	--
3	Rough lemon Rahuri	20-01-2010	4.02	41.33	3.03	3.08	23.71	30
4	Jambheri Assam	20-01-2010	4.25	54.50	4.50	3.88	38.73	150
5	Rough lemon Assam	20-01-2010	2.83	38.33	2.17	1.92	6.10	30
Limes & Lemon (<i>Citrus limon</i>)								
1	PKM-1	20-01-2010	3.38	43.50	3.00	3.80	20.28	--
2	Nakur lemon	12-09-2005	2.38	34.50	2.38	2.38	8.08	40-50
Other species								
1	<i>C. depressa</i>	12-09-2005	2.75	33.00	3.75	3.80	20.52	--
2	Sunkokon	12-09-2005	2.00	38.00	2.25	2.75	6.48	--
3	Pectinofera	12-09-2005	2.75	54.00	3.00	4.25	18.36	57
4	<i>C. hystrix</i>	12-09-2005	2.77	50.67	3.42	4.08	20.28	83
5	<i>C. moi</i>	12-09-2005	1.83	23.00	1.83	2.28	4.09	20
6	Kum quat- <i>Fortunellasps</i>	12-09-2005	2.50	50.00	3.25	3.50	14.89	60
7	Kukudai	12-09-2005	3.00	47.00	3.25	3.40	17.36	--
8	CRH-47	12-09-2005	2.28	40.33	2.62	2.92	9.08	--
9	Kitchili <i>C. madaraspatana</i>	20-01-2010	2.95	34.50	2.00	2.13	8.11	200
10	Gajanimma	20-01-2010						50
	<i>C. pennivesiculata</i>		3.75	57.33	3.70	3.38	24.54	
11	<i>Flying dragon</i>	20-01-2010	3.58	53.67	3.75	4.25	32.35	--
12	<i>Citrus medica</i>	20-01-2010	1.85	16.00	0.50	0.75	0.36	--
13	CRH-47	20-01-2010	3.88	64.00	2.63	2.30	12.25	--
14	Citron	20-01-2010	2.00	39.00	2.25	2.50	5.89	--

Areas explored: During the period under report surveyed Pulivendula area of YSR Kadapa District of Andhra Pradesh one sweet orange accessions from the farmers field of Sri. Aravinda Reddy Simhadripuram, Pulivendula, YSR Kadapa District of Andhra Pradesh.

Traits selected: Acid lime: High productivity, less seed and canker tolerance
Sweet orange: High productivity and Phytophthora tolerance.

2. Evaluation of acid lime cultivars under different agro- climatic condition: Among Acid lime cultivars planted during 2011, all the plant growth parameters were non- significant. Whereas, minimum growth was noticed in Pramalini cultivar (Table 7).

Table 7: Performance of Acid lime cultivars for growth and yield



Name of the clone	Plant height (m)	Stem Girth (cm)	Canopy spread(m)		Canopy volume (m ³)	Fruits/plant	Fruit weight(g)	Yield (kg/Plant)	Yield (t/ha)
			E-W	N-S					
Pramalini	3.00	39.25	3.37	3.43	19.46	304.38	38.76	11.80	3.27
Vikram	3.32	44.25	3.58	4.06	25.76	217.75	35.63	7.76	2.15
Jai- Devi	3.38	45.00	3.94	4.09	28.90	264.00	47.72	12.57	3.48
Sai- Sharbathi	3.32	42.38	3.89	3.89	26.88	259.25	43.89	11.37	3.15
Balaji	3.42	42.13	4.10	3.93	28.91	308.00	45.38	13.99	3.88
CD (0.05)	NS	NS	NS	NS	NS	18.25	NS	NS	NS
SEm±	0.17	2.73	0.21	0.17	3.09	5.86	5.09	1.31	0.36
CV%	10.16	12.84	11.31	8.80	23.78	4.33	24.09	22.80	22.78

Significantly highest number of fruits (308 fruits/plant) were recorded in Balaji followed by Pramalini cultivars (304 fruits/plant). Lowest yield was recorded in Vikram (218 fruits/plant & 2.15 t/ha). Fruit juice content was also found highest in balaji acid lime clone (48%).

Table 8 : Performance of acid lime cultivars for fruit quality parameters (2018)			
Name of the clone	Juice (%)	TSS (^o Brix)	Acidity (%)
Pramalini	46.78	8.88	6.65
Vikram	43.86	8.44	6.97
Jai- Devi	46.25	8.80	6.83
Sai- Sharbathi	44.70	7.58	6.80
Balaji	48.00	7.93	6.70
CD (0.05)	2.25	0.42	NS
SEm±	0.72	0.13	0.24
CV%	3.15	3.20	7.14

Low infestation of mite infestation was noticed on Jaidevi where as low canker incidence was noticed on fruits in Balaji cultivar (Table 9).

Table 9: Pest and disease incidence in Acid lime cultivars at Tirupati (2018-19)		
Name of the clone	Mites infestation (%)	Canker incidence(PDI)
Pramalini	10.87	22.67
Vikram	9.29	18.88
Jai- Devi	3.45	26.67
Sai- Sharbathi	4.20	34.53
Balaji	4.08	15.33

3. Clonal selection of sweet orange: Among six clonal selections of sweet orange identified at Tirupati, TS₆ clone (Ananthapur) has recorded significantly maximum scion girth (40cm) and canopy volume (13.52m³) after eleven years of planting. Significantly maximum number of fruits and fruit yield were recorded in Sathgudi (282 fruits/plant, 39.24 kg/plant) followed by TS₅ clone (262 fruits and 37.22 kg/plant) and TS₄ (237 fruits and 34.14 kg/plant) clones. However, significantly highest fruit weight was noticed in TS₄ clone (144.33g) and was at par with TS₂ clone (144g).



Table 10. Performance of Sweet Orange Clones at Tirupati (2018-19)									
Clones	Plant height (m)	Scion Girth (cm)	Canopy spread(m)		Canopy Volume (m ³)	Fruits / tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)
			EW	NS					
TS ₁	1.82	29.00	2.39	2.61	5.98	140.00	141.33	19.78	5.48
TS ₂	1.80	33.00	2.30	2.38	5.31	116.67	144.00	16.81	4.66
TS ₃	1.83	29.33	2.30	2.72	6.01	156.67	142.67	22.33	6.19
TS ₄	2.48	33.50	2.76	2.71	9.62	236.67	144.33	34.14	9.46
TS ₅	2.13	34.50	2.71	3.10	9.82	261.67	142.33	37.22	10.31
TS ₆	2.42	40.00	3.08	3.38	13.52	212.00	140.00	29.72	8.23
CHEC K	2.25	39.83	2.74	2.69	8.51	281.67	139.33	39.24	10.87
CD@5 %	NS	7.93	NS	NS	4.63	4.98	1.77	0.88	0.24
SEm±	0.17	2.55	0.19	0.21	1.49	1.60	0.57	0.28	0.08
CV %	14.18	12.91	12.29	12.66	30.68	1.38	0.69	1.71	1.72

TS₁: Venkata Reddy Gari Palle, Tadepatri Mandal)Ananthapur; TS₂: Ammavaripeta, B.K. Samudram (Mandal) Ananthapur; TS₃:MadugulaTipparthi (Mandal) Nalgonda, TS₄: PeddavuruVill&Mandal, Nalgonda; TS₅:Veligandla (Vill& Mandal) Prakasam; TS₆:Cheruvukomuu- palem, P.C. Palle (Mandal)Ananthapur; TS₇:Sathgudi (Check)

Maximum juice percentage (48.31 %) and TSS (13^oBrix) were recorded in Sathgudiclone(Control). However, minimum acidity was noticed in TS₆clone (0.47%) and good TSS and acidity ratio was recorded in TS₄ (27.85) and TS₆clones (27.76).

Table 11. Evaluation of Sweet Orange Clones for fruit quality at Tirupati (2018)				
Clones	Juice (%)	TSS (^o Brix)	Acidity (%)	TSS Acidity
TS ₁	42.26	12.27	0.53	23.46
TS ₂	43.97	12.07	0.50	24.99
TS ₃	44.01	12.17	0.60	20.87
TS ₄	47.46	13.17	0.50	27.85
TS ₅	44.90	12.03	0.50	23.46
TS ₆	42.37	12.57	0.47	27.76
TS ₇ (CHECK)	48.31	13.00	0.50	25.86
CD@5%	1.41	0.06	0.05	0.35
SEm±	0.45	0.02	0.02	0.11
CV %	1.75	0.24	5.75	0.77

4. Clonal Selection of Acid lime: Among acid lime clonal selections planted during January, 2013, vigorous plant growth was noticed in PKM-1 and Nalgonda acid lime clones (Table 11). Significantly maximum plant height (3.17m), stem girth (44.33 cm) and canopy volume (21.92



m3) were recorded in PKM-1 acid lime clone. Canker disease incidence was low in Selection-3, Selection -16 and Nalgonda clones.

Fruiting was noticed in thirty four clones. During first year of bearing, maximum fruit yield was noticed in Selection-16 (18.9 kg/plant) followed by Petlur Selection-1(18.2 kg/plant) acid lime clones. However, maximum fruit weight was recorded in Selection-33(58g). Thin rind was noticed in KL-12 clone and maximum juice (65%) and TSS (13.6⁰ Brix) were recorded in Selection-30. Less number of seeds per fruit (3no) and maximum acidity (9.6%) were recorded in RHRL 49 clone. Flowering was noticed in four clonal selections, Selection-3, PKM-1, RHRL-122 and TAL 94-17 during August, 2018.

S.no	Acid lime clones	Plant Height(m)	Stem girth(cm)	Canopy spread (m)		Canopy volume (m ³)	Canker (PDI)
				EW	NS		
1.	TAL94/13	2.03	30.67	2.73	2.57	7.68	30.20
2.	TAL 94/14	2.05	28.00	2.07	2.77	6.93	22.00
3.	TAL 94/10	2.22	33.00	2.17	2.27	6.16	29.40
4.	RHRL 49	2.63	37.67	3.42	3.40	16.09	34.53
5.	TAL94/17	2.28	31.00	2.75	2.90	9.59	33.40
6.	TAL95/3	2.18	37.67	3.15	2.63	10.36	30.67
7.	TAL 94/4	1.93	28.67	2.40	2.42	7.02	29.20
8.	TAL 94/5	2.17	27.67	2.30	2.38	6.49	31.20
9.	RHRL 124	2.28	34.33	2.75	3.35	10.96	15.87
10.	TAL 95/1	2.07	30.67	2.72	2.73	8.51	31.60
11.	Balaji	2.53	29.33	2.47	2.33	7.70	15.33
12.	TAL 94/7	2.55	40.33	3.33	3.17	14.49	27.07
13.	TAL 94/8	2.33	28.33	2.62	3.03	9.65	26.27
14.	RHRL 159	2.50	32.67	2.90	2.98	11.47	33.33
15.	TAL 95/2	2.83	38.33	3.83	3.35	19.32	33.73
16.	TAL 94/9	2.00	27.67	2.30	2.57	6.31	31.33
17.	Slection - 18	1.88	30.00	2.27	2.02	5.16	28.40
18.	Slection - 30	2.53	40.33	3.27	3.27	14.14	12.27
19.	RHRL - 122	2.40	35.00	2.75	2.50	8.94	12.80
20.	K.L – 12	2.23	32.00	2.75	2.68	8.74	13.20
21.	Punjab lime	2.48	32.00	2.73	2.95	10.47	16.53
22.	Sel– 8	2.45	31.00	2.35	2.78	9.96	16.00
23.	TAL - 94/11	2.77	37.67	3.22	3.18	14.89	16.53
24.	SEL -21	2.32	34.67	3.00	2.80	10.31	20.00
25.	SEL -33	2.47	33.33	2.77	2.43	8.71	19.33
26.	SEL – 32	2.37	31.00	2.65	2.67	8.78	14.80
27.	SEL -27	2.75	38.33	3.08	3.20	14.18	18.00
28.	SEL – 7	2.70	33.67	3.33	3.05	14.08	16.67
29.	SEL – 25	2.77	36.00	3.20	3.02	14.48	16.40
30.	B.K.S – 4	2.95	41.33	3.47	2.97	15.87	13.07
31.	SEL – 17	2.42	30.00	2.47	2.15	8.11	11.33
32.	SEL-20	2.60	37.33	3.03	2.78	11.75	13.07
33.	SEL – 16	2.60	40.00	3.12	2.97	12.70	10.67



34.	SEL – 3	2.90	40.33	3.43	3.07	16.61	10.60
35.	Nalgonda	2.98	37.33	3.13	3.87	19.09	10.80
36.	C.R.S – 1	2.85	33.33	2.67	2.75	12.10	12.40
37.	P.K.M – 1	3.17	44.33	3.53	3.43	21.92	26.67
38.	Local	2.55	30.00	2.77	2.32	8.98	30.20
	Max	3.17	44.33	3.83	3.87	21.92	34.53
	Min	1.88	27.67	2.07	2.02	5.16	10.60
	C.D.	0.57	8.66	0.86	0.86	7.82	
	SE(m)	0.20	3.07	0.31	0.31	2.77	
	C.V.	14.29	15.61	18.43	18.66	42.55	

5.Evaluation of promising clones of sweet orange (MLT-1):Biometrical observations (Table 14) on eight year old promising clones of sweet orange revealed that all the plant growth parameters were non significant. Maximum canopy volume (10.97 m³) was noticed in M3 clone. Significantly highest fruit yield was recorded in M4 clone (431 fruits/plant, 59.23 kg/plant), followed by Sathgudi clone (37.64 kg/plant) and Phule Mosambi (37.06 kg/plant) clones. However, significantly highest fruit weight was noticed in Shamouti clone (187.50g).

Table 14. Performance of Sweet Orange promising clones at Tirupati

Clones	Plant height (m)	Scion Girth (cm)	Canopy spread(m)		Canopy Volume (m ³)	Fruit s/ tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)
			EW	NS					
Phule Mosambi	2.22	37.33	2.69	2.69	9.34	268.67	137.86	37.06	10.26
M ₃	2.26	34.44	2.80	2.84	10.97	160.67	139.97	22.48	6.23
M ₈	2.01	31.33	2.49	2.50	7.23	105.00	114.36	12.00	3.32
M ₄	2.26	33.67	2.46	2.49	7.58	431.33	137.27	59.23	16.41
KodurSathgudi	2.00	32.25	2.53	2.46	8.04	222.33	123.77	27.65	7.66
Shamouti Orange	1.93	30.58	2.58	2.51	7.44	31.67	187.50	5.86	1.62
Sathgudi (Check)	2.09	34.17	2.70	2.49	7.78	255.00	147.41	37.64	10.43
CD@5%	NS	NS	NS	NS	NS	24.87	13.04	6.17	1.71
SE(m)±	0.19	3.91	0.32	0.26	2.16	7.98	4.19	1.98	0.55
CV %	15.85	20.26	21.00	17.54	44.76	6.56	5.14	11.89	11.86



Significantly highest juice content (46.6%) was recorded in Sathgudi clone, whereas, maximum TSS was recorded in M4 clone (12.72°Brix). However, minimum acidity and good TSS and acid blend were recorded in M3 clone (0.406 % and 26.27).

Clones	Juice (%)	TSS (°Brix)	Acidity (%)	TSS Acidity Ratio
Phule Mosambi	43.60	11.50	0.49	23.51
M ₃	42.35	11.98	0.46	26.27
M ₄	37.47	12.72	0.51	25.06
M ₈	41.44	11.37	0.60	18.94
KodurSathgudi	42.39	9.95	0.52	19.32
Shamouti Orange	44.50	10.27	0.48	21.58
Sathgudi (Check)	46.60	10.94	0.48	22.79
CD@5%	0.30	1.16	0.06	2.44
SEm±	0.10	0.37	0.02	0.78
CV %	0.39	5.73	6.46	6.03

Incidence of diseases: Low incidence of citrus greening was noticed in Phule Mosambi and highest dry root rot incidence was noticed in Shamouti clone (75%) at Tirupati.

6. Evaluation of promising clones of acid lime (MLT-I): Among eight promising clones of acid lime planted during 2011, all the plant growth parameters were non-significant (Table 17). Maximum fruit yield (736 fruits/plant, 31.34 kg/plant and 8.68 t/ha) was recorded in TAL-94/14 followed by NRCC Niboo-3 clone (480 fruits/plant and 20.05 kg/plant and 5.55 t/ha). However maximum fruit weight (47.17g) was recorded in Balaji acid lime clone.

Name of the clone	Plant height (m)	Stem Girth (cm)	Canopy spread(m)		Canopy Volume (m ³)	Fruits/plant	Fruit weight (g)	Yield (kg/Plant)	Yield (t/ha)
			E-W	N-S					
TAL 94/14	2.59	35.33	2.79	2.88	13.07	735.83	42.59	31.34	8.68
TAL 94/13	3.07	45.33	3.65	3.45	20.21	266.17	43.83	11.68	3.23
Phule Sharbathi	3.17	43.17	3.70	3.88	24.64	211.83	40.94	8.68	2.41
Akola lime	3.08	39.33	3.37	3.32	18.14	219.83	44.65	9.81	2.72
NRCC Niboo-2	3.17	44.50	3.69	3.63	22.35	238.33	44.44	10.60	2.94
NRCC Niboo-3	3.79	45.83	3.82	4.20	33.28	479.83	41.79	20.05	5.55
NRCC Niboo-4	3.00	36.67	2.83	3.07	14.35	259.00	46.29	11.99	3.32
KL-12	2.95	42.00	3.71	3.68	21.68	310.67	45.03	13.99	3.87
Balaji (Check)	3.52	41.83	4.06	3.94	29.68	344.00	47.17	16.23	4.50
CD @ 5%	NS	NS	NS	NS	NS	15.74	3.43	1.57	0.44
SE(m)±	0.25	2.52	0.31	0.30	4.12	5.20	1.14	0.52	0.14
CV %	13.49	10.49	15.21	14.42	32.52	2.65	4.46	6.03	6.02



Fruit juice and TSS parameters were found non significant. But, maximum juice percentage was noticed in Balaji acid lime clone (48.67%) and lowest in TA 94/14 clone (32.37%). Significantly highest acidity percentage was recorded in KL-12 clone (6.34).

Low canker incidence on fruits was noticed in KL-12, Balaji and Phule Sharbathi acid lime clones. Snow scale incidence was noticed on all NRCC clones.

1. **Evaluation of promising clones of Pummelo (MLT-I):** Among nine Pummelo clones NRCC Pummelo -5 clone has recorded significantly highest plant height (2.83 m) scion girth (47.33 cm) and canopy volume (13.84 m³).

First fruiting was noticed in PTF-1, NRCC Pummelo-2,3,4 and 5 clones. Large fruits were noticed in NRCC Pummelo -3 clone. Less number of seeds were recorded in NRCC Pummelo -5 clone.

Clones	Fruit weight(g)	No. Of segments	No. Of seeds	Rind Thickness (mm)	TSS (°Brix)
PTF- 1	1175	15	20	12.94	8.80
NRCC Pummelo -1	469	13	24	7.93	8.00
NRCC Pummelo -2	967	15	63	12.89	8.30
NRCC Pummelo -3	1486	18	26	13.89	7.10
NRCC Pummelo -5	983	14	14	14.42	7.90
Pummelo pink	851	16	68	11.04	8.80

8. **Evaluation of promising clones of acid lime (MLT-II):** Procured the acid lime planting material from Akola, Sriganaganagar, Nagpur and New Delhi centers. Field Layout was completed and proposed for planting during July, 2018.

9. **Evaluation of promising clones of grapefruit (MLT-I):** Proposed for planting during August, 2018. Collected planting material of Flame Grape fruit and NRCC Grapefruit-6 from Nagpur centre.

10. **Nutrient Management under high density Planting in Sweet Orange:** Minimum plant growth parameters were recorded in S2L1 treatment with spacing 6x5m and 75% N (inorganic source) along with 25% N (organic source: FYM) and 2.2 kg SSP and 0.75 kg MOP per plant year.

Individual effect of spacing, nutrition and their interaction effects were found significant for fruit yield of eleven years old sweet orange plants. Among individual effects of spacing and nutrition significantly highest fruit yield (38.90 kg/plant and 16.18 t/ha) was noticed when plants were spaced at 6x4m (416 plants/ha) followed by application of 100% RDF (L3) (286 fruits/plant, 40.20 kg/plant and 13.68 t/ha). Highest fruit yield (16.74 t/ha) was noticed in S3L1 when plants were spaced at 6x4m (416 plants/ha) and supplied with 75% N (urea) along with 25% N (organic source: FYM). Highest benefit cost ratio (1.7) was also noticed in the same treatment



due to high density planting (416 plants/ ha) and low input cost of chemical fertilizer and also FYM as organic source. However, highest fruit weight (157.87g) was recorded with interaction effect of S3 L2 and maximum fruit number (293 fruits/tree) and fruit yield per tree (42.11 kg/tree) were recorded in S1L3.

Table 22: Effect of different spacing and nutrient levels on growth and yield attributes of Sweet orange at Tirupati

Treatments	Plant height (m)	Scion Girth (cm)	Canopy spread(m)		Canopy Volume (m ³)	Fruits /tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)	BC Ratio
			E-W	N-S						
S1	2.58	43.83	3.40	3.45	15.83	258.67	142.42	36.84	10.21	
S2	2.28	37.09	2.85	2.94	10.28	269.22	143.44	38.38	12.78	
S3	2.37	40.16	3.17	3.23	13.12	263.56	148.45	38.90	16.18	
CD@5%	0.18	2.61	0.27	0.23	2.09	8.12	NS	1.38	0.49	
SE(m)±	0.06	0.86	0.09	8.00	0.69	2.68	1.74	0.46	0.16	
L1	2.45	40.70	3.08	3.17	12.90	249.11	146.51	36.36	12.60	
L2	2.35	39.59	3.17	3.19	12.83	256.78	147.00	37.55	12.88	
L3	2.43	40.79	3.18	3.26	13.51	285.56	140.79	40.20	13.68	
CD@5%	NS	NS	NS	NS	NS	8.12	5.26	1.38	0.49	
SE(m)±	0.06	0.86	0.09	0.08	0.69	2.68	1.74	0.46	0.16	
T ₁ (S ₁ L ₁)	2.70	44.83	3.36	3.36	15.83	231.67	143.52	33.20	9.20	1.1
T ₂ (S ₁ L ₂)	2.52	42.25	3.33	3.47	15.39	251.33	140.05	35.20	9.75	1.0
T ₃ (S ₁ L ₃)	2.51	44.42	3.51	3.51	16.27	293.00	143.68	42.11	11.67	1.2
T ₄ (S ₂ L ₁)	2.25	35.83	2.67	2.78	9.11	238.67	150.72	35.65	11.87	1.1
T ₅ (S ₂ L ₂)	2.28	38.08	2.98	3.10	11.13	281.00	143.08	40.18	13.38	1.3
T ₆ (S ₂ L ₃)	2.31	37.36	2.91	2.95	10.61	288.00	136.51	39.30	13.09	1.1
T ₇ (S ₃ L ₁)	2.38	41.44	3.20	3.37	13.76	277.00	145.29	40.24	16.74	1.7
T ₈ (S ₃ L ₂)	2.26	38.44	3.19	2.99	11.96	238.00	157.87	37.27	15.50	1.3
T ₉ (S ₃ L ₃)	2.46	40.58	3.12	3.34	13.65	275.67	142.18	39.19	16.30	1.4
CD @ 5%	NS	4.53	0.47	0.40	3.64	14.06	9.10	2.40	0.84	
SE(m)±	0.10	1.50	0.16	0.13	1.20	4.65	3.01	0.79	0.28	
C.V.	7.25	6.43	8.59	7.11	15.92	3.05	3.60	3.61	3.69	

S₁- (6x6 m= 277 plants/ ha); S₂- (6x5 m= 333 plants/ha); S₃- (6x4 m= 416 plants/ha)
L₁-75%N (Inorganic) + 25%N (Organic -FYM) +100% P&K inorganic; L₂-50% N (Inorganic)+ 50% N (Organic- vermicompost) +100% P&K inorganic; L₃-100% In-organic only (1500g N: 350g P₂ O₅: 400 g K₂ O/ plant/year)
Cost of Fruits: Rs. 25,000/ tonn

However, fruit quality parameters were not significantly influenced by different spacing levels and nutrient sources.

Leaf nutrients were analysed and data was presented in tables 20. Maximum concentration of phosphorous (0.19%), potassium (1.70%), and iron (173.7ppm) were noticed in L₁-75%N (Inorganic) + 25%N (Organic -FYM) +100% P&K inorganic. Leaf calcium and magnesium levels more than optimum for all the treatments. High concentrations of zinc (29.6ppm), copper (22.66ppm) and molybdenum (1.23ppm) were noticed in L₂-50% N (Inorganic)+ 50% N (Organic- vermicompost) +100% P&K inorganic. Maximum concentration



of nitrogen(3.18%), manganese(91.53ppm) and boron(24.7ppm) nutrients were notice in 100% in-organic (1500g N: 350g P₂ O₅: 400 g K₂ O/ plant/year) source.

11.Nutrient Management under high density Planting in Acid lime:Individual effect of spacing and interaction effect of different spacing and nutrient levels significantly influenced fruit yield during first year of fruiting. Significantly highest fruit yield (6.27 t/ha) was noticed in S3 when plants were spaced at 6x4m (416 plants/ha), but number of fruits (404 fruits) and fruit yield per tree (20.10 kg/tree)were found maximum at regular spacing (6x6m). Among interaction effects, significantly highest fruit yield (8.10 t/ha) was noticed in S3L2 when plants were spaced at 6x4m (416 plants/ha) and supplied 50% RDF (750g N: 300g P₂ O₅: 300 g K₂ O/ plant/year). However, maximum number of fruits and fruit yield were recorded when plants were spaced at 6x6m (277 plants/ha) and supplied 100% RDF (Check).

Table 25: Effect of different spacing and nutrient levels on plant growth of acid lime cv.Balaji at Tirupati

Treatments	Plant height (m)	Stem Girth (cm)	Canopy spread(m)		Canopy Volume (m ³)	Fruits /tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)
			E-W	N-S					
S1	3.09	40.33	3.63	3.92	24.94	403.79	49.73	20.10	5.57
S2	3.06	35.74	3.50	3.67	21.66	278.94	51.00	14.24	4.74
S3	3.33	43.55	4.14	4.18	31.21	303.08	49.80	15.07	6.27
CD@5%	NS	3.79	0.41	0.40	5.93	10.37	NS	1.51	0.47
SE(m)±	0.09	1.25	0.14	0.13	1.96	3.43	1.39	0.50	0.16
L1	3.12	40.63	3.67	3.83	24.67	329.50	50.43	16.57	5.52
L2	3.30	41.50	3.84	4.09	28.71	330.43	49.10	16.21	5.58
L3	3.06	37.50	3.76	3.85	24.44	325.87	51.01	16.63	5.48
CD@5%	NS	NS	NS	NS	NS	NS	NS	NS	NS
SE(m)±	0.09	1.25	0.14	0.13	1.96	3.43	1.39	0.50	0.16
T ₁ (S ₁ L ₁)	2.97	41.89	3.58	3.78	23.99	391.33	50.05	19.62	5.43
T ₂ (S ₁ L ₂)	3.44	43.11	3.84	4.27	30.13	392.64	48.62	19.06	5.28
T ₃ (S ₁ L ₃)	2.88	36.00	3.47	3.71	20.71	427.39	50.53	21.63	5.99
T ₄ (S ₂ L ₁)	3.06	35.45	3.34	3.58	19.81	344.00	48.93	16.85	5.61
T ₅ (S ₂ L ₂)	2.99	34.61	3.21	3.44	18.55	206.53	48.93	10.11	3.37
T ₆ (S ₂ L ₃)	3.13	37.17	3.96	3.98	26.61	286.28	55.14	15.75	5.25
T ₇ (S ₃ L ₁)	3.34	44.55	4.08	4.11	30.20	253.17	52.31	13.25	5.51
T ₈ (S ₃ L ₂)	3.48	46.78	4.48	4.55	37.43	392.14	49.75	19.47	8.10
T ₉ (S ₃ L ₃)	3.16	39.33	3.87	3.87	26.00	263.94	47.35	12.50	5.20
CD @ 5%	NS	6.56	0.71	NS	10.28	17.97	NS	2.61	0.82
SE(m)±	0.17	2.17	0.24	0.23	3.40	5.94	2.41	0.86	0.27
C.V.	9.10	9.43	10.88	10.09	22.69	3.13	8.31	9.09	8.48

S₁- (6x6 m= 277 plants/ ha); S₂- (6x5 m= 333 plants/ha); S₃- (6x4 m= 416 plants/ha)
L₁-75% RDF (1125g N: 450.5g P₂ O₅: 450 g K₂ O/ plant/year)
L₂- 50% RDF (750g N: 300g P₂ O₅: 300 g K₂ O/ plant/year)
L₃- 100% RDF (Check) (1500g N: 600g P₂ O₅: 600 g K₂ O/ plant/year)

However, fruit quality parameters were not significantly influenced by different spacing levels and nutrient sources.



Leaf nutrients were analysed and data was presented in tables 3. High leaf nitrogen (3.6%) was noticed when plants were supplied with 75% RDF (L₁). Maximum concentration of phosphorous(0.52%), potassium (2%), zinc (31.32ppm), boron (42.2ppm) and molybdenum(2.87ppm) were noticed in when plants were supplied with - 50% RDF (L₂). Maximum concentration of manganese (63.86ppm), iron (181.90ppm) and copper(19.58ppm) nutrients were noticed in 100% RDF (Check).

Effect of root stocks on Fruit yield and quality of Sathgudi sweet orange at Tirupati

:First fruiting was noticed on Alemow and CRH-12 root stocks. Maximum fruit yield per tree was recorded on Rangpur lime root stock (143 fruits and 19.13kg/tree) followed by NRCC-2(106 fruits/plant and 16.30kg/tree).The heaviest fruits were produced on NRCC-2 root stock (153.63g) followed by NRCC-6 (Table 29). However, the least fruit weight was recorded on CRH-12 rootstock(95.33g). Maximum fruit juice was recorded on NRCC-6 (48.51 %). Maximum TSS (13.43 °Brix) and minimum acidity (0.44%) with good TSS and acid blend (32.39) were recorded on CRH-12 root stock.

Table 29: Effect of different root stocks on fruit yield and quality of Sathgudi sweet orange at Tirupati

Rootstocks	Fruits/ Tree	Fruit weight [g]	Yield [kg tree ⁻¹]	Yield [t/ha]	Juice (%)	TSS [°Brix]	Acidity [%]	TSS: Acidity
NRCC-2	106.00	153.63	16.30	4.52	42.54	10.43	0.50	21.82
NRCC-4	46.67	137.94	6.42	1.78	45.51	12.43	0.44	29.97
NRCC-5	40.67	138.78	5.65	1.57	46.44	13.13	0.44	31.66
NRCC-6	80.33	139.46	11.20	3.10	48.51	12.43	0.50	26.02
CRH- 12*	2.33	95.33	0.22	0.06	41.39	13.43	0.44	32.39
Alemow*	4.67	128.33	0.60	0.17	45.63	10.83	0.44	26.10
Rangpur lime	142.67	133.86	19.13	5.30	47.50	11.73	0.50	24.55
Rough lemon	104.33	130.27	13.53	3.75	40.80	11.83	0.50	24.76
CD (0.05)	11.61	15.33	2.31	0.64	0.44	0.01	NS	2.56
SE(m) ±	3.79	5.01	0.75	0.21	0.14	0.00	0.00	0.84
C.V.	9.96	6.56	14.30	14.25	0.55	0.04	0.03	5.34

***First fruiting noticed**

Disease Incidence: Sathgudi sweet orange plants on different rootstocks were observed for citrus greening disease. Low incidence was found on NRCC-5 during 2018.



Effect of root stocks on leaf nutrients of Sathgudi sweet orange at Tirupati : Leaf N varied from 2.77% to 3.66 % with CRH-12 having highest leaf N percentage followed by NRCC-5 & Alemow . Leaf P varied from 0.30 to 0.42% with CRH-12 registering highest leaf P followed by NRCC 6 and Rangpur lime(0.37%). Likewise leaf K varied from 1.74 to 2.58%. Maximum leaf K was registered in Alemow (2.58%), followed by CRFH-12 (2.49) with lowest being NRCC-2.

Highest calcium and boron were registered in Rangpur lime root stock. Maximum leaf magnesium, zinc and molybdenum were registered in NRCC-6 root stock . Maximum iron was noticed in NRCC-4 root stock and manganese in NRCC-5 root stock.

Root stocks	N (%)	P (%)	K (%)	Ca (%)	Mg (%)	Zn (ppm)	Fe (ppm)	Cu (ppm)	Mn (ppm)	B (ppm)	Mo (ppm)
NRCC-2	2.93	0.30	1.32	4.23	0.68	16.71	55.97	7.52	25.93	31.50	1.61
NRCC-4	3.16	0.36	2.04	4.12	0.66	12.20	94.94	15.99	27.30	34.86	1.68
NRCC-5	3.37	0.34	1.94	4.52	0.77	37.17	49.47	14.23	98.37	36.74	0.83
NRCC-6	2.90	0.37	2.29	4.36	0.83	42.10	54.44	15.63	55.70	31.00	2.11
CRH-12	3.67	0.42	2.49	3.53	0.67	19.60	70.04	9.94	41.85	36.61	1.37
Alemow	3.33	0.38	2.58	4.31	0.69	13.95	41.99	11.19	72.02	30.79	1.76
Rangpur lime	2.87	0.37	1.98	4.71	0.79	16.76	46.67	14.32	59.15	37.70	1.41
Rough lemon	2.77	0.33	1.74	4.60	0.76	26.15	53.44	17.33	81.33	35.62	1.22
Range	3.67	0.42	2.58	4.71	0.83	42.10	94.94	17.33	98.37	37.70	2.11
	2.77	0.30	1.32	3.53	0.66	12.20	41.99	7.52	25.93	30.79	0.83

13. Studying on Residual and Cumulative effects of Nutrients in Sweet orange: Individual nutrient levels (A part) and nutrient doses (B part) and their interaction on nine years old Sathgudi sweet orange plants were non significant for growth parameters (Table: 31). However, fruit yield and quality parameters were significantly influenced by nutrient levels (A part) and nutrient doses (B part).Among individual effects, significantly maximum fruit yield was recorded in B2 (17.08 kg/plant and 4.73 t/ha) followed by A3 (15.86 kg/plant and 4.39 t/ha). Maximum juice content and TSS were recorded in A2 (47.84% juice and 11.19° Brix) and B2 for TSS(11.20° Brix).

Interaction effect of age wise nutrient levels and nutrient doses were high and significantly influenced fruit yield and quality parameters. Maximum number of fruits (163 fruits/tree) and fruit yield (22.07 kg/tree and 6.11 t/ha) were recorded with A3 B2 (1/6 of RDF for 1 to 10 years+ 80% RDF after 10 years/8 years/6 years) followed by A1B1 (133 fruits/tree 17.08kg/tree and 4.73 t/ha). Maximum TSS with good TSS and acid blend was recorded in A2B1 (11.88° Brix and 22.29) (Table 32).

Treatments	Plant height (m)	Scion girth (cm)	Canopy spread (m)		Canopy volume (m ³)	Fruits /tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)
			EW	NS					



A1	1.93	27.58	2.37	2.47	6.25	109.78	124.52	13.69	3.79
A2	1.85	26.61	2.31	2.36	5.63	122.47	125.73	15.38	4.26
A3	1.91	26.91	2.40	2.35	5.86	121.67	129.46	15.86	4.39
CD@5%	NS	NS	NS	NS	NS	5.47	NS	1.59	0.44
B1	1.87	25.83	2.32	2.31	5.71	121.53	125.60	15.28	4.24
B2	1.90	27.39	2.35	2.45	6.09	132.56	128.46	17.08	4.73
B3	1.92	27.88	2.41	2.40	5.94	99.83	125.64	12.56	3.48
CD@5%	NS	NS	NS	NS	NS	5.47	NS	1.59	0.44
A1B1	1.98	26.75	2.42	2.50	6.77	133.00	128.44	17.08	4.73
A1B2	2.00	28.17	2.41	2.53	6.53	101.33	127.38	12.80	3.55
A1B3	1.81	27.83	2.28	2.37	5.44	95.00	117.74	11.17	3.10
A2B1	1.85	26.00	2.23	2.29	5.58	126.58	123.94	15.73	4.36
A2B2	1.76	26.33	2.19	2.31	4.92	133.00	122.86	16.36	4.53
A2B3	1.93	27.50	2.50	2.46	6.39	107.83	130.38	14.06	3.89
A3B1	1.78	24.75	2.30	2.14	4.79	105.00	124.42	13.04	3.61
A3B2	1.94	27.67	2.46	2.52	6.80	163.33	135.15	22.07	6.11
A3B3	2.01	28.31	2.44	2.38	6.00	96.67	128.80	12.46	3.45
CD@5%	NS	NS	NS	NS	NS	9.48	NS	2.76	0.76
CV%	9.09	8.71	8.73	9.80	27.21	4.60	10.09	10.53	10.54
A ₁ : 1/10 of RDF for 10 years; B ₁ : 100% RDF after 10 years A ₂ : 1/8 of RDF for 8 years B ₂ : 80% RDF after 8 years A ₃ : 1/6 of RDF for 6 years B ₃ : 60% RDF after 6 years RDF: 1500:350:400g N:P ₂ O ₅ : K ₂ O/plant /year									

Maximum concentration of nitrogen (3.67%) and iron(100.10ppm) was noticed in A2B2, phosphorous (0.31%) in A3B3, potassium(2.05%) and zinc (22.03 ppm) were noticed in A3B1. Leaf calcium(4.33%) magnesium (0.65%) and boron (32ppm) levels more high in A1B3. High concentrations of copper (22.50ppm) and molybdenum (1.99 ppm) in A3B2 and manganese(93.87ppm) were noticed in A1B1.

14. Studying on Residual and Cumulative effects of Nutrients Acid Lime: Individual nutrient levels (A part), nutrient doses (B part) and their interaction on eight years old Balaji acid lime seedlings were non significant for growth parameters (Table 34).However, fruit yield and quality parameters were significantly influenced by nutrient levels (A part). Among individual effects, significantly maximum fruit yield was recorded in A3 (1647 fruits /plant, 75.01 kg/plant and 20.80 t/ha) followed by A2 (1634 fruits /plant, 71.39 kg/plant and 19.78 t/ha). Maximum juice percent was recorded in A2(48.64% juice) followed by B2 (48.60% juice).

Interaction effect of age wise nutrient levels and nutrient doses were high and significantly influenced fruit number and juice content .Significantly highest number of fruits(1781 fruits), were recorded in A3B3 (1/6 of RDF for 1 to 10 years+ 60% RDF after 10 years/8 years/6 years) and maximum juice content (49.78%) was noticed in A1B1.

Treatments	Plant height(m)	Stem girth (cm)	Canopy spread (m)		Canopy volume (m ³)	Fruits /tree	Fruit weight (g)	Fruit yield (kg/tree)	Fruit yield (t/ha)
			EW	NS					
A1	3.40	42.53	4.34	4.31	33.48	1349.00	43.78	58.58	16.23
A2	3.61	43.83	4.49	4.49	38.93	1633.61	43.72	71.39	19.78



Treat ment	Plant height (m)	Scion girth (cm)	Canopy volume (m ³)	Fruits /plant	Fruit weight (g)	Yield (kg/tree)	Yield (t/ha)	BC ratio
SE(m)±	0.12	1.59	1.33	10.31	3.10	1.30	0.36	
CV%	9.48	8.39	16.25	7.21	4.97	6.52	6.52	
T1 = 0:0:0, 40:50:0,40:50:0,20:0:50,0:0:25,0:0:25; T2= 0:0:0,30:40:10,30:35:10, 20:25:30, 10:0:25,10:0:25; T3=0:0:0,30:40:0,30:35:0,40:25:30,0:0:35,0:0:35 Percent RDF T4= Control RDF (1500 N:350 P ₂ O ₅ : 400 K ₂ O g/plant)								

Similarly, best fruit quality parameters (TSS:12.7⁰Brix, minimum acidity 0.43% and high TSS acidity ratio) were also recorded in the treatment T3 (0:0:0, 30:40:0,30:35:0,40:25:30,0:0:35,0:0:35 percent RDF of N:P₂O₅: K₂O for stages I to VI).

The concentration of leaf nutrients were increased in all the treatments compared to control indicating maximum nutrient efficiency due to stage wise application of nutrients.

16.Organic Production of Sweet orange:The results revealed non significant differences for different organic packages with respect to growth parameters of 8 year oldsathgudi sweet orange budlings.

Treatments	Plant height (m)	Scion girth (cm)	Canopy Spread (m)		Canopy volume (m ³)	Fruits /plant	Fruit weight (g)	Yield (kg/tree)	Yield (t/ha)
			EW	NS					
T ₁	1.75	30.50	2.48	2.65	6.07	66.34	141.50	9.39	2.60
T ₂	1.98	30.25	2.29	2.38	6.08	55.75	128.25	7.13	1.98
T ₃	1.90	33.00	2.39	2.44	6.26	67.58	149.25	10.08	2.79
T ₄	1.99	32.50	2.60	2.82	7.90	73.51	149.00	10.96	3.04
T ₅	2.12	33.42	2.67	2.87	8.86	75.32	141.50	10.66	2.96
CD@5%	NS	NS	NS	NS	NS	7.36	12.02	1.12	0.31
SE(m)±	0.11	1.86	0.11	0.13	0.95	2.36	3.86	0.36	0.10
CV%	11.66	11.65	9.10	10.16	27.13	6.98	5.44	7.48	7.52
T ₁ : Control (750N: 350P ₂ O ₅ :400 g K ₂ O + 40 Kg FYM + 8 kg Neem cake /plant/year) + Inorganic plant protection. T ₂ : 100 % Vermicompost (On N-equivalent basis of RDF). T ₃ : 75 % Vermicompost (On N-equivalent basis of RDF) + <i>Trichodermaharzianum</i> (30 - 40 ml / plant) + Azadirachtin (1 % at 3 - 4 ml / litre as spray). T ₄ : T ₃ + <i>Pseudomonasfluorescence</i> (30 - 40 ml / plant). T ₅ : 50 % Vermicompost (On N-equivalent basis of RDF) + <i>Trichodermaharzianum</i> (30 - 40 ml / plant) + Azadirachtin (1 % at 3 - 4 ml / litre as spray) + <i>Pseudomonasfluorescence</i> (30 - 40 ml / plant) + <i>Azotobacter chroococcum</i> (30 - 40 ml / plant).									

Application of 50 % Vermicompost (On N-equivalent basis of RDF) + *Trichodermaharzianum* (30 - 40 ml / plant) + Azadirachtin (1 % at 3 - 4 ml / litre as spray) + *Pseudomonasfluorescence* (30 - 40 ml / plant) + *Azotobacter chroococcum*(30 - 40 ml / plant) recorded highest number of fruits (75 fruits /plant) with long shelf life of 18 days. Whereas, fruit weight was highest in treatment T3 (149.25g). However, maximum fruit yield



(10.96kg/tree and 3.04t/ha) was recorded in treatment T4 with application of 50 % vermicompost (on n-equivalent basis of RDF) + *Trichoderma harzianum* (30 - 40 ml / plant) + azadirachtin @1 % at 3 - 4 ml / litre as spray)+ *Pseudomonas fluorescens* (30 - 40 ml / plant) followed by treatment T5. Highest juice content (53.40%) was recorded in T2 (100 % Vermicompost (On N-equivalent basis of RDF).

Native isolate counts were as follows:

Azotobacter chroococcum : 6×10^6 (cfu/ml),
Pseudomonas fluorescens : 98×10^6 (cfu/ml),
Trichoderma harzianum : 12×10^6 (cfu/ml)

17. Identification of Critical Stage of Water Requirement in Acid Lime: Planting was done during September, 2013. Plant growth parameters were not significantly influenced by different irrigation levels. But reduction in irrigation from 80 to 30PER at fruit setting and development stage during March-April (T2) has recorded minimum plant growth. Flowering was noticed during August, 2018. First harvesting was done during January-February, 2019. Also no fruiting

Treatments	Plant height (m)	Scion girth (cm)	Canopy spread(m)		Canopy volume (m ³)	Fruits/plant	Fruit weight(g)	Yield/plant (kg)
			EW	NS				
T ₁	2.37	24.22	2.33	2.38	5.37	73.67	48.35	3.63
T ₂	2.19	19.17	2.09	2.08	4.22	0.00	0.00	0.00
T ₃	2.56	25.11	2.60	2.46	7.87	69.00	50.50	3.49
T ₄	2.17	21.61	2.02	2.13	4.28	39.17	50.52	1.31
T ₅	2.22	23.67	2.16	2.15	5.10	66.50	50.10	3.35
T ₆	2.26	23.22	2.11	2.26	5.19	40.33	49.59	2.00
T ₇	2.27	21.56	2.28	2.11	6.08	67.50	49.87	3.43
CD@5%	NS	NS	NS	NS	NS	-	-	-
SE(m)±	0.13	1.77	0.19	0.21	1.09	-	-	-
CV%	9.66	13.52	14.65	16.70	34.74	-	-	-
T ₁ (30-80-80-80-80-80% ER) T ₂ (80-30-80-80-80-80% ER) T ₃ (80-80-30-80-80-80% ER) T ₄ (80-80-80-30-80-80% ER) T ₅ (80-80-80-80-30-80% ER) T ₆ (80-80-80-80-80-30% ER) T ₇ (80-80-80-80-80-80% ER)								

was noticed in T2.

18. Standardization of Stage Wise Water Requirement in Acid lime: Stage wise water application has not significantly influenced plant growth parameters in 9 year old trees of acid lime (Balaji) (Table 43). Maximum number of fruits (1518 fruits/plant) and fruit yield (72.08 kg/plant and 19.96 t/ha) were noticed in treatment T₄ (80-80-80-80-80-80 % ER) followed by treatment T₃ (60-80-60-80-60-80 %ER).

Table 43: Effect of stage wise application of water on growth and yield of acid lime



Treatments	Plant height (m)	Canopy Spread (m)		Stem girth (cm)	Canopy volume (m ³)	Fruits/plant	Fruit Weight (g)	Yield (kg/plant)	Yield (t/ha)
		EW	NS						
T ₁	3.22	43.26	4.00	4.11	32.49	1,332	40.00	53.31	14.77
T ₂	3.87	49.44	4.74	4.63	45.36	1,411	42.50	60.67	16.81
T ₃	3.76	47.86	4.62	4.44	41.31	1,391	44.00	61.06	16.91
T ₄	3.53	47.58	4.23	4.22	33.66	1,518	47.50	72.08	19.96
T ₅	3.54	47.08	4.48	4.29	36.64	1,167	43.00	50.18	13.90
CD@5%	NS	NS	NS	NS	NS	142.04	NS	10.79	2.99
SE(m)±	0.24	2.14	0.24	0.22	4.47	45.59	1.99	3.46	0.96
CV%	13.48	9.09	11.06	10.26	23.62	6.69	9.19	11.65	11.66

Highest fruit juice (50.10%) was recorded in treatment T1 (30-40-30-40-30-40 %ER) followed by treatment T4 (80% ER at all stages). The irrigation treatment T5 (30-30-30-30-30-30 % ER) from stage I to VI respectively has recorded minimum growth and yield parameters. Water requirement was also calculated and presented in Table 45.

WATER REQUIREMENT:

Table 45: Water requirement of acid lime at different irrigation levels

Treatments	Stage-I	Stage-II	Stage-III	Stage-IV	Stage-V	Stage-VI	Total (l/year/plant)
	(Jan-Feb)	(Mar-Apr)	(May-June)	(July-Aug)	(Sep-Oct)	(Nov-Dec)	
T ₁	652.28	1217.16	509.85	831.90	0	0	3211.19
T ₂	869.70	1825.74	679.80	1247.85	0	0	4623.09
T ₃	1304.55	2434.32	1019.69	1663.80	0	0	6422.37
T ₄	1739.40	2434.32	1359.59	1663.80	0	0	7197.12
T ₅	652.28	912.87	509.85	623.93	0	0	2698.92

19. Studies on integrated nutrient and water management in Acid lime: The planting has been done in October, 2013 and plant growth parameters of two years old acid lime seedlings were non significant for plant height and canopy volume. Flowering was noticed during august, 2018. First harvesting was done during January-February, 2019.

Table 46: Effect of irrigation schedule and fertigation on growth of acid lime at Tirupati (2018-19)

Treatments	Plant height (m)	Stem girth (cm)	Canopy spread (m)		Canopy volume (m ³)	Fruits/plant	Fruit weight(g)	Yield/plant (kg)
			EW	NS				
T ₁ -I ₁ F ₁	2.67	29.22	2.65	2.91	11.35	93.00	51.03	4.73
T ₂ -I ₁ F ₂	2.57	28.22	2.87	2.76	9.28	94.17	52.06	4.90
T ₃ -I ₁ F ₃	2.09	21.91	1.96	2.22	5.04	72.50	51.00	3.68
T ₄ -I ₂ F ₁	2.22	22.89	2.12	2.46	6.78	97.00	51.20	4.96
T ₅ -I ₂ F ₂	2.23	23.34	2.13	2.33	6.81	90.00	48.81	4.46
T ₆ -I ₂ F ₃	2.61	27.50	2.51	2.88	10.57	105.00	50.49	5.30
T ₇ -I ₃ F ₁	2.28	24.28	2.46	2.50	7.83	85.00	53.40	4.58
T ₈ -I ₃ F ₂	2.37	23.55	2.48	2.44	7.70	137.17	50.53	6.87
T ₉ -I ₃ F ₃	2.24	22.17	2.25	2.19	5.28	109.17	56.09	6.25
CD@5%	NS	4.97	0.49	NS	NS	-	-	-



Treatments	Plant height (m)	Stem girth (cm)	Canopy spread (m)		Canopy volume (m ³)	Fruits/plant	Fruit weight(g)	Yield/plant (kg)
			EW	NS				
SE(m)±	0.16	1.64	0.16	0.23	1.40	-	-	-
CV%	11.54	11.48	11.69	16.01	30.86	-	-	-
I1, I2, I3= Drip Irrigation 70%, 80% and 90% ER F1, F2, F3= 60%, 70% and 80% RDF								

CITRUS RESEARCH STATION, PETLUR

1. Effect of different potting media and bio- regulators on Rangapur lime root stock.

Rangapur lime rootstock plants exhibited vigorous growth with healthy tender leaves in the potting media consists of Petlur soil (650g) + sand (650g) + cocopeat (650g) + Neem cake (20.0g) + VAM (5.0g) than other potting media like, Anantarajupet soil media and Mahanandi soil media.

2. Performance of Dragon fruit on different training systems.

White type dragon fruit cultivar exhibited maximum plant height, girth and spread compared to red type on cement pole training systems then telephone and trellis.

3. Evaluation of Fig varieties

Poona red variety of fig exhibited maximum plant height, girth and spread then Brown turkey and Deanna varieties.

4. Clonal selection of Acid lime for higher yields, better fruit quality and pest & disease resistance/ tolerance.

During field visits and surveys some clones were identified with high yielding capacity free from pests and diseases. Fruits were collected from those plants and seed extracted and sown in primary nursery bed and transferred to poly bags for initial screening. The villages in which the clonal material was selected were Lingasamudram, Syadapuram, Dagguvolu, Dakkili, Gollapalli, Chejarla.

5. Studies on effect of different plant densities on yield and fruit quality in guava cv. Allahabad safeda

Planting of Guava cv. Allahabad safeda was done in 2.0mX1.0m, 2.0mX2.0m, 3.0mX3.0m, 6.0mX3.0m and 6.0mX6.0m spacing and plants are established.

6. Studies of effect of different plant densities on yield and fruit quality mango cv. Baneshan

Planting of Baneshan grafts were done in 3.0 X 3.0m, 4.0 X 3.0m, 4.0X 4.0m, 5.0 X 5.0m, 5.0 X 5.0 and 7.0 X 7.0m spacing. Plants are established and are in vegetative stage.

7. Collection, conservation and evaluation of Jamun germplasm.



One local clone of allaneredu and Konkan bahadoli were collected.

8. Introduction of noni fruit plant varieties in SPSR Nellore District

Noni plants are collected from Periyakulam Research Station, Tamil Nadu were planted and established well.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

GLADIOLUS :

Evaluation of gladiolus cultivars for quality cut flower production: Among the gladiolus cultivars evaluated Red gladiolus took maximum number of days for spike initiation (67-72 days) where as A.C. No. 7 took minimum days (57.0 days). Higher spike length (96.45) was observed in Swarnima with 15.2 number of florets per spike followed by A.C. No-7 with 92.75 cm stalk with more vasselife (8.3).

Effect of micro nutrients on growth and yield of gladiolus (*Gladiolus grandiflorus*) cv.Arka Amar: Highest plant height (67.83 cm), more spike length (98.23 cm), more rachis length (53.31 cm), more number of florets per spike (16.33) were observed with treatment sprayed with (Zn :0.5% + Boran : 0.2% + Fe: 0.2%).

CHRYSANTHEMUM:

Collection, preliminary assessment and maintenance of Chrysanthemum germplasm

Information Missing.

EXOTIC FLOWERS:

Introduction, collection and evaluation of performance of Exotic flowers under shade conditions

Highest plant height of 3.805 m. was recorded with Latispatha yellow followed by H.Claw-ii(3.595 m.) and H. pink (3.365 m.) where as H. dwarf had minimum plant height of 1.015 m. Labster claw had maximum spike length of 1.745 m. followed by H.Claw-ii (1.555 m) and Latispathabig (1.53 m)and the minimum was in Mars de loose (1.03 m)

JASMINE:

Survey, collection, maintenance and evaluation of Jasmine germplasm:

Collected two lines of *Jasminiumsambac* (GunduMalli), one line of *Jasminiumgrandifloram* (Centumalli) from Kadium whereas one line of *Jasminiumsambac* (GunduMalli) and one line of *Jasminiummultifloram* (Kaagadalu) from in and around Railway kodur area. One wild Jasmine was collected from Kovvur. One yellow Jasmine (*Jasminum humile*) from Uttarakhand and one Gundu malli (*Jasminum sambac*) from Puttur region. Highest



plant height (3.06 m) , maximum plant spread (2.78 m and 2.96 m) was observed in AJS-1. More number of petals per flower was observed in AJS-4 (23.67) followed by AJS-3 (22.33). 10 flower weight was more in AJS-4 (5.05 g) followed by AJS-3 (4.74 g). Highest yield per hectare was observed in AJS-4 (15.49 q/ha) followed by in AJS-3 (14.56 q/ha).

CROSSANDRA:

Survey, collection, maintenance and evaluation of crossandra germplasm

Collected two lines of crossandra germplasm, i.e. Rattanaboli (yellow), Pishiaboli (yellow), from ICAR-Central Coastal Agricultural Research Institute, Goa and similarly eight local selections from Pakala, B.N.Kandrika, Nagiri, Bynapalli, Perur and Obulapalli and one green coloured wild type from Railway Kodur region and three selections (Orange, Yellow, Green) from Kadiam. Arka Ambara, Arka shravya, Arka Shreeya, and Arka Kanaka from IIHR, Bangalore. Among them number of florets / spike (42.67) was more in ACS- 3 followed by ACS-6 (39.67). Spike length was more in (13.28 cm) ACS-3 followed by ACS-6 (12.37 cm). Floret length was maximum in ACS-3 (3.66 cm) followed by ACS-4 (3.63 cm). 100 flower weight was highest in ACS-11 (7.31 g) followed by and Rattanaboli (7.15 g). Among all collections highest yield per ha was recorded in ACS-11 (1975.50 kg/ha) followed by Rattanaboli (1903.56 kg per ha).

GUAVA:

Studies on the performance of coloured guava varieties Arka Rashmi, Arka Kiran and Thai guava under ultra high density planting.

Arkakiran and Taiwan pink plants were collected and planted at a distance of 3m X 3m during February-2018. Arkarashmi was planted in the month of December-2018. Among the varieties planted, Arka Kiran recorded highest plant height (138.0 cm), plant spread E-W (194.3) N-S (212.0) with 4.33 number of branches (puning was done), 55.33 number of fruits with average fruit weight of 151.5 gm/fruit and TSS (10.17⁰ brix). Maximum plants of Taiwan variety were affected with nematode and some plants have survived up to January-2109 and all plants were died due nematode attack even though proper management practices were adopted. However these plants had a plant height of 121.0 cm, plant spread E-W (124.0 cm) N-S (101.0cm) with 4.00 number of branches (puning was done) and 21.0 number of fruits.

Effect of different levels of pruning on the growth, quality and yield parameters of Bihi Guava

More number of fruits per plant (71.67), more number of fruits per pruned shoot (4.92), was recorded with 25% shoot pruning. Highest number of new shoots were found (5.33) in Terminal leaf pair shoot pruning followed by pruning level of 75% shoot retaining(4.86). Highest fruit weight per plant (29.34 kg) was observed in 25% shoot pruning followed by 50% shoot pruning (27.29kg).



PAPAYA:

Enhancing the input use efficiency in papaya

The experiment was conducted on enhancing the input use efficiency in papaya and the results revealed that among all the input treatments T1 (Raised bed + Drip irrigation + Fertigation + Mulching with 100 micron + Micronutrient spray {ZnSO₄ (0.5%) + boric acid (0.2%)} alternate months from second month after planting) recorded lowest number of days (140.54 days) for 50% flowering and highest plant height (254.58 cm). However, the effect of mulching sheet was found to be better in control of PRSV. Highest fruit length (16.68 cm), fruit circumference (45.34 cm), TSS (12.43 °) and pulp thickness (3.42 cm) was recorded in T3 (Raised bed + Drip irrigation + Fertigation + Micronutrient spray {ZnSO₄ (0.5%) + boric acid (0.2%)} alternate months from second month). However, highest fruit weight (1.31 kg), total no of fruits (41.68) and total yield (167.63 t/ha) was recorded in T3 followed by T1).

Net house cultivation of papaya

Experimental study on net house cultivation in comparison with open field cultivation of papaya var. Taiwan red lady revealed that highest number of fruits (62.85), marketable fruits (38.48 kg) and total yield (142.48 t/ha) was recorded from the plants grown in insect proof net house when compared to open field condition. Highest TSS (12.22%) and pulp thickness (3.54 cm) was recorded in net house condition when compared to open field condition. 100% severity of PRSV incidence was noticed in open field condition while 3% was recorded in net house grown plants.

Evaluation of Arka Microbial Consortium for Papaya: Research study conducted on evaluation of Arka Microbial Consortium for papaya revealed that among all the treatments highest plant height (198.50 cm), highest fruit weight (1.19 kg), highest total number of fruits (60.65) and highest total yield (138.28 t/ha) was recorded in T3 Treatment (75% RDF of N and P fertilizers + AMC application @ 5 kg/acre twice a year along FYM) along with highest pulp thickness (3.18 cm) and highest TSS content (12.35 °B).

MANGO:

Effect of micronutrients on yield and quality of mango

Experimental study on effect of micronutrients on yield and quality of mango revealed that highest flowering intensity (61.58%), fruit yield (7.62 t/ha) and yield efficiency (0.30 kg/m³) was recorded in T7 treatment, RDF + 100 g Zinc sulphate + 50 g Copper sulphate + 50 g Borax (Soil application) in basin after harvest + Foliar spray of 0.2% Zinc sulphate + 0.1% Copper sulphate + 0.1% Boric acid 2 sprays at just before flowering and marble stage. However highest canopy volume (161.35 m³) was recorded in T8 *i.e.* RDF + Mango special (IIHR) 2 months before flowering & fruits of 2-4 cm diameter stage at 5 g/l. Highest TSS (18.8B) acidity (0.41 %), fruit length (10.83 cm), fruit width (8.88 cm) and fruit weight (322.54 gms) was recorded in T7 *i.e.* RDF + 100 g Zinc sulphate + 50 g Copper sulphate + 50 g Borax (Soil application) in basin after



harvest + Foliar spray of 0.2% Zinc sulphate + 0.1% Copper sulphate + 0.1% Boric acid 2 sprays at just before flowering and marble stage. However among all the treatments highest shelf life (12.48 days) was recorded in treatment RDF+Mango special (IIHR) 2 months before flowering & fruits of 2-4 cm diameter stage) at 5g/l while on par values were recorded with T7 (12.23 days).

MUSKMELON:

Collection, maintenance and evaluation of muskmelon germplasm

Planting was taken up on 18-01-2019 and flowering was started from 33 days to 39 days in which it was early in IC-321376 and was late in Arkajeet and IC-321327. Among 43 germplasm collections, prolonged generative phase was observed from 34th day (Alpur orange & IC-32133) onwards to 44th day (IC-321378) after planting. Highest and lowest fruit weight of 2.159 kg and 372.75 kg was recorded in IC-329368 and Amul-9 respectively whereas Suvarna and IC-329368 recorded minimum and maximum fruit length (8.03 cm and 22.77 cm). More number of fruits (13.0) per plant was recorded in NCSL & IC 321374-1) and a minimum of 4 – 4.5 fruits per plant was recorded in Sirangi and IC-321323.

WATERMELON:

Effect of different spacings and nitrogen rates on growth and yield of Water melon

Highest yield per hectare (44.15 t) was found more in treatment with a spacing of 45 cm with nitrogen dose of 150 Kg per ha in 4 splits. where as highest fruit weight (5613.90g), highest weight of pulp (3017.27 g) was found with a spacing of 60 cm with with nitrogen dose of 150 Kg per ha in 4 splits.

Plan Projects

Epidemiology and Integrated management of papaya ring spot virus

i) Epidemiological studies on PRSV incidence in relation to crop age, indicated that, PRSV incidence increased with the age of the crop and reached its peak at 180 (DAP) at Anantharajupeta.

ii) Correlation studies of PRSV incidence in relation to weather:

Correlation studies were conducted between PRSV and Aphid catches (5cm²) with weather data during 2017-18. The studies revealed that, PRSV incidence and Aphid catches (5cm²) were positively correlated with MaxTemp and MinTemp and negatively correlated with RH1 and RH2.

Table 1: Correlation studies of PRSV incidence and Aphid catches (5cm²) with weekly weather data during 2017-18 at Anantharajupeta .

--	PRSV (%)	Aphid (5 cm ²)	MinT (°C)	MaxT (°C)	RH1 (%)	RH2 (%)



PRSV (%)	1	0.525	0.149 NS	0.517	-0.446	-0.12 NS
Aphid (5 cm ²)	0.525	1	0.462	0.725	-0.604	-0.06 NS

b. Integrated management of PRSV:

Under management of PRSV the results revealed that T4 (spraying of Urea @ 10g/liter + Zinc sulphate @1.5g + Boron @ 1.0g per litre) was found significantly superior with an average yield of 20.02 and marketable fruits (22.82kg/plant) over control (8 t/ha and 8.97 fruits/plant marketable fruits).

Table 2: Effect of PRSV management treatments on Yield parameters at Anantharajupeta

Treatments*	Total No. of Marketable fruits	Total no. of un marketable fruits	Average Yield (t/ha)
T1	19.06	23.14	15.47
T2	16.74	21.78	17.98
T3	17.33	22.00	18.92
T4	22.82	19.92	20.02
T5	8.97	21.29	8.00
CD (5%)	1.8	NS	2.89
CV %	6.86	11.27	11.22

1. Integrated management of papaya diseases

The incidence and severity of major diseases viz., Collar rot, Foot rot, Leaf spots, PRSV and PLCV were recorded in Module I (Integrated management schedule) and Module II (Farmers practice). Yield parameters viz., Number of marketable fruits, Number of unmarketable fruits and Total yield per plant (Kg) were recorded.

At Anantharajupeta, it was observed that in Module I, PRSV incidence was 19.49% at vegetative stage and reached up to 100 % at the fruiting stage. In module II (Farmers practice) PRSV initially was 40.46% at vegetative stage and increased to 100%. Collar rot was increased from 2.0% to 4.6 %. Leaf curl appeared at 8.3 % and increased to 15.6 % in Module II. Where as in Module I low collar rot (2.3) was observed and very less Papaya leaf curl (5.6%) was recorded. Total yield per plant was significantly superior in Module I (21.6 kg/ plant) compared to Module II (10.53 kg/plant).

Table3. Influence of Integrated management (module I) on different diseases of papaya

	Module I			Module II		
	Vegetative stage	Flowering stage	Harvesting stage	Vegetative stage	Flowering stage	Harvesting stage



Collar rot	0	0	1.1	2	3	4.6
PRSV (%)	17.61	43.75	98	38.66	99.33	100
PLCV (%)	0	1.1	2.8	1.66	2.66	3.3
Leaf spot (PDI)	-	-	-	-	-	-
Fruit rot	-	8	18		11	24
Root rot	-	-	-	-	-	-
Total no. of Marketable fruits	-	-	13.5	-	-	9.5
Total no. of unmarketable fruits	-	-	19.6	-	-	21.6
Yield Kg/plant	-	-	216	-	-	10.53

3. New and emerging disease(s) of Mango

Survey was conducted in the month of May and June 2018 in KodurNagavaram and Anantharajupeta of kodur mandal in Kadapa district. The observations revealed that 15-20% anthracnose on mature fruits (ready to harvest) of Baneshan. Stem end rot (15 - 25 %) was recorded in Banglora and Baneshan. Gummosis on trunk and branches (12%) was recorded. Survey was conducted in the month of September 2018 in Kodur and Reddivaripalle villages of Kodur mandal of Kadapa district and it was observed that **10-15% anthracnose** on older leaves and gummosis on trunk and branches (15-20 %) was observed. (Table 4)

Table 4: Seasonal occurrence of different diseases of mango during Pre monsoon/monsoon/post monsoon seasons in Rayalaseema region of Andhrapradesh

Sl. No.	Name of the diseases	Disease incidence (%) during winter (Oct- Mar)	Disease incidence (%) during Pre monsoon season	Disease incidence (%) during post monsoon
1	Blossom blight	25	10-60	--
2	Powdery mildew	15	22	--
3	Anthracnose	15 (Leaf)	5-10 on Fruit	10 (leaf)
4	Sooty mould	18	22-24	10
5	Malformation	0	1	0
6	Bacterial blight (leaf)	0	10-15	0
7	Red rust	10	15	15
8	Die back	2	2	5
9	Black Banded	0	0	0-2
10	Stem end rot	5	15-20	--
11	Gummosis (<i>Diplodia</i>)	20	15-20	10

4. Cost effective management of post-harvest anthracnose of mango by pre and postharvest treatments

Pre harvest treatments were imposed as per the technical program on mango cv. Baneshan trees and fruits were harvested at physiological maturity and post harvest treatment hot water treatment (52°C for 10 min) were imposed on T3, T4 & T6 fruits. Treated fruits were stored at room temperature in CFB boxes and data were collected on 3rd, 5th and 7th days after treatment.



Percent disease severity and percent disease incidence were calculated. Results indicated that T4 (Three sprays of hexaconazole (0.1%) followed by hot water treatment (52°C for 10 min)) was found effective with lowest severity (14%) and incidence (20%) of anthracnose and 20.8 % TSS at 7th day after treatment followed by T3 (Three sprays of Azadiractin 5 EC (2%) followed by hot water treatment (52°C for 10 min)). (Table 5).

Table 5: Effect of pre and post harvest treatments on severity of anthracnose (PDI) on Baneshan at HRS, Anantharajupet

Treatments	7DAT	9DAT	12 DAT	TSS °B	% Acidity
T1	0.75	8.50	22.63	19.41	0.87
T2	1.75	11.50	34.50	17.29	0.67
T3	1.25	6.00	19.75	19.03	0.48
T4	0.00	2.50	11.50	21.57	0.52
T5	2.25	6.00	28.39	17.03	0.66
T6	4.00	15.00	38.75	15.95	0.89
C.D.	1.06	9.56	4.86	0.97	0.03
SE(m)	0.35	3.19	1.62	0.32	0.01
SE(d)	0.50	4.52	2.29	0.45	0.01
C.V.	42.43	43.43	11.60	3.42	2.76

DAT: Days After Treatment; PDI: Percent Disease Index (severity); % Inc: % Incidence; TSS: % Total soluble solids

5. Standardization of hot water treatment technique (HWTT) to manage post-harvest anthracnose as well as fruit flies of mango

Treatments were imposed on three popular varieties viz., Baneshan and the results showed that zero percent incidence and severity of anthracnose was recorded in T1 (52°C for 10 minutes) and T3 (48°C for 60 minutes) without causing any deleterious effects on fruit peel colour, texture, total soluble solids and acidity up to 10 days. (Table 6)

Table 6: Effect of Hot water treatment on % incidence and severity of Anthracnose, TSS and % Acidity

	% Anthracnose Incidence		% Anthracnose Severity		TSS (°B)		% Acidity	
	7th day	10 Day	7th day	10 Day	7th day	10 Day	7th day	10 Day
T1	0	0	0	0	18.8	22.1	0.596	0.46
T2	0	20.0	0	4.0	19.3	20.1	0.368	0.23
T3	0	0	0	0	19.2	21.8	0.38	0.18
T4	0	10.0	0	2.0	18.3	17.6	0.46	0.21
T5	13.33	23.33	8.0	16.0	15.2	16.6	0.64	0.32

6. Identification and characterization of pathogens associated with stem end rot in mango.



The fungus which was isolated from stem end rot was confirmed as *Diplodiaspp* based on morphological studies. Pathogen DNA is isolated for molecular identification up to species level.

Non-Plan

Identification and characterization of pathogens associated with leaf and inflorescence blight in Tuberose

Eleven tuberose cultivars were screened against *Alternaria* leaf spot (*Alternariapolyanthi*) under field conditions. None of the eleven cultivars screened against leaf spot disease of tuberose, was free from the disease. Therefore no variety could be included in the Immune or resistant category (0 & I). However, three cultivars viz., Arkanirantar (13.34%), GKTC-4 (15.7%) and Hyderabad double (17.2%) were found to be moderately resistant (category II) and seven cultivars viz., Sikkim (27.3), Phule Rajini (29.3%), Calcutta single (33.1%), Prajwal (34.1%), Rajith Rekha (35.8%), Sringer (34.9%) and Vaibhav (38.0%) were found moderately susceptible (category III). The local susceptible check recorded highest percent leaf area infection (56.0%) (category IV).

Reaction tuberose varieties against *Alternaria polianthi* under field conditions during 2016, 2017 and 2018

S.No	Variety	Percent Disease Index (PDI)	Mean PDI		Reaction
		2015-16	2016-17	2018-19	
		15.78	13.14	11.1	
2	Calcutta single	32.51	30.73	36.2	
3	GKTC-4	18.61	16.48	11.9	
4	Hyderabad double	17.21	19.91	14.54	
5	Phule Rajini	27.86	24.01	36.0	
6	Prajwal	35.81	32.5	34.0	
7	Rajith Rekha	36.54	32.57	38.18	
8	Sikkim	24.56	22.86	34.5	
9	Sringer	37.82	34.14	32.7	
10	Vaibhav	39.13	34.73	40.0	



7. Evaluation of new fungicides for the management of downy mildew, *Pseudoperonosporacubensis* in Musk melon.

Field experiment was conducted during January, 2019. The observations revealed that, Cymoxanil 8% + Mancozeb 64% WP @ 3g/l (T2) was found significantly superior with 52.67% disease reduction over control followed by Dimethomorph 50% WP @ 2.5 g/l (T7) with 50.62% reduction over control with and yield of 4.47 t/ha and 3.71 t/ha respectively.

Effect of new fungicides against the downy mildew in musk melon under field conditions during 2019

Treatments	PDI	% Reduction over control	TSS (°B)	Fruit weight (g.)	Yield (t/ha)
T1	36.86	43.87	8.56	95.77	3.79
T2	26.19	52.67	9.66	1077.11	4.47
T3	47.17	35.20	8.28	843.11	3.51
T4	59.91	26.41	8.89	825.73	1.58
T5	46.58	35.67	9.21	875.14	3.44
T6	55.69	26.77	9.33	878.79	3.19
T7	28.68	50.62	9.89	1009.71	3.71
T8	51.07	31.52	9.62	890.29	2.33
T9	46.89	35.23	8.78	849.52	3.31
T10	70.89	0.00	6.94	580.28	1.49
C.D.	7.66	6.25	0.67	69.39	0.40
SE(m)	2.56	2.09	0.22	23.18	0.14
SE(d)	3.62	2.95	0.32	32.78	0.19
C.V.	9.42	10.70	4.34	4.60	7.59

8. Management of Early blight, *Alternaria solani* (Ellis and Martin) and Stemphylium leaf spot, *Stemphylium botryosum*f.sp. *lycopersici*) diseases in tomato

The results revealed that T4 Chlorothalonil 75 % WP @ 2.5g/l followed by T9: Tebuconazole 430 SL @ 1 ml/l with three sprays was found effective in 10 days of time interval against the early blight (76.99% disease reduced) and stemphylium leaf spot (85.30% disease reduced) in tomato.

Effect of new fungicides against Early blight of tomato in field conditions

S.No	Treatment	Percent disease index (%)				Disease control over the check (%)	Yield (t/ha)
		45 DAS	65 DAS	75 DAS	90 DAS		
1	T1	4.64	8.82	16.04	23.98	48.83	23.98



2	T2	6.34	13.78	25.04	18.80	28.88	18.80
3	T3	5.76	11.94	21.70	20.70	32.86	20.70
4	T4	1.66	4.69	8.68	28.89	76.99	28.89
5	T5	4.54	8.68	15.77	25.62	52.91	25.62
6	T6	4.97	9.60	17.45	23.35	45.71	23.35
7	T7	5.44	9.46	17.19	21.46	37.05	21.46
8	T8	5.33	10.12	18.39	23.05	41.09	23.05
9	T9	3.27	6.12	11.12	26.73	67.42	26.73
10	T10	15.08	23.81	43.27	73.98	0.00	12.52
	C.D.	0.697	1.008	1.485	4.552	8.37	2.932
	SE(m)	0.233	0.337	0.496	1.52	2.795	0.979
	SE(d)	0.329	0.476	0.701	2.15	3.953	1.385
	C.V.	3.026	3.131	3.349	6.535	12.395	7.535

Effect of new fungicides against *Stemphylium* leaf spot of tomato in field conditions

SNo.	Treatments	45DAT	65DAT	75DAT	90DAT	% reduction over control	Yield(t/ha)
1	T1	2.72	5.83	14.86	28.17	63.53	19.93
2	T2	4.25	9.29	21.83	41.95	45.97	19.59
3	T3	3.68	8.58	21.43	38.15	50.71	20.46
4	T4	0.17	2.53	6.51	11.32	85.30	28.10
5	T5	2.55	5.56	16.23	25.81	66.58	24.27
6	T6	2.91	6.57	20.42	31.69	59.19	22.56
7	T7	3.27	6.47	17.14	33.93	55.94	20.66
8	T8	3.21	6.89	12.18	33.26	57.01	21.61
9	T9	1.55	3.44	9.79	16.93	78.01	26.70
10	T10	11.24	17.96	37.35	73.10	0.00	11.03
	C.D.	0.58	0.75	1.33	2.96	2.72	4.25
	SE(m)	0.19	0.25	0.45	0.99	0.91	1.42
	SE(d)	0.28	0.36	0.63	1.40	1.28	2.01
	C.V.	3.33	2.87	3.17	4.92	4.43	11.45

VEGETABLES

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

Non Plan – Vegetables

- About 240 germplasm lines of tomato, 84 lines of brinjal, 53 lines of okra, 22 lines of oriental pickling melon, 12 lines of ridge gourd, 22 lines of dolichos bean and 10 lines of



cluster bean were collected from different sources and evaluated during 2018-19. The superior lines identified will be utilised in crop improvement programme.

- In evaluation of gerbera varieties under naturally ventilated polyhouse (NVPH) flower diameter was highest during Dec-Jan months and lowest during April-May months. Thrips incidence was highest during April- May (51.00 %) and lowest during December – January (18.09 %). Good quality flowers were harvested during Dec-Jan months.

FLOWERS

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

Non Plan – Flowers

- In collection, evaluation and maintenance of varieties of gladiolus (*Gladiolus grandiflora* L.) twelve varieties were evaluated. Number of spikes per plot was maximum in Arka Amar (22.86) and, minimum number of spikes per plot was recorded in Darshan Sel. (9.79). Arka Amar (1,62,694 spikes/ha) recorded maximum yield where a lowest yield was recorded in Darshan Selection (71093.56 spikes/ha).
- In collection, evaluation and maintenance of varieties of marigold (*Tagetes erecta* L.) eight varieties were evaluated. Arka agni recorded more number of flowers per plant (72.62) which was on par with Bidan Marigold-2 (62.86) along with highest flower yield (20.30 kg/plot and 11.04 t/ha)
- In collection, evaluation and maintenance of varieties of china aster (*Callistephus chinensis*) seven varieties were evaluated. Phule Ganesh Pink recorded highest plant height (72.68 cm). in Phule Ganesh Pink recorded more number of laterals (12.31) which was significantly on par with Arka Achana (11.40) and Phule Ganesh White (11.05). Maximum number of flowers per plant was recorded in Phule Ganesh Pink (41.06) which was significantly superior over other varieties under evaluation. Yield was maximum in Phule Ganesh Pink (218.17 g/plant and 6.55 kg/plot) which was significantly on par with Arka Archana (199.19 g/plant and 5.98 kg/plot).
- In collection, evaluation and maintenance of varieties of crossandra (*Crossandra fundibuliformis*), six varieties were evaluated. Arka Ambara (10.62 g) recorded maximum 100 flower weight which was significantly on par with Arka Shreeya (10.46 g). Arka Shravya recorded maximum yield (312.6 g/plant) which was significantly on par with Arka Shreeya (287.94 g/plant).
- In collection, evaluation and maintenance of germplasm of chrysanthemum (*Dendranthema grandiflora*) forty six germplasm lines were evaluated. Average 5 flower



weight was maximum in Pusa centenary (25.75 g) and flower yield per plant was maximum in HYDC 42 (165.71 g).

- In collection, evaluation and maintenance of varieties of tuberose (*Polianthes tuberosa*), eight single floret type and 3 double floret types were evaluated. Among singles Prajwal recorded more number of flowers per spike (59.91) and in doubles Vaibhav recorded more number of florets per spike.(48.87)

HORTICULTURAL RESEARCH STATION, KOVVUR

Standardization of *in vitro* plant regeneration from chrysanthemum ray florets

Among the different growth regulator combinations tested for callus induction in ray floret explants of chrysanthemum, MS media supplemented with 4.0 mg/l BAP + 1.0 mg/l NAA recorded significantly highest explant survival (81.0%) and maximum callus induction (92.3 %) in shortest period of time (7.2 days). Among the different hormones tested for plant regeneration, significantly highest adventitious shoot bud regeneration (82.0%), maximum shoots per explant (12.6) and minimum number of days (28.5 days) required for shoot bud induction was recorded in the MS media supplemented with 4.0 mg/l BAP + 1.0 mg/l NAA.

Standardization of protocol for *in vitro* propagation of *Crossandra in fundibuliformis* (L.) Nees

Among the different surface sterilization treatments on culture establishment of *Crossandra in fundibuliformis*, treating the explants with 0.1% carbendazim + 0.01 % Streptomycin Sulphate for 1 hour recorded lowest contamination (28.57%) compared to control i.e., water shaking (100%).

Significantly highest frequency of shoot regeneration (93.33%) was observed in media supplemented with 1.0 ppm BAP which was on par with 1.5 ppm BAP (86.67%). Media supplemented with BAP at 1.0 ppm also recorded maximum number of shoots in two subcultures. At the end of subculture II maximum shoot length of 3.83 cm was recorded at 1.0 ppm BAP.

TUBER CROPS

HORTICULTURAL RESEARCH STATION, KOVVUR

Collection, Conservation, Cataloguing and evaluation of genetic resources of tuber crops

In elephant foot yam, among 28 non acrid lines, AC 43 has recorded the highest yield of 70 tha^{-1} followed by AC2 (52.5 tha^{-1}) and Gajendra (49.5 tha^{-1}). Whereas among the acrid lines highest yield was recorded in AC 40 (42.75 tha^{-1}) followed by AC 28/1 (36.96 tha^{-1})

In *Colocasia* accessions, among the short duration lines Godavari Chema has recorded the highest cormel yield of 41.5 tha^{-1} followed by CA 7 and CA 27 with an yield of 39.29 tha^{-1} . Among the medium duration group, accession CA50 has recorded highest cormel yield of 39.0



t ha⁻¹ followed by Satamukhi (37 t ha⁻¹). While among the long duration lines Bhavapuri (KCS2) has recorded the highest yield of 44.5 t ha⁻¹ followed by B col-1 (35.71 t ha⁻¹).

Among thirty two accessions of greater yam highest yield was recorded in Sri Priya (86.42 t ha⁻¹ followed by D 18 (54.94 t ha⁻¹).

IET on Greater yam

Among twelve entries under evaluation, local variety has recorded highest yield i.e. 48.83 t ha⁻¹ which was at par with TGY 17-3 (43.96 t ha⁻¹). Highest starch content (37.2%) was observed in TGY17-1.

URT on greater yam

In Uniform regional trial in greater yam among nine entries under evaluation, the local variety has recorded highest yield of 59.35 t ha⁻¹ followed by TGY 14-9 with an yield of 47.16 t ha⁻¹ which was at par with TGY 14-11 (46.02 t ha⁻¹). Pooled analysis also indicated that highest yield was recorded in the accession TGY 14-11 (46.07 t ha⁻¹) followed by TGY 14-9 (45.98 t ha⁻¹). However TGY 14-7 has recorded the highest starch content (31.23%).

MLT on greater yam

Under multi location trial in greater yam conducted in four different locations, among the six entries under evaluation, TGY 12-3 has recorded the highest mean yield of 51.17 t ha⁻¹.

IET on Colocasia

Among the eight entries under evaluation, Ttr 17-1 has recorded the highest cormel yield (33.15 t ha⁻¹) and total yield (46.59 t ha⁻¹) followed by Sreereshmi (12.23 t ha⁻¹ and 22.43 t ha⁻¹ respectively).

IET on Elephant foot yam

Among nine elephant foot yam entries under evaluation, IEY 17-5 has recorded the highest yield of 64.25 t ha⁻¹ followed by Gajendra (56.67 t ha⁻¹).

Studies on the performance of open pollinated seedling of *Amorphophalluspaeoniifolius*.

At 5 MAP highest growth parameters like pseudostem height (68.72 cm), girth (13.16 cm), number of leaflets/plant (229.00) were observed in OPEFS 9 whereas canopy diameter (91.13 cm EW and 90.77 cm NS) were found to be maximum in OPEFS 1 accession and minimum was observed in OPEFS 13 accession with pseudostem height (46.61 cm), girth (8.44 cm), number of leaflets/plant (129.12), canopy diameter (52.19 cm EW and 53.93 cm NS). However, among yield and yield attributing characters, yield /plant (1.87 kg), tuber height (11.93 cm), tuber volume (1620 cm³), yield /plot (12.33 kg) and yield ha⁻¹ (48.94 t) were maximum in OPEFS 1 followed by OPEFS 5, while minimum was observed in OPEFS 13. Among quality parameters, sugars and starch contents were maximum in OPV 2 (9.04 and 13.78 g/100g dry weight of tuber respectively). Moreover, lowest oxalate content was observed in



Gajendra (0.013%) and was on par (0.021 %) with OPEFS 3, OPEFS 6 and OPEFS 9 accessions and maximum was observed in the rest of the accessions (0.025 – 0.034%) while drymatter was maximum in OPEFS 13 (28.39%) and OPEFS 9 (23.69%).

Evaluation of open pollinated seedling progenies of *Amorphophallus paeoniifolius*

Among the forty five accessions of Teeparu, highest corm yield of 2420 g/plant was recorded in acc no. 26 where as among the sixty open pollinated progenies of Tadiparru highest corm yield (3460 g/plant) was recorded in acc no 46. Less percentage of leaf blight (11.67%) was observed in the progenies of Tadiparru compared to Teeparu (75.56%).The re-emergence was also highest in the accessions from Tadiparru (61.67%).

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

Genetic Resource management

Crop	Year	No. of collections	No. of new Collections	Total collections	No. for which accession number received from NBPGR so far
Cassava	2018-19	87	6	93	14
Sweet Potato	2018-19	32	5	37	3

- Among the cassava entries, CMR-63 recorded maximum yield of 51.28 t/ha followed by Ambakadan with an yield 46.81 t/ha. Eighteen entries showed 100 per cent field resistance to cassava mosaic disease.
- Among the sweet potato accessions, the entry S-30-11 has recorded maximum yield with 38.27 t/ha followed by 82/16 (26.97 t/ha).

Varietal evaluation

CASSAVA

- IET on cassava mosaic resistant varieties (2nd year) was continued with 15 entries and the results revealed that there are significant differences between the entries for all the studied characters. Maximum tuber yield per hectare was recorded in TCa 16-5 (52.14 t/ha) followed by TCa 16-3 (45.47 t/ha) and Sree Raksha (47.68 t/ha). Highest starch content was observed in TCa 16-5 (27.33%) followed by TCa 16-6 (25.83%). Highest dry matter content was observed in Sree Raksha (47 %) followed by TCa 16-1 (45.2%). The pooled analysis indicated that among all the entries under evaluation, TCa 16-5 has recorded the highest yield (53.36 t/ha) followed by TCa 16-3 (45.98 t/ha) and Sree Raksha (45.38 t/ha). According to CMD score, Sree Raksha has showed complete resistance to CMD. The entry TCa 16-7 has showed lowest incidence of CMD. The entry TCa 16-5 has recorded the highest starch (27.41 %).
- MLT on K efficient cassava lines (1st Year) was continued with 5 entries and the results revealed that there are significant differences between the entries for all the studied



characters. TCa 14-5 has recorded the highest tuber yield (54.26 t/ha) followed by TCa 14-6 (45.64 t/ha) and SreeAthulya (45.13 t/ha). However, across the locations the mean tuber yield was maximum in SreeAthulya (40.49 t/ha) followed by TCa 14-5 (37.28 t/ha). Highest starch content was observed in SreeAthulya (27.90 %) followed by Local (26.19%). Among the entries, the utilization of available K₂O by TCa 14-5 was very less compared to others. The results revealed that the entry, TCa 14-5 is efficient in giving highest yield by utilizing minimum amount of available 'K' from the soil.

SWEET POTATO:

IET on orange flesh sweet potato (2nd Year) was continued with eight entries. The results revealed that there are significant differences between the entries for all the studied characters. Maximum tuber yield per hectare was recorded in TSp 16-9 (31.40 t/ha) followed by TSp 16-6 (30.51 t/ha). The pooled total tuber yield per hectare was maximum in TSp 16-6 (28.43 t/ha) followed by TSp 16-9 (27.35 t/ha). Whereas, the maximum pooled marketable tuber yield was recorded in TSp 16-9 (18.19 t/ha) followed by TSp 16-6 (16.25 t/ha). The highest starch content and maximum sugars were observed in Tsp 16-7 with 14.77% and 8.06% respectively. Highest dry matter content was observed in TSp 16-6 (43.67%). However the B carotene content was highest in ST-14 (6.47 mg/100g) followed by TSp 16-5 (6.2 mg/100 g).

SPICES

HORTICULTURAL RESEARCH STATION, LAM

A. CHILLIES IMPROVEMENT SCHEME:

1. Collection, Maintenance, Evaluation, cataloguing and utilization of hot pepper (*Capsicum annuum L*) germplasm

About 160 working germplasm lines *i.e.*, lines developed and collected over the years were evaluated. The selections were made within lines; the selected plants were selfed and multiplied for evaluation during 2019-20.

2. Development of chilli varieties/ hybrids through selection, hybridization for yield and quality

Sub Project A: Improvement of hot pepper through hybridization followed by selection in advance generations

Single plants were selected for further generation advancement and evolution from segregating material of F₂, F₃, F₄ and F₆. Promising single plants selected in F₆ generation will be evaluated in observation yield trial and used in hybridization.

Generation	No. of crosses grown	No. of plants/ progenies in each cross	No. of single Plants selected
------------	----------------------	--	-------------------------------



F ₂	15	150 per progeny	75
F ₃	22	80 per progeny	40
F ₄	10	80 per progeny	14
F ₆	21	80 per progeny	18

Sub Project B: Advanced Hybrid yield trial

Proven best crosses made during 2008-09 to 2016-17 were evaluated in 2011-12, 2012-13, 2013-14, 2014-15, 2015-16 and 13 superior combinations (fertile x fertile; sterile x fertile) selected were utilized for seed production in 2017-18 and were evaluated in 2018-19 for yield and yield components along with a check Indam-5. The hybrids varied significantly among themselves for yield and yield components. The hybrid LCH 08-59 (LCH-222) recorded highest dry pod yield of 6960kg/ha followed by LCH 08-64 (LCH-111) with an yield of 5869 kg/ha, LCH 10-9 (5700 kg/ha) and LCH 15-5 (5700 kg/ha) over the check Indam-5 (4528kg/ha).

Table 1: Mean performance of Hot pepper entries studied under advanced yield trial during 2018 - 19 season

S. No	Hybrid no	Plant height (cm)	Plant spread (cm)	No of branches / plant	No. of fruits /plant	Fruit length (cm)	Fruit girth (cm)	No. of seeds/ pod	Dry pod wt kg/ha
1	LCH15-5	96.15	97.73	4.20	487	9.43	2.90	78.28	5700
2	LCH 15-24	90.45	108.15	4.90	535	6.53	2.84	53.68	3350
3	LCH 15-5	101.85	111.05	5.20	665	5.73	2.29	69.68	4128
4	LCH 10-9	82.65	80.00	4.25	487	7.28	2.98	81.28	5700
5	LCH 09-8	96.15	125.00	4.42	454	8.06	3.10	82.28	3875
6	LCH 09-9	95.75	143.29	5.07	195	8.16	2.98	66.83	5429
7	LCH 09-10	68.55	107.65	4.07	632	7.16	3.78	73.43	4820
8	LCH 09-11	83.85	135.07	4.00	622	6.68	3.20	70.73	3200
9	LCH 09-12	93.25	118.97	4.57	539	6.83	3.35	65.23	4433
10	LCH 09-21	79.05	146.48	4.40	611	12.18	4.05	60.53	5008
11	LCH 09-24	73.45	108.53	4.10	313	7.43	3.90	96.18	4717
12	LCH 08-59 (LCH-222)	107.50	166.06	3.90	560	9.91	3.43	67.13	6960
13	LCH 08-64 (LCH-111)	117.50	155.67	3.00	578	13.03	3.25	66.23	5869
14	Indam-5	96.85	156.65	4.40	628	8.23	3.03	81.63	4528
	SEm±	5.52	7.72	0.11	34	0.48	0.27	5.27	277
	CD@ 5%	16.86	23.59	0.32	103	1.46	0.82	16.09	845
	CV%	8.50	8.70	3.50	9	8.10	11.80	10.30	8

Sub Project C: Replicated Row Yield Trial of Hot pepper

In Replicated Row Yield Trial, 14 entries were included for comparing yield and yield components over the check, LCA-625. The entry RRYT- T 3 recorded significantly highest dry



pod yield 163g per plant followed by RRYT -T 1 (114 g per plant) over the check LCA-625 (97 g per plant).

Sub Project D : Preliminary Yield Trial-dry chilli

A total of 16 entries were evaluated for dry pod yield and other yield components along with the check variety *viz.*, LCA 625 in a RBD with 2 replications during the crop year 2018-19 season for yield and other economic characters. Yield components like plant height, plant spread, no. of pods per plant, pod length, pod girth, 1000 seed weight and dry yield/ha significantly varied among the entries excepting number of branches per plant and pod girth. The entry LCA-680 recorded significantly highest dry pod yield 6034kg/ha followed by LCA-684 (5896 kg/ha) and LCA 651 (4820 kg/ha) over the check LCA-625 (3719 kg/ha).

Sub Project D: Preliminary Yield Trial-green chilli

A total of 15 entries were evaluated for green pod and dry pod yield and other yield components along with the check variety *viz.*, CA-960 in a RBD with 2 replications during the crop year 2018-19 for yield and other economic characters. Yield components like plant height, plant spread, number of branches per plant, number of pods per plant (green & dry) and pod length, pod girth and yield significantly varied among the entries. The entry LCA- 643 recorded significantly highest green pod yield (29322 kg/ha) followed by LCA-394 (28611 kg/ha) and LCA 502 (28535 kg/ha) over the check CA-960 (22601 kg/ha). LCA-643 recorded significantly highest dry pod yield (5401 kg/ha) followed by LCA- 502 (5187 kg/h), LCA-394 (4761 kg/ha) and LCA-349 (4293 kg/ha) over check CA 960 (3173 kg/ha). It shows the suitability of LCA 643 for dual purpose.

Sub Project – D : Advanced yield trail

In advance yield trial, 16 entries along with check entry *viz.*, LCA 625 were studied in a RBD with 2 replications during the crop year 2018-19 for yield and other economic characters. Yield and yield attributing characters like plant height, plant spread, number of branches per plant, number of pods per plant, pod length, pod girth, no of seeds per plant and 1000 seed weight significantly varied among the entries. The entry LCA- 657 recorded significantly highest dry pod yield of 5982kg/ha with 430 pod per plant followed by LCA 647 (5962 kg/ha), LCA 617 (4949 kg/ha) over the check LCA -625 (4339 kg/ha).

ii) PAPRIKA:

3. Collection, Maintenance, Evaluation, cataloguing and utilization of paprika (*Capsicum annuum L*) germplasm

During the Kharif 2018-19, 40 germplasm lines were collected and were evaluated. The selections were made within the lines; the selected plants were selfed and multiplied for evaluation during 2019-20.



4. Development of Paprika varieties/ hybrids through selection, hybridization for yield and quality

Sub Project – A : Paprika Preliminary Yield Trial

16 entries along with check entry LCA 436 were studied in a RBD with 2 replications during the crop year 2018-19 for yield and other economic characters. The experiment was sown on 14-9-2018 and transplanted on 26-10-2018. All the entries differed significantly for yield and other components like plant height, plant spread, number of pods per plant, pod length, number of seeds per plant and 1000 seed weight excepting for number of branches per plant and pod girth. The entry LCA- 507 recorded significantly highest dry pod yield (4417 kg/ha) followed by LCA 466 (4267 kg/ha), LCA 506 (3742 kg/ha) and LCA-503 (3537 kg/ha) over the check LCA-436 (2291 kg/ha).

Sub Project B : Paprika Advanced Yield Trial

In paprika advanced yield trial, 16 entries along with check entry viz., LCA 436 were studied during the crop year 2018-19 for yield and other economic characters. All the entries differed significantly for yield and other component characters like plant height, plant spread, number of pods per plant, pod length, pod girth, number seeds per plant and 1000 seed weight excepting for number of branches per plant. The entry LCA- 442 recorded highest dry pod yield of 4627kg/ha followed by LCA- 472 (4312 kg/ha), LCA-470 (4127kg/ha) and LCA-430 (3827kg/ha) over the check LCA-436 (3155kg/ha).

B. AICRP (VEGETABLE CROPS):

Collection, evaluation and maintenance of chilli germplasm

About 300 chilli germplasm lines were maintained and germplasm exhibited wide range of variation. Among the entries, plant height ranged from 34.6 cm (NGP- 45) to 110.3 cm (NGP-69). Plant spread ranged from 39.0cm (NGP-32) to 182.3cm (NGP-49) and number of primary branches ranged from 2.3 (NGP- 43) to 4.5 (NGP-4). Among the entries, more number of fruits were recorded in NGP-64 (169) and less number of fruits were observed in NGP-38 (29.2) where as fruit length was maximum in NGP – 78 (11cm) and fruit width was maximum in NGP-67 (2.2 cm) and average fruit weight was maximum in NGP-6 (2.3gm). The highest ripe chilli yield per plant was recorded by NGP-4 (275 g/Pl).

Table 8: Range of yield and growth characters studied during 2018-19 in chilli germplasm.

S. No	Character	Maximum	Minimum	Mean	Maximum	Minimum
1	Plant Height (cm)	110.3	34.6	65.1	NGP-69	NGP-45
2.	Plant spread (cm)	210.5	39.0	108.41	NGP-70	NGP-62
3.	No. of Branches	7.5	2.0	4.2	NGP-10	NGP-80



4.	No. of Fruits	169.0	29.2	98.0	NGP-64	NGP-33
5.	Fruit Length (cm)	11.0	5.2	7.8	NGP-78	NGP-19
6.	Fruit width (cm)	2.2	0.9	1.4	NGP-67	NGP-44
7.	Average fruit weight (g)	0.7	2.3	1.3	NGP-6	NGP -42
8.	Yield/pl (g)	275.0	27.0	112.1	NGP-4	NGP - 22

VARIETAL TRIALS :

CHILLIES

- In IET, among six entries evaluated, the entry 2018/CHIVAR-8 recorded significantly highest dry chilli yield (132.8 q/ha) followed by check (106.2 q/ha).
- In AVT-II, among seven entries evaluated, the entry 2016/CHIVAR-3 recorded significantly highest dry chilli yield (129.7 q/ha) followed by 2016/CHIVAR-8 (97.9 q/ha).

COWPEA :

- In AVT-II, seven cowpea varieties were evaluated against local Check. Among the entries tested, significantly highest yield was recorded by 2016/COPBVAR-5 (86.4 q/ha) which was on par with 2016/COPBVAR-4 (80.3 q/h).

CAULIFLOWER:

- Early AVT-II, among eight entries evaluated, the entry 2016/CAUEVAR-5 recorded significantly highest yield (144.3q/ha) followed by 2016/CAUEVAR-6 (134.5 q/ha).
- Mid AVT-II, among seven entries evaluated, the entry 2016/CAUMVAR-2 recorded significantly highest yield (156.2q/ha) followed by 2016/CAUMVAR-1 (148.5 q/ha).

FRENCH BEAN:

In AVT-1, Among the seven entries evaluated, 2016/FBBVAR-2 recorded significantly highest yield (92.0 q/ha).

DOLICHOS BEAN (BUSH TYPE):

- In IET, among the seven varieties evaluated, 2018/DOLBVAR-1 recorded significantly highest yield (80.0q/ha) followed by check 2018/DOLBVAR-4 (59.0 q/ha).



- In AVT-I, among the seven varieties evaluated, 2017/DOLBVAR-5 recorded significantly highest yield (98.7 q/ha)
- In AVT-II, among the seven varieties evaluated, 2016/DOLBVAR-1 recorded significantly highest yield (81.7q/ha) followed by Local (76.5 q/ha).

DOLICHOS BEAN (POLE TYPE):

- In IET, ten varieties were evaluated. Among the entries, 2018/DOLPVAR-7 recorded significantly highest yield (136.3 q/ha) which was on par with 2018/DOLPVAR-1(134.9q/ha), RND-1 (126.2q/ha) and local (123.7 q/ha).
- In AVT-I, eight varieties were evaluated. Among the entries, 2017/DOLPVAR-1 recorded significantly highest yield (120.0 q/ha) which was on par with Local check NK-4 (118.7 q/ha) and NK-3(110.7q/ha)
- In AVT-II, among the twelve varieties evaluated, 2016/DOLPVAR-4 recorded significantly highest yield (132.7 q/ha) which was on par with Local check (126.7 q/ha) and Local -Kanupuchikkudu (131.3q/ha).

HYBRID TRIALS:

CHILLIES

- In IET, among seven entries evaluated, the entry 2018/CHIHBYB –13 recorded significantly maximum ripe chilli yield (146.5 q/ha).
- In AVT-I, among the seven entries evaluated, the entry 2017/CHIHBYB –9 recorded significantly highest ripe chilli yield (127.9 q/ha) with maximum fruit weight (3.8gm)
- In AVT-II, among six entries evaluated, 2016/CHIHBYB – 1 recorded significantly maximum ripe chilli yield (142.2 q/ha), fruit length (13.5 cm), fruit width (1.7cm) and fruit weight (3.0g)

BHENDI:

- In IET, among six hybrids evaluated, the highest yield was recorded by 2018/OKHYVRES – 3 (199.0 q/ha) followed by 2018/OKHYVRES – 5 (196.6 q/ha)
- In AVT-I, among the eight bhendi hybrids evaluated, the highest yield was recorded by 2016/ OKHYVRES – 8 (199.2 q/ha) followed by OKHYVRES – 2 (184.5q/ha) which were significantly superior to all the entries with nil incidence of YVMV.

BRINJAL (ROUND TYPE):

- In AVT-II, among nine hybrids evaluated, the highest yield was recorded by 2016/OKHYVRES – 3 (221.0 q/ha) followed by local hybrid (208.7 q/ha)

CAULIFLOWER:



- In Cauliflower - Early AVT-II, among eight entries evaluated, the entry 2016/CAUEHYB-2 recorded significantly highest yield (177.0 q/ha).
- Cauliflower -Mid AVT-II, among nine entries evaluated, the entry 2016/CAUMHYB-1 recorded significantly highest yield (211.7 q/ha) which was at par with 2016/CAUMHYB-2 (180.0q/ha)

Non Plan: chilli varietal trial (AVT-II)

The trial was conducted with 14 entries in RBD replicated thrice. Among the entries, NGP 46 recorded highest dry chilli yield of 48.3q/ha

C) AICRP on SPICES:

PLAN EXPERIMENTS

CORIANDER

Collection, evaluation and maintenance of coriander germplasm.

Thirty five germplasm lines were evaluated in Augmented Block Design. Among the entries evaluated, LCC-316 (5.49 g plant⁻¹), LCC-319 (5.09 g plant⁻¹), LCC-336 (5.09 g plant⁻¹), LCC-343 (5.09 g plant⁻¹) and LCC-344 (4.89 g plant⁻¹) were found significantly superior in yield over the best check Suguna (2.92 g plant⁻¹).

Coordinated Varietal Trial on Coriander

During 2018-19, seventeen coded entries along with check Susthira were evaluated. Among the entries evaluated, COR-190 (2468.9 kg ha⁻¹), COR-185 (2361.6 kg ha⁻¹) and COR-174 (2351.0 kg ha⁻¹) were significantly superior to the check Susthira (1718.9 kg ha⁻¹).

FENUGREEK

Collection, evaluation and maintenance of fenugreek germplasm

Among 124 entries were evaluated along with five checks in Augmented Block Design. Among the entries evaluated, eleven entries recorded significantly higher yield than the best check LM-2 (4.87 g plant⁻¹). The top five performing entries are LFC-82 (6.27 g plant⁻¹), LFC-115 (6.19 g plant⁻¹), LFC-122 (6.11 g plant⁻¹), LFC-6 (5.95 g plant⁻¹) and LFC-14 (5.95 g plant⁻¹).

Yield of promising Fenugreek entries in germplasm evaluation trial

Entry	Yield (g plant ⁻¹)	Entry	Yield (g plant ⁻¹)
LFC-82	6.27	LM-2 (C)	4.87



LFC-115	6.19	LS-1(C)	4.07
LFC-122	6.11	PEB(C)	3.33
LFC-6	5.95	HS(C)	3.17
LFC-14	5.95	CO-1(C)	3.50
LFC-32	5.95	CD (p=0.05)	0.88
LFC-38	5.95	CV (%)	17.6

Coordinated Varietal Trial on Fenugreek

The trial was initiated with 17 coded entries along with check Lam Methi-3. Among the entries evaluated, FGK-136 (2167.8 kg ha⁻¹), FGK-135 (1949.7 kg ha⁻¹), FGK-132 (1876.5 kg ha⁻¹), FGK-137 (1856.5 kg ha⁻¹) and FGK-127 (1829.2 kg ha⁻¹) recorded significantly higher yield over the check Lam Methi-3 (1480.0 kg ha⁻¹).

AJOWAN

Coordinated Varietal Trial on Ajwain

Eleven genotypes from different coordinating centers were evaluated along with three checks in RBD replicated twice. Among the entries evaluated, highest yield was recorded with LS-14-3 (966.2 kg/ha) followed by LS-14-8 (938.4 kg/ha), AA-73 (937.8 kg/ha) and AA-6 (872.7 kg/ha) which were on par with each other and significantly superior to the best check, Lam Selection-1 (793.1 kg/ha).

TURMERIC

Collection, evaluation and maintenance of turmeric germplasm.

Forty eight genotypes were evaluated in Augmented Block Design with six checks. Among the germplasm lines evaluated, only seven entries i.e. Kasturi (665.4 g), KTS-18 (561.4 g), KTS-5 (537.4 g), CLI-328 (53.6.4 g), CL-5 (533.4 g), SLM-1 (531.4 g) and IC-211641 (527.4 g) recorded significantly higher clump weight compared to the best check Tekurpet (480.5 g).

Initial Evaluation Trial on turmeric

In IET of Turmeric, among the entries evaluated, LTS-20 recorded significantly higher yield (48.9 t/ha) followed by GLP-2 (41.9t/ha), PTS-4 (37.7 t/ha), CL-15 (36.8 t/ha) and AC-94 (34.8 t/ha) which were on par with each other and significantly superior to the best check Mydukur (29.6 t/ha).

Coordinated Varietal Trial on Turmeric

Twelve entries from different coordinated centres were evaluated along with three checks and two local entries. Among the entries evaluated, LTS-2 (37.8 t ha⁻¹) recorded maximum yield followed by LTS-4 (36.6 t ha⁻¹, local entry), LTS-3 (36.5 t ha⁻¹, local entry) and LTS-1 (33.54 t ha⁻¹), which were significantly superior to the check Mydukur (31.1 t ha⁻¹).



NON PLAN EXPERIMENTS IN SPICES

Development of varieties through mutation and hybridization in Coriander

F1 progeny of the cross between Susthira and Hisar Anand was raised for advancing to F2 evaluation during 2019-20.

Collection, evaluation and maintenance of ajowan germplasm.

One hundred and one entries were evaluated. Among the germplasm evaluated, eleven entries recorded significantly higher yield than the best check LTa-26 (24.02 g/plant). These entries are LTA-56, LTA-53, LTA-39, AA-18, LTA-58, AA-2, AA-37, AA-3, AA-22-2, LS-14-8-1 and AA-56. Among the selections, only S-15, S-13, S-15-16 and S-10 recorded significantly higher yield than the best check LTa-26.

Evaluation of M1V2 generation cv. Prathibha for identification of superior clones.

Thirty three M1V3 lines were evaluated. Among these, thirteen promising lines were identified based on per se performance in comparison with control Prathibha.

Table 39. Promising selections from M1V3 generation of cv. Prathibha

S. No.	Line	No. of mother rhizomes	Weight of mother rhizome (g)	Weight of single mother rhizome (g)	No. of primary rhizomes	Weight of primary rhizomes (g)	Weight of single primary rhizome (g)	Clump weight (g)
1	T3-17-3	5.2	142	27.3	8.2	220	26.8	484
2	T3-17-4	5	156	31.2	10	308	30.8	546
3	T3-17-5	5.6	164	29.3	10	242	24.2	490
4	T3-17-6	3.6	162	45.0	15	280	18.7	540
5	T4-17-2	4.8	132	27.5	14.6	290	19.9	520
6	T4-17-3	4.4	116	26.4	18	412	22.9	654
7	T5-17-1	4.6	130	28.3	14.8	284	19.2	630
8	T6-17-1-2	5.4	134	24.8	13.4	274	20.4	574
9	T6-17-2-2	4.8	116	24.2	13.2	246	18.6	474
10	T6-17-3-1	5.2	116	22.3	21.6	394	18.2	622
11	T6-17-6	4.4	108	24.5	14.8	302	20.4	514
12	T7-17-5	4	120	30.0	10	258	25.8	454
13	T8-17-3	5.8	120	20.7	12.4	304	24.5	534
14	Check (Prathibha)	4.3	112	27.0	13.9	263	19.4	471

Effect of metabolite elicitors on growth, yield and quality of turmeric.



The trial was laid out for the first year experimentation. Among the effect of elicitors on yield, both the elicitors were on par. Among the effect of spray schedules on yield, the spray schedule at 120 DAS followed by spraying at either 150 DAS or 180 DAS was effective. Among the elicitor and spray schedule interaction effects on yield, maximum yield was recorded with spraying chitosan 100 ppm at 120 and 150 DAS which was on par with spraying chitosan 100 ppm at 120 and 180 DAS, and salicylic acid 100 ppm at 120 and 150 DAS or spraying salicylic acid 100 ppm at at 120 and 180 DAS.

MEDICINAL & AROMATIC PLANTS

MAP & Betelvine

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Among the twenty nine accessions of *Acorus calamus* evaluated, TNAc-8 (64.10 cm) recorded highest plant height, while more number of leaves was recorded in APAc-16 (22.00). Leaf length was highest in APAc-2 (58.83 cm) and leaf width was highest in APAc-2 (2.17 cm). Estimation of beta asarone percentage revealed lowest percentage of 7.89% in APAc-17 followed by 8.55% in Gubbi whereas highest beta asarone percentage of 57.22 % was recorded in APAc-2 followed by 34.43% in Symbolia. Maximum number of **lets** was recorded in TNAc – 9 (13.00) followed by TNAc-12 (12.00 cm). Rhizome weight was maximum in APAc- 14 (116.00 g) followed by APAc-13Ac - 9 (98.0 g).
- In performance of *Acoruscalamus* under MLT trial, four different accessions along with a check (Symbolia) were tested. No significant difference was observed between all the accessions in case of growth parameters except for leaf length where APAc-5 recorded maximum leaf length of 37.88 cm that is on par with APAc-2 and APAc-4. APAc 2 recorded maximum rhizome length (40.28) which was on par with APAc -5 (39.20). APAc – 5 recorded maximum rhizome width (5.28 cm), rhizome weight (68.85 g) and plot yield (3.718 kg) which is on par with APAc -2.
- Forty five accessions of *Solanum nigrum* are maintained, and were evaluated for their morphological and agronomical traits. TNSn-50 exhibited purple streak in flower corolla, the character as reported by TNAU was found stable under multi-location testing. Distinct characters like plants bearing red berries with erect growing habit and streak in flower petal were identified and recorded with Accession APSn-25 collected from Shankarghat, UP.
- Among forty five accessions of *Solanum nigrum*, highest plant height was recorded in APSn-22 (110.25 cm), maximum number of branches in APSn-13 (30.01), while stem girth was highest in APSn-25 and TNSn-23 (4.10cm). Leaf length was maximum in APSn-12 (5.23 cm) while leaf breadth was highest in TNSn-50 (4.00cm). APSn-25 recorded highest herbage yield (11.17 kg/plot) while TNSn-12 recorded lowest yield (0.41 kg/ plot).
- In performance of makoi(*Solanum nigrum*) under MLT trial, four different accessions were tested at three dates of harvesting. Plant height was maximum in T₄ (45.99 cm) which is on par with T₁ at 45 DAP whereas it was non significant at 90 DAP while maximum plant height of 33.87 cm was recorded with T₁ at 135 DAP. Maximum primary branches (11.40) was recorded in T₂ which is on par with T₃ and T₄ at 45 DAP, T₃ (10.8) during 90 DAP and



was on par with T₂ and T₄. Plant spread in E-W direction was maximum in T₃ (30.21 cm) at 45 DAP and T₁ (25.14 cm) at 135 DAP. Plant spread in N-S direction was maximum in T₁ (31.35 cm) at 90 DAP. T₁ recorded highest fresh and dry herbage yield of 66.97 kg/ha and 13.48 kg/ha respectively at 45 DAP while it was T₄ with 37.49 kg/ha and 7.65 kg/ha respectively at 90 DAP and T₂ with fresh herbage yield of 28.99 kg/ha and dry herbage yield of 7.58 kg/ha at 135 DAP.

- In performance of lalchitrak (*Plumbago rosea*) under MLT trial, plant height was highest in TCR PR 521 with 105.34 cm whereas number of roots/plant was found to be maximum in TCR PR 51 (25.76). The entry AGNI recorded maximum number of branches (22.92), root length 958.02 cm, root girth 93.02 cm, fresh weight of roots (225.2 g) and dry weight of roots (68.0 g).
- In performance of mucuna (*Mucuna pruriens*) under MLT trial, five different accessions along with a check from CIMAP were tested. The entry T1 recorded maximum inflorescence length (7.322 cm), number of flowers per inflorescence (9.51), maximum number of pods per branch (6.75) and pod width (2.02 cm). Pod length and number of seeds per pod were found to be non significant among the entries. The weight of 10 dried pods was found to be significantly superior in T1 (54.02 g). Pod yield was found to be maximum in T5 (502.05 kg/ha) while seed yield was maximum in T6 (250.14 kg/ha).
- Among different betelvinehybrids tested at Venkataramannagudem, Swarna Kapoori recorded significantly highest vine length of 215.23 cm and highest number of branches (10.00). Hy-06-04 recorded maximum stem girth of 2.50 cm and significantly lowest internodal length of 4.17 cm was recorded in Hy-06-11. Karapaku recorded significantly highest leaf length of 13.03 cm and highest leaf width of 9.43 cm which was on par with GN Hybrid. Significantly highest yield (94.0 leaves per vine) was recorded in Swarna Kapoori.

PLANTATION CROPS

COCONUT

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Gen.1: Conservation and evaluation of coconut genetic resources in different agro-climatic regions

Expt.2: Collection, conservation and evaluation of location specific germplasm

Thirteen local elite germplasm accessions were collected from traditional coconut growing districts viz Srikakulam, East and West Godavari districts of AP and raised the seedlings. The experiment was laid out during February 2013. Out of 13 accessions, five viz ECT Green (CRP 752), Jonnalarasi Brown (CRP 750), Pillalakodi Green (CRP 747), Pillalakodi Brown (CRP 748) and Gangbondam (CRP 751) were planted in RBD with 4 replications @ 4 palms/replication and remaining eight accessions viz. Jonnalarasi Green, ECT Brown (CRP 753), (IC No.610312) Itikulagunta ECT Big (CRP 756, IC No.610315), Itikulagunta ECT Small, (CRP 831), Saradapuram ECT (CRP 755 ; IC No.610314), Srikakulam ECT (CRP 754), IC No.610313)Vemulapalli ECT Big(CRP 832),



Vemulapalli ECT Small (CRP833) were planted as an observational trial @ 6 palms per accession and they are in vegetative to bearing stage.

Observations on growth attributing characters were recorded and significant differences were noticed among different accessions for girth, total leaf length and petiole length. Significantly highest girth (120.9 cm and 120.6 cm) was observed in Jonnalarasi Brown and ECT Green, respectively whereas Pillalakodi Brown recorded the highest petiole length (167.7 cm). With regards to flowering, Gangabondam was the earliest to flower in 37 months followed by Pillalakodi Brown (50 months) and Pillalakodi Green (51 months). A significantly higher number of 123.5 nuts/palm/year was recorded in PillalakodiGreen followed by Pillalakodi Brown (122.5 nuts) and Jonnalarasi Brown (112.75 nuts) and were observed to be at par. (Table.1)

Table. 1: Growth attributing characters of location specific coconut germplasm.

Treatments/ Accessions	Plant height (cm)	Girth (cm)	Annual leaf production	Number of functional leaves	Total Leaf length (cm)	Petiole length (cm)	Days to flowering (months)	No. of nuts per annum
ECT Green (CRP 750)	123.9	120.6	13.4	28.0	362.2	156.0	54	58.25
Jonnalarasi Brown (CRP 748)	127.5	120.9	13.1	27.2	352.9	163.2	52	112.75
Pillalakodi Green (CRP 745)	142.5	117.5	13.8	29.1	356.7	155.1	51	123.50
Pillalakodi Brown (CRP 746)	133.7	114.0	13.4	28.0	366.2	167.7	50	122.50
Gangabondam (CRP 749)	76.2	73.5	14.2	29.9	295.1	124.8	37	37.50
S.Em±	14.9	5.0	0.1	0.6	12.4	3.8	--	4.25
CD (P=0.05)	N.S	15.8	0.4	N.S	38.9	11.9	--	13.12

Reaction to pests and diseases:No disease incidence was observed. However the incidence of pests particularly rhinoceros and red palm weevil was noticed. Rhinoceros leaf damage ranged from 10.47% (Gangabondam) to 16.04% (Pillalakodi Brown), while the incidence of eriophyid mite was mild (Jonnalarasi Brown) to moderate (remaning all accessions).

Expt. 3: Evaluation of elite germplasm

Inter se crossed seed nuts of above entries were received from CPCRI, Kasaragod during May, 2014 and the seedlings were raised in poly pots. The experiment was planted in March, 2016 and it is in vegetative stage. Regarding growth parameters, the lowest plant height of 579.4 cm was recorded in East coast tall while the highest plant height of 725 cm was recorded in St. Vincent Tall. However, no significant differences were noticed among the elite germplasm selections for girth, annual leaf production and total leaf length. A significantly highest petiole length (166.6cm) was recorded in Verikobbari Tall.



Gen. 2: Evaluation of coconut Hybrids in different agro climatic regions

Expt 2: Evaluation of new coconut hybrids of location specific cross combinations

The experiment consisting of cross combinations viz., ECT X Cochin China, GBGD X Cochin China, ECT X PHOT, GBGD X PHOT, PHOT X GBGD and ECT X GBGD were planted in June 2011 in randomized block design with four replications. Some of the accessions were badly affected due to Helen and Philin cyclonic rains during October & November 2013. Gap filling was done during February 2014 and the experiment is in bearing stage.

Growth and yield attributing characters of new coconut hybrids revealed that the cross combination ECT X PHOT recorded significantly highest girth (126.7 cm) and highest leaf length (383.6cm). PHOT x GBGD recorded minimum number of days to first flowering, i.e. 45 months after planting followed by GBGD x Cochin china (46 months). With regards to nut yield, the cross combination GBGD x PHOT has recorded the highest yield (94.7 nuts/palm/year) and it was on par with PHOT X GBGD(90.7 nuts/palm/year), ECT x PHOT (89.2 nuts/palm/year), ECT X Cochin China (88.7 nuts/palm/year) and GBGD x Cochin China (87.8 nuts/palm/year) (Table.3). The cross combinations showed no significant differences for other growth characters (Table.4)

Table. 4: Growth and yield attributing characters of new coconut hybrids

Treatments	Plant height (cm)	Girth (cm)	Annual leaf production	No. of functional Leaves	Leaf length (cm)	Petiole length (cm)	Age at first flowering (months)	No. of nuts per annum
ECT X Cochin China	168.6	116.7	13.4	31.0	380.1	174.7	52	88.7
GBGD X Cochin China	104.7	101.4	12.1	27.9	296.6	158.3	46	87.8
ECT X PHOT	184.6	126.7	12.7	28.7	383.6	165.1	53	89.2
GBGD X PHOT	141.5	105.2	11.9	29.2	347.7	149.9	49	94.7
PHOT X GBGD	175.6	94.0	13.0	31.9	372.3	153.2	45	90.7
ECT X GBGD	178.4	94.3	14.1	34.7	374.2	157.8	48	82.3
S.Em ₊	21.9	10.0	0.6	1.6	13.7	6.8	--	2.37
CD (P=0.05)	N.S	3.3	N.S	N.S	41.9	N.S	--	7.17

Reaction to pests and diseases:No disease incidence was observed. However, the incidence of pests particularly rhinoceros beetle and redpalm weevil was noticed. Per cent leaf damage by rhinoceros beetle was maximum (13.68) in GBGD X PHOT and minimum in PHOT X GBGD (6.45). while the per cent spindle damage was 4.16 in ECT X Cochin china and GBGD X PHOT. However, the incidence of eriophyid mite was moderate in the all the cross combinations.

Expt.3: Evaluation of released varieties in coconut



The experiment was laid out with nine released coconut hybrids/varieties during 2002 in randomised block design with three replications @ 6 palms/replication and are being evaluated.

Among different hybrids and varieties evaluated, Double Century recorded highest girth (115.4cm) and VHC-1 recorded significantly maximum length of 10 internodes(101.9 cm).

Godavari Ganga recorded significantly highest yield /palm/year (164.9 nuts) followed by Laksha Ganga (160.4 nuts) and Kera Ganga (160.3 nuts). Highest nut weight was recorded in Double century (1459.5 g) followed by VHC-2 (1360.5 g) and Godavari Ganga (1342.8 g) which were found at par. Significant differences were observed for tender nut water content and the highest quantity was recorded in Double Century (416 ml) followed by Godavari Ganga (363 ml) and VHC-2 (360 ml). Significant differences were observed for copra content among different entries and the maximum copra content was recorded in Double century (174.1 g) followed by VHC-2 (173.1g) and Chandra Sankara (172.3 g).

Table. 6: Performance of released hybrids and varieties with respect to growth and leaf characters

Treatments	Palm Height (m)	Girth at 1m height (cm)	Functional leaves on the crown	Leaf length (m)	Petiole length (m)	Length of 10 internodes(cm)
Chandra Sankara	8.2	108.0	34.0	5.4	1.3	98.3
Chandra Laksha	8.7	99.7	35.5	5.6	1.3	94.2
VHC-1	8.6	105.9	35.2	5.6	1.3	104.1
VHC-2	8.9	111.9	35.6	5.4	1.2	96.8
Kera Ganga	8.2	95.0	34.7	5.7	1.3	94.4
Laksha Ganga	8.2	108.1	34.1	5.4	1.3	94.7
Double Century	8.1	117.4	34.3	5.6	1.3	99.1
Godavari Ganga	7.5	92.1	35.9	5.4	1.3	75.9
Chandra Kalpa	8.5	108.7	33.8	5.6	1.3	101.2
S.Em±	0.4	4.5	0.8	0.1	0.04	4.7
CD (P=0.05)	N.S	13.77	N.S	N.S	N.S	14.3

Table. 7: Performance of Varieties/Hybrids for yield attributes

Treatments	Fruit length (cm)	Fruit breadth (cm)	Fruit weight (g)	Dehusked nut weight (g)	Shell weight (g)	Husk thickness (cm)	Kernel thickness (cm)	Nut colour	Nut shape
Chandra Sankara	23.1	17.3	1308.3	597.2	199.4	1.7	2.1	Brown	Oval
Chandra Laksha	21.5	15.5	1210.8	577.7	184.9	1.4	1.9	Brown	Oval
VHC-1	18.1	13.0	827.7	385.6	137.1	1.3	1.8	Green	Oval
VHC-2	22.6	16.8	1360.5	598.1	191.5	1.5	2.1	Green	Oval
Kera Ganga	20.1	15.2	1190.8	541.2	156.1	1.6	2.1	Green	Oval
Laksha Ganga	21.8	15.9	1049.3	507.5	160.5	2.1	1.9	Green	Oval



Double Century	20.4	18.0	1459.5	637.8	199.3	2.1	1.9	Green	Round
Godavari Ganga	22.4	16.1	1342.8	614.1	177.3	1.4	2.1	Brown	Oval
Chandra Kalpa	23.1	14.8	1116.4	503.1	156.5	1.7	1.9	Green	Oval
S.Em₊	1.0	0.6	75.84	60.0	19.4	0.1	0.06	--	--
CD at 5%	N.S	1.8	227.39	N.S	N.S	N.S	N.S	--	--

Table 8: Performance of Varieties/Hybrids for yield parameters

Treatments	Number of bunches per annum	Number of nuts harvested per annum	Copra content (g/nut)	Oil content (%)	Bearing habit
Chandra Sankara	13.7	145.5	172.3	62.5	Regular
Chandra Laksha	10.1	150.8	158.7	62.2	Regular
VHC-1	13.8	152.1	123.8	57.5	Regular
VHC-2	14.2	156.7	173.1	57.6	Regular
Kera Ganga	13.8	160.3	140.0	61.4	Regular
Laksha Ganga	14.7	160.4	138.1	60.6	Regular
Double Century	13.9	139.8	174.1	62.1	Regular
Godavari Ganga	15.2	164.9	160.5	66.3	Regular
Chandra Kalpa	13.5	148.8	140.5	62.2	Regular
S Em₊	1.5	3.81	8.47	3.69	---
CD (P=0.05)	N.S	11.43	25.40	N.S.	---

Table 9: Performance of Varieties/Hybrids for Tender nut parameters

Treatments	Water content (ml)	Sweetness of water	Taste of tender nut endosperm
Chandra Sankara	320	Good	Good
Chandra Laksha	340	Good	Good
VHC-1	300	Good	Good
VHC-2	360	Average	Average
Kera Ganga	310	Good	Good
Laksha Ganga	340	Good	Good
Double Century	416	Good	Good
Godavari Ganga	363	Good	Good
Chandra Kalpa	300	Good	Good
S Em₊	10.12	--	--
CD (P=0.05)	30.34	--	--

Reaction to pests and diseases: No incidence of diseases and redpalm weevil was observed. However, the incidence of pests particularly rhinoceros beetle and eriophyid mite was noticed. A high per cent leaf damage (13.79) by rhinoceros beetle was recorded on VHC-1 and lowest was recorded on Chandra Kalpa (2.77). However, the per cent spindle damage was 5.55 in Chandra Sankara, VHC-1 and Double Century while Laksha Ganga had a high per cent spindle damage (11.78). Further, eriophyid mite damage was high in Chandra Sankara and Double Century. A mild mite intensity was noticed on Kera Ganga and Godavari Ganga.



Expt. 4: Evaluation of Tall x Tall coconut hybrids

Seed nuts of six cross combinations viz., LCOT x ADOT, ADOT x ECT, BGR x ADOT, ECT x LCOT, WCT x TPT, ECT x ECT were received from CPCRI, Kasaragod and the seedlings were raised and laid out the experiment as per technical programme. However, due to Helen and Philin cyclones in 2013, some of the accessions were severely affected. Gap filling has been done during February 2014 and the experiment is in bearing stage and being maintained by adopting standard package of practices.

Significant differences were recorded for plant height and girth and the lowest plant height was recorded in ADOT X ECT cross combination with 159.0 cm while the highest plant height was recorded in BGR X ADOT (184.9 cm). However, the maximum stem girth was recorded in the cross combinations, BGR X ADOT (127.6 cm) and ADOT X ECT (127.1 cm). The cross combination, BGR x ADOT recorded highest number of inflorescences and nut yield per palm i.e.13.0 and 81.5 per palm, respectively followed by WCT x TPT (12.1 and 62.2 nuts/palm/year, respectively).

Table. 11: Growth attributing characters of Tall x Tall hybrids of coconut

Treatments	Plant height (cm)	Girth (cm)	Annual leaf production	Number of functional Leaves	Total leaf length (cm)	Petiole length (cm)	No.of inflo re-scences	No. of nuts/annu m
LCOTXADOT	226.7	111.5	13.1	32.8	384.6	164.1	11.0	59.1
ADOT X ECT	159.0	127.1	13.8	29.1	346.7	159.4	9.6	51.6
BGR X ADOT	184.9	127.6	13.4	31.3	368.7	174.1	13.0	81.5
ECT X LCOT	181.5	121.7	12.9	28.7	354.8	162.3	9.1	59.2
WCT X TPT	240.7	109.3	13.6	31.6	391.3	164.8	12.1	62.2
ECT X ECT	180.0	116.0	12.5	30.0	374.5	165.0	10.0	61.6
S.Em+	17.1	3.91	0.59	1.48	10.3	4.6	0.98	1.47
CD (P=0.05)	52.1	11.9	N.S	N.S	N.S	N.S	2.97	4.30

Expt. 5: Evaluation of location specific Tall x Tall coconut hybrids.

The seed nuts of seven cross combinations viz., Java Tall x ECT, PHOT x ECT, Fiji Tall x ECT, Laccadive Ordinary x ECT, ECT x PHOT, Cochin China x ECT, ECT x Fiji Tall were received from CPCRI and raised the nursery and the experiment was planted in August 2011 as per technical programme. Due to Helen and Philin cyclones in the year 2013, some of the accessions were damaged and the gap filling has been done during the month of February, 2014 and the experiment is in bearing stage.



Plant height was found to be highest in Java Tall X ECT (216.2 cm) followed by ECT X Fiji Tall (214.1cm) while the lowest plant height of 144.5 cm was recorded in check (ECT X ECT). With respect to plant girth the maximum girth was recorded in PHOT X ECT (132.7 cm) followed by ECT X ECT (121.9 cm). Minimum girth was recorded in LCOT x ECT (100.4 cm). Annual leaf production, number of functional leaves, total leaf length, petiole length were found to be non significant. Further, significant differences were recorded for yield attributes like number of inflorescences, number of buttons and nut yield per palm. A significantly higher nut yield of 85.7 nuts per palm per year was recorded in ECT X PHOT followed by ECT X ECT (82.6 nuts) and ECT X Fiji Tall (81.7 nuts).

Table. 12: Growth attributing characters of Tall x Tall hybrids of coconut

Treatments	Plant height (cm)	Girth (cm)	Annual leaf production	Number of functional Leaves	Total leaf length (cm)	Petiole length (cm)	No. of inflorescences	No. of buttons	Average no. of spikes	No. of nuts/annum
Java Tall x ECT	216.2	111.7	13.3	30.3	382.7	161.3	10.0	18.8	327.2	70.0
PHOT x ECT	196.2	132.7	13.3	30.3	373.7	161.9	9.9	10.2	286.2	58.1
Fiji Tall x ECT	150.1	117.9	12.9	29.2	367.4	162.7	9.1	11.8	237.6	60.3
LCOT x ECT	177.2	100.4	13.3	31.1	361.5	157.8	14.5	16.3	260.8	71.9
ECT x PHOT	176.9	114.4	13.6	30.8	388.7	166.8	11.5	28.0	318.1	85.7
Cochin China x ECT	199.8	114.2	13.5	31.8	400.5	165.5	9.5	17.1	302.4	59.1
ECT x Fiji Tall	214.1	109.9	13.4	31.5	390.3	161.1	16.5	25.4	316.2	81.7
ECT x ECT	144.5	121.9	13.2	29.7	346.4	155.1	15.6	12.1	292.9	82.6
S.Em±	7.59	4.1	0.2	0.9	12.0	5.7	0.61	1.28	33.8	4.74
CD (P=0.05)	23.02	12.6	N.S	N.S	N.S	N.S	1.86	3.87	N.S	14.39

Reaction to pests and diseases: No incidence of diseases was observed. However, the incidence of pests particularly Redpalm weevil, rhinoceros beetle and Eriophyid mite were noticed. Per cent leaf damage by rhinoceros beetle was ranged between 5.72 (PHOT X ECT) and 17.65 (Cochin china X ECT). While Eriophyid mite damage was moderate in all cross combinations.

Expt. 6: Evaluation of Dwarf x Dwarf coconut hybrids in different agro climatic

The experiment was planted in 2011. However, due to Helen and Philin cyclones in 2013, some of the accessions were died. Gap filling was done with planting material received from CPCRI, Kasaragod in March, 2014. However, initiated production of COD X MYD seed



nuts in 2015 and seed nuts were harvested in 2016. These seedlings were raised in polypots during 2017 and the selected seedling were planted in experimental plot in 2018. These seedling were established in the field and are in vegetative stage. Further, the other cross combinations of the experiment are in bearing stage. The data pertaining growth attributes and nut yield recorded showed that the mean lowest plant height was recorded in GBGD X GBGD (106.6 cm) and the maximum was recorded in COD X MGD (180.6 cm) while the maximum stem girth was recorded in MYD X CGD cross (99.4 cm) followed by COD X MGD (88.3 cm). The maximum nut yield (89.2 nuts/palm/annum) was recorded in COD X MGD cross combination followed by GBGD X MOD (81.7 nuts/palm/annum). The mean tender nut water content was high in GBGD X MOD (473.3 ml) followed by CGD X MGD (438.3 ml).

Table.14: Growth and yield attributing characters of Dwarf x Dwarf coconut hybrids

Treatments	Plant height (cm)	Girth (cm)	Annual leaf production	Number of functional leaves	Total leaf length (cm)	Petiole length (cm)	No. of nuts/annum
*COD X MYD	-	-	-	-	-	-	-
COD X MGD	180.6	88.3	13.9	29.5	345.5	164.0	89.2
MYD X CGD	163.0	99.4	13.9	13.9	364.7	157.3	57.8
GBGD X MOD	134.5	84.8	14.4	14.4	321.4	141.6	81.7
CGD X MGD	158.5	79.8	13.5	13.5	336.8	151.6	46.7
GBGD X GBGD	106.6	78.0	13.9	13.9	296.9	129.5	41.2

*Seedlings damaged due to Helen and Philin cyclones (2013) were replanted during 2018.

Table.15: Performance of Dwarf x Dwarf coconut hybrids for tender nut water

Treatments	Water content (ml)	T.S.S. (° Brix)	Sweetness of water	Taste of tender nut endosperm
COD X MYD	-	-	-	-
COD X MGD	331.3	6.7	Good	Good
MYD X CGD	404.5	7.3	Good	Good
GBGD X MOD	473.3	5.4	Average	Good
CGD X MGD	438.3	6.4	Good	Good
GBGD X GBGD	412.4	6.3	Good	Good

Reaction to pests and diseases:No incidence of diseases was observed. However, the incidence of pests particularly Redpalm weevil, rhinoceros beetle and Eriophyid mite were noticed. MYD X CGD and GBGD X MOD had low (7.14) and high (13.34) per cent leaf damage, respectively while the per cent spindle damage was 4.16 in MYD XCGD, CGD X MGD and GBGD X GBGD cross combinations. Further, eriophyid mite damage was mild in GBGD X GBGD and the remaining cross combinations had a moderate mite intensity.



Gen. 3: Establishment of mother palm blocks and production of quality planting materials in coconut.

Activity 1: Evaluation of released coconut varieties in different agro-climatic regions

During the period under report, the observations revealed that lowest minimum plant height of 159.7 cm was recorded in Gautami Ganga and the maximum plant height of 273.3 cm was recorded on Konkan Bhatye Coconut Hybrid-1. KalpaSamrudhi recorded highest nut yield of 135.0 nuts/palm/year followed by Kalpa Mitra (128 nuts/palm/year) and Konkan Bhatye (120.3 nuts/palm/year).

Table.17: Growth attributing characters of released varieties of coconut

Treatments	Plant height (cm)	Girth (cm)	Annual leaf production	Number of functional leaves	Total Leaf length (cm)	Petiole length (cm)	No. of inflorescences	Average no. of spikes	Yield/plam/year
Kalyani Coconut - 1	198.9	115	14.3	31.6	363.2	169.5	11.2	321	105.9
Gautami Ganga	159.7	84.6	12.6	32	307.2	141.6	14.7	563.3	78.7
Konkan Bhatye Coconut Hybrid-1	273.3	95.8	13.4	33.5	390.4	172.1	13.4	455.1	120.3
Kera Keralam	192.4	118.1	12.9	30.6	333.8	164.2	9.6	385.1	105.4
Kera Bastar	251.8	122.8	14.1	32.2	371.9	184.2	13.8	384.3	103.4
KalpaSamrudhi	144.7	111.0	13.2	30.7	343.3	163.3	12.2	440.2	135.0
KalpaPrathiba	235.4	124.4	14.7	32.6	425.0	177.9	12.4	331.9	112.8
Kalpa Mitra	238.3	107.4	15.0	34.0	413.6	173.3	14.5	337.3	128.0
Kalpa Raksha	165.4	104.7	14.1	29.5	318.8	132.4	12.3	285.8	78.7
KalpaDhenu	228.5	112.0	14.5	32.3	372.7	172.5	11.7	308.3	105.4

Reaction to pests and diseases:

No incidence of diseases and Redpalm weevil was observed. However, the incidence of pests particularly rhinoceros beetle and eriophyid mite were noticed. High per cent leaf damage of 14.5 was recorded in Kera Bastar and Kalpa Pratibha and low per cent leaf damage (3.12) was recorded on KalpaDhenu. Further, eriophyid mite damage was mild in KalpaSamrudhi, Kalpa Mitra and KalpaDhenu. While Kalyani coconut-1, Konkan Bhatye coconut Hybrid-1 and Kera Keralam were moderate in reaction towards mite infestation. Further, the mite intensity was recorded as high in Gautami Ganga, Kera Bastar, Kalpa Pratibha and Kalpa Raksha.

Expt. 2: Nucleus seed gardens for released varieties

Under this project multiplication of Gautami Ganga, Kera Bastar and KalpaPrathiba was allotted for Ambajipet center. During 2013-14, the *inter se* crossed seedlings of Gauthami Ganga (300 nos.) and KalpaPrathibha (150 nos.) were planted at Horticultural Research Station,



Ambajipeta for future production of quality planting material. However, instead of Kera Baster variety Double century (PHOT) plantation was maintained to take up the production of newly released coconut hybrid Vasishta Ganga (GBGD X PHOT) and Vainateya Ganga (PHOT X GBGD) and large scale production of Godavari Ganga (ECT X GBGD) and Gautami Ganga (a selection of GBGD).

Cocoa/ Gen.5: Evaluation of cocoa clones/Hybrids

Experiment1: Performance of cocoa varieties/Hybrids as inter crop in coconut gardens:

Six cocoa clones *viz.*, VTLCC – 1, VTLCH – 1, VTLCH – 2, VTLCH – 3, VTLCH – 4, VTLC – 1 (Control) were planted in November, 2008, in RBD with four replications and gap filling was done during December 2012 and are being evaluated for their performance. No significant differences were observed for growth attributes like girth, height at first branching, and canopy spread (Table 28). With respect to yield VTLCH-2 recorded higher dry beans per plant (2.1 kg) and was at par with VTLCC-1 & VTLCH-4 (1.8 kg/tree). Further number of beans per pod was also highest in VTLCH-2 (39.7 gm) followed by VTLCH-4 (38.7 gm) (Table 29).

Table.28: Performance of cocoa clones for growth parameters:

Treatments	Plant height (cm)	Girth (cm)	Height at 1 st branching (cm)	Canopy spread	
				E-W (cm)	N-S (cm)
VTLCC – 1	316.7	30.9	64.5	435.9	408.4
VTLCH – 1	289.4	34.1	75.1	493.8	467.3
VTLCH – 2	325.3	32.7	70.8	460.9	420.5
VTLCH – 3	285.1	32.2	70.0	476.4	442.1
VTLCH – 4	330.8	31.3	60.2	459.8	451.3
VTLC-1	306.2	30.7	64.5	470.6	438.9
S Em \pm	15.7	1.4	4.77	19.5	16.0
CD at 5%	N.S	N.S	N.S	N.S	N.S

Table.29: Yield characteristics of cocoa clones

Treatments	Pod weight (g.)	No. of beans per pod	Dry bean yield/tree/year
VTLCC – 1	435.3	34.2	1.8
VTLCH – 1	351.7	34.5	1.6
VTLCH – 2	407.5	39.7	2.1
VTLCH – 3	421.7	37.5	1.7
VTLCH – 4	390.2	38.7	1.8
VTLC-1	352.4	29.9	1.4



S Em \pm	14.09	4.4	0.11
CD at 5%	42.48	N.S	0.33

B.CROP PRODUCTION

FRUITS

HORTICULTURAL RESEARCH STATION, KOVVUR

Enhancing the input use efficiency in banana

In plant crop, among the different treatments, T₁ (Drip irrigation + Fertigation (Based on STCR equations developed at NRCB-75% of worked out NPK) with 80% ER + Micro nutrient foliar spray (Banana Shakti-formulated by NRCB-2% spray at 4, 5 and 6 MAP) + Bunch spray of SOP (2%) + Polythene mulching) has recorded less number of days to shooting (174.40 days). Significant differences were recorded for growth parameters like plant girth, number of leaves and leaf area among the treatments. Maximum plant girth (61.15 cm), number of leaves (12.45) and leaf area (14.80 m²) were recorded in T₁ which was on par with T₂ (Drip irrigation + Fertigation (Based on STCR equations developed at NRCB-75% of worked out NPK) with 80% ER + Micro nutrient foliar spray (Banana Shakti-formulated by NRCB-2% spray at 4, 5 and 6 MAP) + Bunch spray of SOP (2%)) and T₃ (Drip irrigation + Fertigation (Based on STCR equations developed at NRCB-75% of worked out NPK) with 80% ER + Micro nutrient foliar spray (Banana Shakti-formulated by NRCB-2% spray at 4, 5 and 6 MAP)) while minimum was recorded in T₅ (Control: soil application of region specific RDF + Flood irrigation) (50.23 cm, 8.50 and 9.97 m² respectively).

Assessment of phenology, productivity and incidence of insect pest and disease in banana grown under varying climatic conditions.

Leaf spot disease incidence was common in all varieties in all months, but more severe in rainy season. Rhizome rot severity depends upon time of planting. Generally infestation was more during vegetative phase.

Effect of different weedicides on the growth and yield of Banana

Among all the treatments, T₆ (Control: No weeding) has recorded maximum number of weed population/m² (73.33) and fresh & dry weights of the weeds population which was on par with treatments T₃ (Quizalofop ethyl (40, 80,120 days after planting @ 50g ai/ha) and T₄ (Propaquizafop (40, 80,120 days after planting) 50g ai/ha). Treatment T₈ (Complete manual weeding) has recorded lowest weed population/m² (18.66) and fresh & dry weights of the weeds population in banana cv. Karpurachekkerakeli.

Among the different treatments, there was no significant difference observed with respect to hands/bunch, fruit length, fruit width in banana cv. KC Keli. However, there were significant differences observed for yield per plant among the treatments. Significantly highest bunch weight was recorded in T₁ (Butachlor (1-2 days immediately after planting) + Glyphosate



(40, 80, 120 days after planting 1kg ai/ha) (23.60 kg/plant) which was on par with T₇ (Butachlor (1-2 days immediately after planting) + Manual weeding at 40 days interval up to 6 MAP) & T₈ (Complete manual weeding) treatments. Highest B: C ratio of 2.74 was observed in the same treatment i.e. T₁.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

AICRP on Fruits :

- An experiment on Canopy management under high density planting in sapota revealed that maximum canopy volume (151.42 m³) and maximum yield per tree (32.6 kg/tree) was recorded in 10 X 10m whereas highest yield per hectare (6.1t/ha) was recorded in 6 X 6 m with gap of 1m between the trees.
- To standardize the stage wise nutrient requirement of sapota, trees applied with NPK in the ratios of 32-4-20, 16-0-20, 16-40-20 and 16-0-20 during July, September, November and February respectively resulted in highest canopy volume (568.14 m³) and number of fruits (2256.25).
- Studies on residual and cumulative effect of nutrients on sapota revealed non significant results for both growth and yield parameters.

MANGO RESEARCH STATION, NUZVID

HORTICULTURE

- Mango grafts were planted during July, 2013. Maximum plant height of 3.71 m and plant spread of 4.09m, 4.23m in E-W & N-S directions was recorded under 10x10 m spacing.
- Mango grafts were planted during July, 2013. Treatments were imposed during 2015. Growth data revealed that maximum plant height of 2.67m and plant spread of 2.98m, 3.32m in E-W & N-S directions was recorded when plants applied with 100% of recommended dose of fertilizer.
- Osmotic dehydration of mango was done at 60⁰B, 65⁰B, 70⁰B, 75⁰B along with 0.1 and 0.2% citric acid and dried the pieces in tray drier at 60⁰c. Results revealed that 70⁰B and 0.1% citric acid was suitable for osmotic dehydration of mango cv. Baneshan and the recovery was 35%.
- Amchur (dry mango powder) preparation was done by using five varieties of mango (Chinnarasam, Nallarasam, Totapuri, Neelum and Local) under 3 different drying methods (sun, solar and tray drying methods). Chinnarasam variety dried in tray drier at 60⁰c yielded good quality amchur (acidity, ascorbic acid, total sugars and reducing sugars). The recovery percentage was 14.

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

1.Effect of manures on growth and yield of Turmeric in the agency areas of East Godavari district



Among the treatments plant height was highest (94cm) in vermicompost + Sheep manure T6 and lowest (61 cm) in control which were significantly different. Number of leaves per plant was highest (8.5) in T6 and lowest in control. Highest (1246g) yield per plant was recorded in T6 followed by T5 (1111 g) and lowest (687 g) in T8. Highest (23.3 kg) yield per plot is recorded in T6 followed by T5 (22.6kg) and lowest (12.1kg) in T8 which were significantly different.

2. Effect of manures on growth and yield of Ginger in the agency areas of East Godavari district.

Among the treatments plant height is highest (53cm) in vermicompost and sheep manure combination and lowest(33cm) in T8 Treatment which are significantly different. No.of leaves per plant is highest(23.8) in T6 treatment and lowest in control. Highest (221g) yield per plant is recorded in T6 and lowest (106g)in T8. Highest yield (5.9kg) per plot was recorded in T6 followed by T2(4.6kg) and lowest (2.0kg) in T8.

AICRP on Palms(Palmyrah)

1. Studies on use of growth regulators for induction of early flowering in Palmyrah (*Borassusflabellifer L.*)

The trial was initiated during the month of January 2015. palms of four, six and eight years old were selected and the three chemicals namely Chlormequat chloride, Mepiquat chloride, and Triacontanol were given to the selected plants by pouring on the apical bud as well as by root feeding according to the treatmental requirements. The application of chemicals was done at three months interval. Recording of the observations like for earliness in flowering was done at every six months intervals.

In all 10 year, 8 year and 6 year old plants, it was observed that no early flowering was observed in all the treatments imposed. There is no significant change in all the treatments for the observations recorded before the start of application of chemicals and after finishing the scheduled application of chemicals when compared to the control treatment.

AICRP on Palms (Palmyrah) Food Science and Technology:

PHT-1 Standardization and Commercialization of Inflorescence Sap Extraction and Inflorescence Sap Based Products (Jaggery, Palm Sugar and Candy)

Palmyrah syrup is most economical product with rich in nutritional values. The TSS of syrup was 68 degree brix. Beyond 70 brix crystal formation was observed. The syrup can be used as sweetener and the syrup was dried at low temperature to gives palm sugar or jaggery.

PHT-2:Standardization of Tuber Flour Based Food Products (Like Pizza, Bakery items, confectionery, health mix etc.)

Development of value chain for production of tuber flour and project preparation for mini processing unit for flour production



PHT-4 Standardization of Preservation Technique for Palmyrah Tender Fruit Endosperm

Experiments initiated during 2019, Experiments is under progress

PHT. 5: Popularization of climbing device

The climbing devices (Joseph model) were procured to give training to the youths and training programme will be taken up in the month of May, 2019.

NON PLAN

1. Clarification of cashew apple juice:

The juice pretreated with palmyrah tuber flour followed by clarification with microfiltration and stored in refrigerator, and evaluated for physic-chemical and sensory changes during 6 month period at room temperature. The results showed that pH, TSS, acidity, total sugars and colour did not change significantly and sensory score showed that acceptance was same throughout the storage period.

2. Survey of traditional food and its nutritional values at agency area of East Godavari

Sap and jaggery of fwashtail palm and wild date palm was analyzed. The nutritional values slightly varied with Palmyrah sap and jaggery

3. Physico-chemical properties of palmyrah pulp

Physico-chemical analysis revealed that palmyrah fruit pulp contains TSS-16.5⁰ Brix, moisture content 74-77%, ash content -1.2 g, carbohydrates – 22.5 g, fibre content – 1.6%, pectin – 2.2 g and ascorbic acid – 14-19 mg/100 g.

HORTICULTURAL RESEARCH STATION, MAHANANDI

1. Effect of fertigation on growth, yield and quality of Onion cv. Agri found Light Red

Among the different fertigation treatments, in the treatment that received 100% RDF through drip at weekly interval up to 2 months (8 splits) recorded more polar (5.70 cm) and equatorial (6.87 cm) diameter of the bulb, more dry weight of the bulb (144.10 g) and higher yields (36.95 t/ha) followed by the treatment that received 75% RDF through drip at weekly interval up to 2 months (8 splits) which recorded polar (5.60 cm) and equatorial (6.62 cm) diameter of the bulb, dry weight of the bulb (135.58 g) and yield (35.00 t/ha), which were on par with each other.

2. Effect of fertigation on growth, yield and quality of Turmeric cv. Mydukur

Among the different fertigation treatments, in the treatment, *i.e.* 100% RDF as fertigation recorded more number of leaves (7.75), leaf width (15.95 cm), more number of tillers (4.29), more weight of the mother rhizome (183.72 g/plant), more weight of the primary finger (275.58



g/plant) and more fresh rhizome yield (46.88 t/ha) followed by the treatment that received 75% RDF as fertigation recorded the fresh rhizome yield of 45.05 t/ha, which were on par with each other.

3. Collection, evaluation and maintenance of Turmeric Germplasm

Among the 92 Turmeric germplasm/accessions. Salem recorded highest number of leaves (17.75), leaf width (16.50 cm), weight of the mother rhizome (209.45 g), weight of primary rhizome (314.17 g), weight of the secondary rhizome (174.54) and fresh rhizome yield per plant (698.15 g) followed by Roma (Fresh rhizome yield per plant 684.54g), Rajapuri (616.81 g) and CLI-335 (599.29 g) when compared to the locally grown var. Mydukur (557.25 g) and other medium and short duration varieties. However highest dry recovery was recorded in Roma (23.00%) followed by Salem (21.75%).

4. Collection, evaluation and maintenance of Coriander Germplasm

Among the 267 germplasm entries and 2 checks (APHU-D₁ and Sudha), LCC-224 recorded more number of primary branches (8.86), secondary branches (22.58), more number of umbels per plant (26.65) and seed yield (7.30 g/plant) followed by LCC-49 (6.80 g/plant) and LCC-283 (6.66 g/plant).

5. Collection, evaluation and maintenance of Ajowan Germplasm

Among the 54 germplasm entries and 1 check (LS-1), AA-29 recorded more number of secondary branches (110.50), more number of umbels per plant (140.54) and seed yield (9.40 g/plant) followed by LTA-24 (9.30 g/plant) and AA-37 (9.20 g/plant).

6. Evaluation of onion processing varieties under Kurnool district

Among the 4 onion processing varieties tested, Bhima Shubhra recorded more number of leaves (10.19), equatorial diameter (6.85 cm), higher bulb yield (33.13 t/ha), more TSS (15.18%), and total sugars (6.82%) followed by Bhima Swetha which recorded an yield of 30.71 t/ha, more rehydration ratio (1:3.56) and more protein content (3.94%) in fresh bulbs.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

1. GIN/CM/5.9: Organic production of Ginger

Irrespective of the variety, inorganic treatments recorded the highest plant height, fresh weight of rhizome, fresh yield per hectare and dry recovery when compared to organic treatment. But organic package can be recommended to the organic growers to improve productivity.

Effect of organic and inorganic package of practices on growth & yield on ginger varieties



Treatment	Plant Population	Plant Height (cm)	No. of Tillers	Fresh wt of Rhizome (g)	Yield/ha (t)	Dry Recovery (%)
T1(Nadia + IISR OPP)	38.00	59.31	8.85	208.33	20.56	20.81
T2 (Nadia + Inorganic)	37.50	62.05	9.00	230.38	23.16	22.25
T3 (IISR Rejatha + IISR OPP)	38.25	48.10	9.40	197.99	16.93	18.66
T4(IISR Rejatha + Inorganic)	38.00	51.50	10.05	224.08	21.16	18.76
T5 (CTPL Local + IISR OPP)	37.75	37.16	10.15	122.00	13.18	15.70
T6 (CTPL Local + Inorganic)	36.50	49.32	11.85	146.85	15.88	16.61
C.D. (5%)	NS	NS	1.18	65.32	4.34	1.87
Se (m)	0.94	5.61	0.39	21.47	1.43	0.62
C.V. (5%)	5.00	21.89	7.82	22.18	15.43	6.35

Organic package developed by IISR

Pre sowing rhizome treatment	PGPR strain GRB-35 1 capsule/100 l of water	Seed rhizome dipping in PGPR solution
Basal application of organic manures	FYM 25-30 t/ha Neem cake 2 t/ha	To be applied before last Ploughing
Top dressing of organic manures- Vermicompost 2 t/ha	Vermicompost 2 t/ha Ash 0.5 t/ha Soil low in K – Sulphate of potash supplementation 50 kg	45th & 90th DAP
Micronutrient	IISR ginger booster @ 5 g/l water 3-5 kg/ha	Foliar spray at 60th and 90th DAP
Pest and disease management	Neem oil/neem gold	5ml/l foliar spray
1. Shoot borer		
2. Soft rot and bacterial Wilt	BM 1%	Spray and drenching

2. TUR/CM/5.14: Organic production of Turmeric

Irrespective of the variety, inorganic treatments recorded the highest plant height, fresh weight of rhizome, fresh rhizome yield per hectare and dry recovery when compared to organic treatment. But organic package can be recommended to the organic growers to improve productivity.



Effect of organic and inorganic package of practices on growth & yield on turmeric varieties

Treatment	Plant Population	Plant Height (cm)	No. of Tillers	Fresh wt of rhizome (g)	Yield/ha (t)	Dry Recovery (%)
T1(Roma + IISR OPP)	37.50	127.62	1.40	269.06	31.03	22.57
T2 (Roma + Inorganic)	38.00	133.24	1.45	317.05	32.48	23.98
T3 (NDH-98 + IISR OPP)	38.00	143.72	1.00	507.93	38.15	24.39
T4(NDH 98 + Inorganic)	37.25	148.43	1.00	570.61	40.52	25.04
T5 (CTPL Local + IISR OPP)	37.75	105.60	1.55	220.04	23.72	17.75
T6 (CTPL Local + Inorganic)	38.00	119.23	1.55	256.15	25.21	19.20
C.D. (5%)	NS	6.53	0.13	94.72	4.67	1.13
SE(m)	0.53	2.15	0.04	31.14	1.54	0.37
C.V. (5%)	2.82	3.31	6.51	17.45	9.65	3.35

Organic package developed by IISR

Pre sowing rhizome treatment	PGPR strain GRB-35 1 capsule/100 l of water	Seed rhizome dipping in PGPR solution
Basal application of organic manures	FYM 20 t/ha Neem cake 2 t/ha	To be applied before last Ploughing
Top dressing of organic manures Vermicompost 2 t/ha	Vermicompost 2 t/ha Ash 0.5 t/ha Soil low in K – Sulphate of potash supplementation 50 kg	45th & 90th DAP
Micronutrient	IISR ginger booster @ 5 g/l water 3-5 kg/ha	Foliar spray at 60th and 90th DAP
Pest and disease management 1. Shoot borer	Neem oil/ neem gold	5ml/l foliar spray
2. Soft rot and bacterial Wilt	BM 1%	Spray and drenching

3. GIN/CM/5.10: Effect of micronutrients on growth and yield of ginger

Foliar application of IISR micro nutrient mixture showed marked increase in rhizome yield per hectare as compared to control. Among the treatments T2 (Nadia + IISR Micro nutrients application) recorded maximum plant height (64.91 cm), fresh weight of rhizome (320.40 g), yield/ha (24.54 t/ha) followed by T1 (Nadia). The highest dry recovery was observed in T6 (Surabhi+ IISR Micro nutrients application) (21.11 %) followed by T5 (20.66 %).

Effect of micro nutrient application on growth & yield on ginger varieties

Treatment	Plant Population	Plant Height	No. of Tillers	Fresh wt of Rhizome	Yield/ha (t)	Dry Recovery (%)
-----------	------------------	--------------	----------------	---------------------	--------------	------------------



T1(Nadia)	36.25	61.52	10.05	290.52	22.14	19.44
T2 (Nadia + IISR MN)	37.50	64.91	11.55	320.40	24.54	20.25
T3 (Suprabha)	35.75	58.25	10.05	269.62	17.62	18.89
T4 (Suprabha+ IISR MN)	36.00	60.82	10.83	301.74	19.15	19.63
T5 (Surabhi)	34.50	50.39	9.80	215.55	13.73	20.66
T6 (Surabhi + IISR MN)	34.00	54.14	10.80	249.70	16.07	21.11
C.D.	NS	2.85	0.72	80.214	2.55	NS
SE(m)	0.91	0.94	0.24	20.37	0.84	0.649
C.V.	5.11	3.21	4.54	19.46	8.89	6.49

Soil Physical Properties:

Ph	EC	OC %	N (kg/ha)	P (kg/ha)	K (kg/ha)	S (mg/kg)	Zinc (mg/kg)	Iron (mg/kg)	Cu (ppm)	Mn (ppm)	Boron (ppm)
6.94	0.22	1.56	341.1	7.15	440.2	12.0	0.92	13.1	0.28	4.09	0.32

4. TUR/CM/5.15:Effect of micronutrients on growth and yield of turmeric

Foliar application of IISR micro nutrient mixture showed marked increase in height of the plants and rhizome yield as well as dry recovery as compared to control. Among the treatments T6 (BSR-2+ IISR Micro nutrients application) recorded maximum plant height (130.89 cm), fresh weight of rhizome (306.60 g), yield/ha (26.62 t/ha) followed by T2 (Roma+ IISR Micro nutrients application) and were on par with each other. T2 (Roma+ IISR Micro nutrients application) recorded highest dry recover percentage (24.80).

Effect of micro nutrient application on growth & yield on turmeric varieties

Treatment	Plant	Plant Height (cm)	No. of Tillers	Fresh wt of rhizome (g)	Yield/ha (t)	Dry Recovery (%)
T1 (Roma)	38.25	126.96	2.20	255.77	23.87	22.83
T2 (Roma+ Micro N)	38.00	130.89	2.20	306.60	26.26	24.80
T3 (Prathibha)	36.75	125.42	2.05	209.84	17.80	20.90
T4 (Prathibha+ Micro N)	37.50	126.11	2.15	282.53	19.30	21.55
T5 (BSR-2)	37.25	116.06	2.15	320.47	25.96	19.09
T6 (BSR-2+ Micro N)	37.25	121.24	2.30	374.58	26.62	20.58
C.D. (5%)	NS	3.36	NS	80.67	4.52	2.10
SE(m)	0.46	1.10	0.10	26.52	1.49	0.69
C.V. (5%)	2.44	1.77	8.71	18.19	12.76	6.40

Soil Characters:



pH	EC	OC %	N (kg/ha)	P (kg/ha)	K (kg/ha)	S (mg/kg)	Zinc (mg/kg)	Iron (mg/kg)	Cu (ppm)	Mn (ppm)	Boron (ppm)
6.74	0.02	0.4	204.5	3.575	734.6	10.0	0.55	31.9	0.3	3.46	0.24

HORTICULTURAL RESEARCH STATION, DARSI

1. Performance of acid lime selections/varieties under Prakasam district conditions:

Among the acid lime varieties tested, the highest per plant yield has been recorded in PulusuNimma (14.36 kg/plant) followed by TAL – 94/13 (11.20 kg/plant).

2. Effect of fertigation and foliar sprays on leaf production in curry leaf.:

The treatment combination F1S3 (100 % N&K + FeSO₄ – 0.2% + ZnSO₄ – 0.2%) recorded highest yield (12.31 t/ha) and it was on par with F₂S₃ (75 % N&K + FeSO₄ – 0.2% + ZnSO₄ – 0.2%) which recorded 11.94 t/ha leaf yield. In this 62-50-50 NPK kgs/ha RDF has been adopted and 50kg/ha Phosphorus was applied as basal and 62kg/ha N and 50kg/ha K was applied in 10 split doses through fertigation.

3. Organic cultivation of sweet orange:

Among all the treatments, Inorganic treatment (T1-RDF(1500-350-400g.NPK/plant) recorded highest yield of 19.73kg per plant as compared to other treatments. Among organic treatments T8 (FYM@46kg+Vermicompost @31kg+Azospirillum@200g+PSB@200g/plant) recorded the highest yield of 16.75 kg per plant.

4. Fertigation studies in watermelon:

Among all the treatments, T2 - 100% N&K (RDF 100-60 kg NK/ha - fertigation at weekly interval) recorded highest yield of 575.17 q/ha and was on par with T1 - 100% N&K (Fertigation at 3days interval) and T3 - 75% N&K (Fertigation at 3days interval)

CASHEW RESEARCH STATION, BAPATLA

1. High Density Planting –Observational trial

In high density planting observation trial, values were recorded in 8x8 m spacing with respect to the mean plant height (5.18m), mean canopy height (4.91m), mean trunk girth (95.28 cm), mean canopy spread (8.85 m), mean canopy surface area (81.86 m²) and ground area coverage by canopy (52.14%).

2. Intercropping in cashew

Among the different intercrops studied during the initial years of cashew the treatment T3 (Cashew +Marigold) recorded maximum yield of intercrop (2344 kg/ha) and was superior over rest of the treatments and was followed by T₁ (Cashew + China aster) with 969 kg/ha and T₄ (Cashew + Crossandra) recorded the lowest yield (39 kg/ha). With regard to economics of growing intercrops, growing China aster as inter crop in cashew orchard gave the highest net



profit of Rs.105430/- with a C.B ratio of 2.34 followed by Marigold (Rs.86380/- and C.B ratio of 2.16) and the lowest net profit was obtained in crossandra(Rs.48600/- with C.B ratio of 1.08).

3. Organic management in cashew

Organic management of cashew trial revealed that with respect Mean nut weight and shelling percentage and mean annual nut yield per tree were found to be significant where as mean apple weight was non-significant. Among the treatments, the mean nut weight was found maximum in T2 (10.08 g) followed by T5 (9.26 g) and T6 (9.14 g). The maximum mean annual nut yield per tree during the year was recorded in T4 (3.05 kg) followed by T1 (2.92 kg) and T2 (3.80 kg). With regard to the mean apple weight, the highest was recorded in T2 (70.57 g). The shelling percentage was recorded highest in T7 (30.08) followed by T3 (29.80).

CITRUS RESEARCH STATION, TIRUPATI

1. Evaluation of different spray schedules against leaf miner in Citrus (Nursery/young orchards)

The results revealed that Neem formulation 10000ppm @ 5ml/l followed by Spinosad 45SC @ 0.002% was effective in reducing leaf miner infestation to an extent of (4.90%) followed by Neem formulation 10000ppm @ 5ml/l followed by thiamethoxam 25WG @ 0.025% (5.33%) as compared to local check, Imidacloprid 17.8SL (10.63%) and control (26.08%) at 14 days after spray.

Table– 1: Effect of different spray schedules against citrus leaf miner

S.No.	Treatments	Pre count	Mean per cent incidence of leaf miner		
			3 DAS*	7 DAS	14DAS
1	Neem formulation 10000 ppm @ 5ml/L followed by thiamethoxam (0.025%)	27.17	5.67 (13.72)	6.17 (14.34)	5.33 (13.32)
2	Neem formulation 10000 ppm @ 5ml/L followed by Spinosad (0.002%)	24.80	5.70 (13.22)	6.55 (14.77)	4.90 (12.75)
3	Local check (Imidacloprid 17.8SL@ 0.005%)	22.46	7.37 (15.72)	8.79 (17.23)	10.63 (18.74)
4	Control (water spray)	23.40	22.46 (28.21)	28.67 (32.38)	26.08 (30.71)
	SE(m±)	1.03	0.96	1.21	1.32
	CD @ 5%	2.35	3.26	2.64	2.89
	CV (%)	8.53	10.22	7.50	7.95

* Days after spray; figures in parenthesis are arc sign $\sqrt{\text{percentage transformed values}}$

3. Management of Citrus thrips, aphids, psylla and blackfly/whitefly



Results revealed that Azadirachtin 10000 ppm @ 5ml/L followed by thiamethoxam(0.025%) was effective in reducing the population of aphids, blackfly and psyllids as compared to T1 i.e., Azadirachtin 10000 ppm @ 5ml/L f.b. spinosad (0.002%) and local check (Dimethoate 30EC(0.06%)) but as for thrips infestation on leaves and fruits is concerned, azadirachtin 10000 ppm @ 5ml/L followed by spinosad(0.002%) found to be more effective as compared to T2 and dimethoate (local check) with respect to yield and benefit cost ratio.

Table 1: Evaluation of insecticides against citrus aphids

S.No.	Treatments	Pre count	Aphid population/twig		
			3 DAT*	7 DAT	14 DAT
T1	Azadirachtin 10000 ppm @ 5ml/L f.b. Spinosad (0.002%)	6.80 (2.60)	4.60 (2.14)	4.10 (2.01)	4.75 (2.41)
T2	Azadirachtin 10000 ppm @ 5ml/L f.b. Thiamethoxam(0.025%)	5.66 (2.37)	2.13 (1.45)	1.20 (1.09)	0.86 (0.92)
T3	Dimethoate 30EC(0.06%)- local check	7.46 (2.73)	1.73 (1.31)	2.80 (1.67)	2.73 (1.60)
T4	Water spray (control)	7.13 (2.68)	10.58 (3.25)	13.87 (3.73)	13.30 (3.64)
	SE(m±)	0.64	0.53	0.62	0.79
	CD @ 5%	0.25	1.58	1.88	1.21
	CV (5%)	2.35	4.53	3.65	4.08

* Mean of five replications; * Figures in parentheses are square root (values^{+0.5}) transformed values; DAT- days after treatment.

Table 2: Evaluation of insecticides against citrus black fly

S.No.	Treatments	Pre count	Blackfly population/Sq.cm		
			3 DAT*	7 DAT	14 DAT
T1	Azadirachtin 10000 ppm @ 5ml/L f.b. Spinosad (0.002%)	3.08 (1.74)	1.57 (1.16)	1.90 (1.37)	1.87 (1.36)
T2	Azadirachtin 10000 ppm @ 5ml/L f.b. Thiamethoxam(0.025%)	3.00 (1.72)	0.97 (0.96)	0.58 (0.76)	0.67 (0.81)
T3	Dimethoate 30EC(0.06%)- local check	2.86 (1.69)	0.75 (0.83)	1.83 (1.43)	2.17 (1.47)
T4	Water spray (control)	3.46 (1.86)	2.83 (1.81)	2.60 (1.55)	2.40 (1.53)
	SE(m±)	0.57	0.11	0.18	0.23
	CD @ 5%	0.81	0.32	0.63	0.70
	CV (5%)	3.38	1.32	2.48	2.69

* Mean of five replications; * Figures in parentheses are square root (values^{+0.5}) transformed values; DAT- days after treatment

Table 3: Evaluation of insecticides against citrus psyllid

S.No.	Treatments	Pre count	Psylla population/15cm twig		
			3 DAT*	7 DAT	14 DAT



T1	Azadirachtin 10000 ppm @ 5ml/L f.b. Spinosad (0.002%)	14.10 (3.74)	5.17 (2.28)	4.40 (2.09)	4.20 (2.04)
T2	Azadirachtin 10000 ppm @ 5ml/L f.b.Thiamethoxam(0.025%)	16.25 (4.09)	4.33 (2.07)	2.25 (1.66)	2.08 (1.60)
T3	Dimethoate 30EC(0.06%)- local check	15.01 (3.87)	5.67 (2.38)	5.00 (2.24)	6.13 (2.47)
T4	Water spray (control)	16.85 (4.11)	16.42 (4.11)	20.50 (4.59)	23.67 (4.92)
	SE(m±)	0.80	0.96	0.83	0.79
	CD @ 5%	1.14	1.03	1.83	1.25
	CV (5%)	3.98	3.52	4.13	3.90

* Mean of five replications; * Figures in parentheses are square root (values^{+0.5}) transformed values; DAT- days after treatment.

Table 4: Evaluation of insecticides against citrus thrips (leaf infestation)

S.No.	Treatments	Per cent thrips infestation on leaf		
		3 DAT*	7 DAT	14 DAT
T1	Azadirachtin 10000 ppm @ 5ml/L f.b. Spinosad (0.002%)	5.98 (14.14)	3.51 (10.57)	4.33 (11.16)
T2	Azadirachtin 10000 ppm @ 5ml/L f.b.Thiamethoxam(0.025%)	5.65 (13.72)	6.47 (14.62)	10.27 (18.66)
T3	Dimethoate 30EC(0.06%)- local check	5.90 (13.82)	7.95 (16.22)	16.05 (23.54)
T4	Water spray (control)	23.90 (29.24)	24.02 (29.35)	26.44 (30.93)
	SE(m±)	0.93	0.72	0.76
	CD @ 5%	3.19	4.22	4.09
	CV (5%)	8.20	9.34	9.26

* Mean of five replications; * Figures in parentheses are arc sine transformed values; DAT- days after treatment.

Table 5: Evaluation of insecticides against citrus thrips (fruits infestation)

S.No.	Treatments	Fruits Infestation (%)	Yield (t/ha)	B: C ratio
T1	Azadirachtin 10000 ppm @ 5ml/L f.b. Spinosad (0.002%)	4.67 (10.52)	23.30	2.57
T2	Azadirachtin 10000 ppm @ 5ml/L f.b.Thiamethoxam(0.025%)	11.37 (19.59)	21.80	2.05
T3	Dimethoate 30EC(0.06%)- local check	17.42 (24.66)	20.00	1.91



T4	Water spray (control)	27.73 (31.77)	18.86	-
	SE(m±)	0.94	0.53	-
	CD @ 5%	1.90	1.34	-
	CV (5%)	4.83	2.89	-

* Mean of five replications; * Figures in parentheses are arc sine transformed values

4. Efficacy of different repellents against fruit sucking moths

The findings showed that spraying of Neem oil @ 1% recorded significantly low per cent fallen fruits due to at 10 DAT(11.33%) and 30 DAT (8.10%) followed by Petroleum Spray oil @ 2% at 10 DAT(12.50%), and 30 DAT 8.60%). The treatment with Neem oil @ 1% recorded the highest (21.23 t/ha) yield with B:C ratio of 2.93 and it was at par with Petroleum Spray oil @ 2% (20.70 t/ha.) (B:C ratio 2.34) whereas the untreated control recorded the lowest yield of 17.05 t/ha.

Table 1: Effect of different repellents on fallen fruits due to fruit sucking moths in sweet orange during 2018-19 and their influence on yield.

T.No.	Treatments	Percent Fruit drop due to fruit sucking moth			Yield (t/ha)	B: C ratio
		10 DAT*	20 DAT	30 DAT		
1	Neem oil 1%	11.33 (19.29)	11.50 (19.63)	8.10 (16.11)	21.23	2.93
2	Azadirachtin 1% @3ml/l	13.10 (21.01)	13.50 (21.46)	12.70 (20.67)	20.70	2.11
3	Petroleum spray oil 2%	12.50 (20.49)	9.10 (17.16)	8.60 (16.73)	21.66	2.69
4	Citronella oil 2%	15.55 (23.02)	15.90 (23.42)	17.50 (24.62)	19.40	1.91
5	Soapnut extract 2%	29.00 (32.49)	23.33 (28.77)	20.00 (26.35)	18.30	1.48
6	Mustard oil 2%	31.65 (34.17)	30.02 (33.17)	28.45 (32.19)	18.65	1.52
7	Jatropa oil 2%	20.30 (26.62)	18.70 (25.44)	15.16 (22.73)	19.10	1.98
8	Pongamia oil 2%	25.00 (29.85)	19.74 (26.21)	19.60 (26.19)	18.80	1.78
9	Control	45.30 (42.27)	46.38 (42.88)	45.95 (42.65)	17.05	1.10
	SE (m±)	0.97	0.89	1.21	2.61	-
	CD @ 5%	2.92	2.70	3.65	0.86	-
	CV (%)	6.04	5.84	8.25	7.68	-

* Days after treatment, Figures in parenthesis are arc sign $\sqrt{\text{percentage}}$ transformed values

5. Evaluation of new acaricides against Citrus mites (New)

The findings showed that foliar application of spiromesifen 240 SC (0.009%) on sathgudi sweet orange was found to be significantly superior in recording lower population counts of



green mites/leaf (4.17 at 14 DAT) and also rust mite infestation on fruits (4.55%) as compared to other acaricidal treatments i.e., propargite 57EC @0.057% (4.11 mites/leaf at 14 DAT) (6.60%) Fenazaquin 10 EC @0.01 % (7.00 mites/leaf) (8.10%), and control (35.16 mites/leaf) (37.70%) at harvest. The effect of acaricides treatment on crop yield indicated that maximum yield of 21.50 t/ha was recorded in T1 with higher B: C ratio of 2.67.

Table 1: Effect of acaricides against mite population infesting citrus

Treatments	Population counts of green mites / leaf			Rust mite infestation in fruits at harvest (%)	Yield (t/ha)	B: C ratio
	3 DAT	7 DAT	14DAT			
T1:Spiromesifen 240 SC (0.009%)	5.33 (2.48*)	5.50 (2.54)	4.17 (2.26)	4.55 (12.18**)	21.50	2.67
T2:Fenazaquin 10 EC (0.01%)	5.67 (2.57)	5.61 (2.56)	7.00 (2.81)	8.10 (16.48)	19.40	1.86
T3:Propargite 57 EC (0.057%)	5.00 (2.41)	4.50 (2.33)	4.11 (2.22)	6.60 (14.78)	20.97	2.59
T4:Local check (Dicofol 18EC@0.04%)	11.83 (3.58)	12.83 (3.71)	14.00 (3.86)	20.20 (26.67)	17.50	1.20
T5:Control	21.50 (4.74)	24.83 (5.08)	35.16 (6.01)	37.70 (37.86)	15.90	1.03
SE (m±)	0.12	0.22	0.36	0.63	0.78	
CD at 5%	0.39	0.07	0.11	2.10	2.57	
CV at 5%	6.52	3.55	5.46	5.08	7.05	

* Figures in parentheses are square root (values^{+0.5}) transformed values; ** Figures in parenthesis are arc sign $\sqrt{\text{percentage}}$ transformed values; ***DAT: Days after treatment.

VEGETABLES

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

Non Plan – Vegetables:

In a research trial on stage specific fertigation scheduling in European cucumber under Naturally Ventilated Polyhouse (NVPH) at Centre of Excellence for Protected Cultivation (CEPC) it was observed that T10 (N3P1K2) recorded highest fruit yield (6.93 kg/plant) which was on par with T12i.e (N3P2K1) (6.79 kg/plant) and T11 (N3P2K2) (6.71 kg/plant).

			Stage – 1 06 th - 25 th day	Stage – 2 26 th - 50 th day	Stage – 3 51 st - 70 th day
FACTORS		Kg/ha	Kg/ha	Kg/ha	Kg/ha
Factor-1(N levels)	N ₁	80	20	50	10
	N ₂	120	30	70	20
	N ₃	160	40	100	20



Factor-2(P levels)	P₁	60	30	20	10
	P₂	90	50	30	10
Factor-3(K levels)	K₁	80	20	50	10
	K₂	120	30	70	20

FLOWERS

HORTICULTURAL RESEARCH STATION, KOVVUR

Effect of mulching and micronutrients on growth and yield of tuberose cv. Prajwal

In plant crop of tuberose cv. Prajwal, significantly highest chlorophyll content (66.20 SPAD), weight of florets spike⁻¹ (125.31 g), diameter of floret (3.93 cm) and floret yield (15.48ha⁻¹) were recorded in plants grown on paddy straw mulch and sprayed with micronutrients at bimonthly intervals. Among, different mulches under study, highest weed control efficiency was observed in black mulch (95.44) which was on par with silver mulch (93.40) and lowest in paddy straw mulch (69.57).

In ratoon crop of tuberose cv. Prajwal, among different mulches, weight of florets spike⁻¹ was maximum in paddy straw mulch (143.08 g) which was on par with black mulch (141.04 g) and minimum in silver mulch (129.46 g) and no mulch (131.60 g). Floret size and yield was not significantly influenced by mulching treatments. However, significantly highest number of spikes m⁻² was recorded in black mulch (34.84) which was on par with paddy straw mulch (33.50). Moreover, mulching did not influence the bulb parameters significantly. However, significantly highest chlorophyll content (58.47 SPAD) was recorded in plants sprayed with micronutrients while number of florets (65.28), weight of florets (150.52 g) spike⁻¹ and length of floret (6.70 cm) were enhanced by spraying micronutrients compared to water spray (60.67, 122.07g and 6.55 cm respectively). Further, floret yield was highest in micronutrients sprayed plants (26.20 t ha⁻¹) compared to water sprayed (22.82 ha⁻¹) plants. However, number of spikes m⁻² was not influenced by the micronutrient sprays. Significantly micronutrients did not differ for bulb parameters. Whereas, bulb yield was significantly influenced by micronutrient spray. Compared to water sprayed plants (19.98 t ha⁻¹), highest bulb yield (20.86 t ha⁻¹) was recorded in micronutrient sprayed plants. Among the interaction effects, significantly highest weight of florets spike⁻¹ (166.70 g) was recorded in plants grown on paddy straw mulch and sprayed with micronutrients at bimonthly intervals.

In plant crop highest BC ratio of 1.41 was observed in plants grown on paddy straw mulch and sprayed with micronutrients whereas in ratoon crop also highest BC ratio of 5.40 was observed in plants grown on paddy straw mulch as well as on black mulch which were sprayed with micronutrients. While considering both plant and ratoon crops, highest BC ratio of 3.01 was observed in plants grown on paddy straw mulch and sprayed with micronutrients.



Paddy straw mulch Black mulch
Field view of tuberose cv. Prajwal with different mulches (Ratoon crop)

Validation of studies on regulation of flowering and bulb production in tuberose (*Polianthes tuberosa* L.) cv. Prajwal

In tuberose cv. Prajwal, all the growth, spike, floret parameters and floret yield were improved in GA₃ 200 ppm sprayed plants over control. However, bulb yield was improved by 28.52% over control by the application of CCC 1500 ppm. Moreover, highest BC ratio of 1.35 was recorded by the application of CCC 1500 ppm over control (1.23).

TUBER CROPS

HORTICULTURAL RESEARCH STATION, KOVVUR

Validation of organic farming technologies in elephant foot yam was conducted in organically maintained plot. Among different treatments, highest yield (44.44 t ha⁻¹) and BC ratio (1.77) was recorded in T₃ (Seed treatment in FYM + neem cake + *Trichoderma harzianum* slurry). Application of FYM @ 36 t ha⁻¹ (FYM: neem cake mixture (10:1 ratio) incubated with *Trichoderma harzianum*) + *in situ* green manuring with cowpea (green matter @ 20-25 t ha⁻¹) + neem cake @ 1 t ha⁻¹ + ash @ 3 t ha⁻¹).

Validation of organic farming technologies in greater yam was conducted in organically maintained plot. Among different treatments highest yield (47.41 t ha⁻¹) and highest BC ratio (2.21) was also recorded in T₃ (FYM @ 15 t ha⁻¹ + green manuring to generate 15-20 t ha⁻¹ of green matter in 45-60 days + neem cake @ 1 t ha⁻¹ + ash @ 1.5 t ha⁻¹ + biofertilizers (Azospirillum @ 3 kg ha⁻¹, mycorrhiza @ 5 kg ha⁻¹ and phosphobacteria @ 3 kg ha⁻¹).

Integrated weed management in elephant foot yam

Among all the weed control treatments, T₆ i.e., Weed control ground cover has recorded significantly highest yield of 41.44 t ha⁻¹ followed by T₃ i.e., raising of cow pea as green manure crop in interspaces along with planting and incorporation at 45-60 DAP + post emergence herbicide at 90 DAP with an yield of 35.97 t ha⁻¹. However highest benefit cost ratio of 1.66 was obtained with the treatment T₃ - raising of cow pea as green manure crop in interspaces along with planting and incorporation at 45-60 DAP + post emergence herbicide at 90 DAP which can be recommended as best weed control method for obtaining higher yields in elephant foot yam.





Integratated weed management in elephant foot yam	planting and incorporation 45-60 DAP + post emergence herbicide 90 DAP	
---	--	--

Standardization of fertigation for elephant foot yam

During 2018-19, in elephant foot yam, drip Irrigation at 100% CPE and fertigation with 100% (I_3F_1) or 75% RDF (I_3F_2) recorded highest BC ratio of 1.56.

From the pooled data it was revealed that, in elephant foot yam among growth parameters there were no significant differences for 50, 100 % sprout emergence, pseudostemheight, mean canopy diameter and number of leaflets in elephant foot yam cv. Gajendra. However, pseudostem girth, leaflet length, width and leaf area were significantly highest (12.80 cm, 11.65 cm, 6.023 cm, 0.54 m² respectively) in the treatment I_3F_2 i.e. Drip Irrigation at 100% CPE and fertigation with 75% RDF. Significantly highest yield/plant (1.59 kg), per plot (53.81 kg) and hectare (40.94 tonnes) was also recorded in I_3F_2 with highest BC ratio of 2.39.

Hence, it could be concluded that irrigation at 100% CPE and Fertigation with 75% RDF (I_3F_2) is economically viable to get good yields for summer crop in elephant foot yam.

Effect of gibberellic acid in prolonging the dormancy of elephant foot yam cv. Gajendra

In elephant foot yam, during 2018-19 at 75 days after storage, among different methods of application of GA₃, highest sprouting (66.67) was recorded in M₃ (Pouring 10 ml in the eye portion) followed by M₄ (Spraying + Pouring 5 ml in the eye portion) with 57.78 % sprouting and lowest (48.89 %) in M₂ (Dipping for 15 min) which was on par with (53.33 %) M₁ (Spraying). However, at 90 days after storage, sprouting was not influenced by any treatment and treatment combinations.

Among different concentrations of GA₃ applied, at 75 and 90 days after storage, highest physiological weight loss (21.76, 24.85 respectively) was recorded in treatment without GA₃ and lowest (13.64, 16.92 respectively) was observed in GA₃ 200 ppm.

Rotting percent and days to 50% sprouting was not significantly influenced by either GA₃ concentrations or method of application and their interaction.

Effect of different mulches on growth and yield of elephant foot yam

Among different mulches tried, the growth and yield of elephant foot yam was found to be significantly high (63.44 tha⁻¹) by mulching with paddy straw followed by live mulch with cowpea (49.69 tha⁻¹) which was at par when banana biomass (48.13tha⁻¹) was used as mulch.

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

- The results of observational trial on different planting densities in cassava variety PDP CMR-1 under Coastal Andhra Pradesh conditions revealed that the highest tuber yield per plant was recorded with the spacing, 90 cm x 90 cm (3.24 Kg) whereas the per



hectare tuber yield was highest when the plants were grown at a spacing of 60 x 60 cm (70.93 t).

- The results of the standardization of dates of planting and dates of harvesting in orange fleshed sweet potato entries under Coastal Andhra Pradesh conditions revealed that the genotypes PSP-3, PSP-14, BhuKanthi, BhuJa and PSP-7 have recorded highest total tuber yield/ha whereas BhuJa, BhuKanthi, PSP-5, PSP-7 and PSP-2 have recorded highest marketable tuber yield/ha.

SPICES

CHILLI

HORTICULTURAL RESEARCH STATION, LAM

CHILLI (Breeder seed production)

Integrated Nutrient Management in Chilli for seed yield and quality improvement

The trial was conducted with eight treatments consisting of bio fertilizers, bio control agents in combination with reduced doses of RDF (50% & 75%) in Randomized block design with three replications. Among the treatments, T4 recorded maximum yield (1883.33 kg/ha) being on par with T2, T3 and T5 (1774.99, 1752.77 and 1680.55kg/ha respectively). Plant height, number of fruits per plant and number of seeds per pod, seed yield (kg/ha) were significantly maximum in T4- 75%RDF + biofertilizers (Azospirillum + PSB+ K solubilizing bacteria each @2kg/acre) + Bio-control agent *Trichoderma Viride* @ 2kg/acre + *Mycorrhizae* (VAM @ 5kg/acre) as basal application(**Table-41**)

Table:41 Effect of Integrated Nutrient management on Chilli

Treatment	Plant height (cm)	Number of branches	Number of fruits per plant	Dry pod yield/ ha (kg)	Number of seeds / pod	Seed yield /ha (kg)	Test weight(g)
T1	54.8	4.9	36.3	1405.55	50.3	427.77	4.2
T2	53.6	4.3	49.7	1774.99	60.0	566.66	5.0
T3	53.3	4.7	49.1	1752.77	53.6	544.44	4.8
T4	61.2	4.7	52.7	1883.33	64.0	602.77	5.6
T5	54.1	4.5	47.3	1680.55	59.0	502.77	5.0
T6	50.1	5.0	40.6	1461.10	48.6	438.88	4.3
T7	48.8	4.9	45.5	1636.10	59.6	536.12	4.5
T8	43.8	3.9	31.8	1002.77	46.6	288.88	3.8
C.D(p=0.05)	6.34	NS	6.46	203.0	7.12	64.46	0.52
C.V(%)	6.84	-	8.28	15.42	7.29	7.48	6.38

Table42:Effect of INM on seed quality characters in chilli

Treatment	Germination (%)	Shoot length (cm)	Root length (cm)	SVI
-----------	-----------------	-------------------	------------------	-----



T1	83.3 (65.88)	13.13	4.10	1438.96
T2	85.3 (67.45)	17.46	4.73	1893.73
T3	82.0 (64.90)	17.97	4.83	1869.33
T4	85.3 (67.45)	18.26	5.50	2030.30
T5	80.3 (63.65)	13.63	4.53	1459.80
T6	83.0 (65.65)	16.50	4.63	1752.46
T7	85.0 (67.21)	17.50	5.10	1921.46
T8	82.6 (65.35)	11.43	3.36	1223.73
C.D(p=0.05)	NS	2.08	0.73	240.88
C.V(%)	-	7.46	9.01	8.02

There is no significant difference among the treatments with respect to germination percent (**Table-42**). Whereas treatment T4 {75%RDF + biofertilizers (Azospirillum + PSB+ K solubilizing bacteria each@2kg/acre) + Bio-control agent *Trichoderma Viride* @ 2kg/acre + *Mycorrhizae* (VAM @ 5kg/acre) as basal application} recorded significantly maximum root length (5.50cm), shoot length (18.26 cm) and seedling vigour index (2030.30).

Pre-harvest spray of micronutrients to enhance seed yield and quality in chilli.

Among the treatments, significant differences were observed with number of fruits, dry chilli yield, seed yield per ha and test weight. Among the treatments, T₅ (Spraying with Fe + Ca + B) recorded maximum dry chilli yield (1794.46 kg/ha) seed yield per ha (580.56 kg/ha) and test weight (5g) followed by T₆ (1591.66 kg/ha) and T₈ (1525.8 kg/ha) (**Table-43**).

Table 43:Effect of pre-harvest spray of micro nutrients on pod and seed yield and in chilli

Treatment	Plant height (cm)	No. of fruits per plant	Dry chilli Yield (kg/ha)	No. of seeds per pod	Seed yield (kg/ha)	Test weight (g)
T1	53.0	40.6	1294.47	48.33	319.45	3.10
T2	51.6	43.8	1397.23	49.67	391.67	3.80
T3	55.0	45.9	1463.87	51.67	450.00	4.4
T4	54.3	41.5	1325.00	49.00	369.45	3.97
T5	62.6	52.9	1794.46	55.0	580.56	5.00
T6	57.6	49.8	1591.66	53.6	502.78	4.80
T7	57.6	46.8	1494.43	50.3	494.44	4.63
T8	56.0	48.7	1525.80	52.0	511.11	4.77
C.D	NS	5.59	257.07	NS	146.45	0.39
C.V(%)	-	6.84	9.76	-	18.31	5.12

However, when coming to seed quality parameters there is no significant difference among the treatments viz., germination percent, shoot length and root length. Among the treatments, micronutrient spray with Ferrous sulphate @ 0.2% + Calcium nitrate @ 0.2% + Boron @ 0.1% (T₅) recorded highest seedling vigour index-I (2338.22) and was at par with T₃ (2210.68) the treatment spraying with Calcium nitrate @ 0.2% (**Table-44**)



Table 44: Effect of pre-harvest spray of micro nutrients on seed quality characters in chilli

Treatment	Germination percent	Shoot length (cm)	Root length (cm)	Seedling vigour Index (SVI)
T1	86.3 (68.28)	16.80	6.10	1980.72
T2	85.0 (67.21)	17.00	6.53	2001.48
T3	87.3 (69.12)	18.80	6.63	2210.68
T4	86.0 (68.03)	17.21	6.30	2014.00
T5	87.6 (69.38)	19.76	6.93	2338.22
T6	83.6 (66.11)	18.67	6.47	2104.88
T7	84.0 (66.42)	17.50	6.23	1994.83
T8	82.6 (65.35)	17.62	6.40	1991.06
C.D (P=0.05)	NS	NS	NS	228.54
C.V(%)	-	-	-	6.21

Effect of drip irrigation and fertigation schedule on seed yield and quality in chilli

Data revealed that the highest number of fruits per plant (71.70), dry chilli yield ha⁻¹ (983.81 kg) and seed yield ha⁻¹ (344.32 kg) were obtained by application of 75% RDF through fertigation which was significantly superior over T1, T4, T5, T6 and T7 (Table 6) followed by T2.

Table 45 :Effect of Fertigation on yield of chilli

Treatments	Plant Height (cm)	No.of branches	No.of fruits per plant	Dry yield (kg/ha)	Seed Yield (kg/ha)
T1-25% RDF through fertigation	39.4	2.8	55.10	755.24	241.67
T2-50% RDF through fertigation	41.07	3.4	65.67	900.95	297.31
T3-75% RDF through fertigation	45.6	3.8	71.70	983.81	344.32
T4-100% RDF through fertigation	44.2	2.8	63.10	865.71	294.33
T5-125% RDF through fertigation	44.2	2.8	58.07	796.19	262.74
T6-150% RDF through fertigation	42.4	2.5	56.63	776.19	243.06
T7- control RDF By pocketing	36.93	2.0	48.03	658.09	197.43
CD	5.38	0.44	7.09	97.71	31.52
CV (%)	7.12	8.52	6.59	6.63	6.52

Better production of yield and yield attributes might be 75% RDF due to better performance under drip fertigation as compared to conventional method of fertilizer application can be attributed to maintenance of favorable Nutrient-Water interaction in the root zone, which in turn might have helped the plant to utilize nutrients more efficiently. These results are in



agreement with the findings of several researchers in different vegetable crops such as Kadam et al.,(2006) and Vjekoslavet al.,(2010) and Ayyadurai and Manickasundaram (2014)

Table 46: Effect of Fertigation on seed quality parameters in chilli

Treatment	Germination percent	Shoot length (cm)	Root length (cm)	Seedling vigour Index (SVI)
T1	80.0 (63.44)	32.9	7.8	3,260.0
T2	84.0 (66.42)	33.5	8.9	3,561.4
T3	86.5 (68.44)	34.6	11.2	3,958.8
T4	82.6 (65.35)	30.7	10.6	3,419.6
T5	83.0 (65.65)	31.5	9.8	3,436.1
T6	80.0 (63.44)	28.8	9.8	3,092.7
T7	77.0 (61.34)	26.5	8.2	2,674.0
C.D (P=0.05)	1.7	2.6	1.1	195.6
C.V(%)	1.2	4.6	6.7	3.2

Among the treatments T3 (75% RDF through fertigation) significantly superior over other treatments. T3 recorded highest germination percentage (86.5) and other growth parameters viz. root length (11.2cm), shoot length (34.6cm) and seedling vigour index 3958.8).

TURMERIC

During 2018-19 kharif season, an experiment was conducted to study the rhizome bulking pattern of the six varieties i.e. Mydukur, Prathibha, Rajendra Sonia, BSR-2, Duggirala Red (JTS-6) and Megha. Sampling was taken up at 60 DAS, 120 DAS, 180 DAS and harvest. Six varieties were sown in the third week of July and evaluated for rhizome bulking with periodical sampling. Fresh weight increased from 120 DAS to 180 DAS almost exponentially, with slow accumulation before (upto 120 DAS) and after this period (180 DAS to harvest). Among the varieties, maximum fresh rhizome weight at harvest was recorded with Mydukur (381.2 g/clump) followed by BSR-2 (375 g/clump) and Duggirala Red (370.8 g/clump) which were on par with each other and significantly superior to other varieties.

Table 51. Plant growth and rhizome bulking at harvest

Variety	Rhizome fresh weight (g)				Rhizome dry weight (g)			
	60 DAS	120 DAS	180 DAS	Harvest	60 DAS	120 DAS	180 DAS	Harvest
Mydukur	44.82	81.0	242.8	381.2	5.47	9.4	45.71	72.7
Prathibha	53.14	69.8	269.8	329.8	5.38	7.6	46.35	55.5
Rajendra Sonia	41.16	57.7	165.2	207.6	3.88	6.5	26.44	39.5
BSR-2	55.50	81.3	258.8	375.0	5.18	9.6	38.32	60.0
Duggirala Red	54.10	102.6	247.6	370.8	5.56	12.5	44.96	56.3
Megha	44.76	69.6	174.4	274.4	4.79	7.8	24.05	38.1
LSD (0.05)	5.05	11.3	48.9	42.0	0.53	1.2	7.26	8.0
CV (%)	7.8	9.1	13.4	9.8	8.0	8.4	11.99	11.3

**Table 52. Rhizome bulking (fresh, dry) at 60, 120, 180 DAS and harvest**

Sampling	Mydukuru		Prathibha		Rajendra Sonia		BSR-2	
	(1)		(2)		(3)		(4)	
	Fresh (g)	Dry (g)	Fresh (g)	Dry (g)	Fresh (g)	Dry (g)	Fresh (g)	Dry (g)
60 DAS	44.82	5.47	53.14	5.38	41.16	3.88	55.50	5.18
120 DAS	81.0	9.39	69.76	7.57	57.72	6.45	81.32	9.61
180 DAS	242.8	45.71	269.8	46.35	165.2	26.44	258.8	38.32
Harvest	381.2	72.68	329.8	55.51	207.6	39.54	375.0	59.97

Contd...

Duggirala Red		Megha		CD (p=0.05)		CV (%)	
(5)		(6)		(7)		(8)	
Fresh (g)	Dry (g)	Fresh (g)	Dry (g)	Fresh (g)	Dry (g)	Fresh (g)	Dry (g)
54.10	5.56	44.76	4.79	5.05	0.53	7.8	8.0
102.56	12.49	69.6	7.82	11.33	1.20	8.4	9.2
247.6	44.96	174.4	24.05	48.92	7.26	12.0	13.4
370.8	56.32	274.4	38.06	42.02	8.03	11.3	9.84

Management of foliar diseases in turmeric using tolerant lines

Thirteen entries were evaluated. The incidence of leaf spot ranged from 1.1 to 13.6. All the entries had significantly lesser incidence of leaf spot disease. The lowest PDI was observed in NDH-74 (1.1 %), whereas maximum was observed in Mydukur (13.6 %).

Table 53. Growth, yield and foliar disease incidence in the disease tolerant lines of turmeric

S.No.	Name of the entry	Plant Height (cm)	Tillers	No. of leaves	Leaf length(cm)	Leaf width (cm)	Clump weight (g)	Projected Yield (t/ha)	Leaf Spot PDI
1	RH-406	79.9	3.7	14.2	43.6	10.3	227.0	17.5	5.6 (2.3)
2	RH-407	90.9	4.9	13.4	49.0	14.3	154.0	11.4	5.3 (2.3)
3	RH-410	93.8	2.9	13.3	47.3	14.1	209.7	16.4	5.3 (2.3)
4	TCP-14	88.2	3.1	11.3	47.1	13.0	165.2	12.1	2.5 (1.6)
5	TCP-129	100.9	3.9	18.9	48.0	13.9	199.8	14.6	2.2 (1.5)
6	TCP-161	89.4	3.5	13.7	48.4	13.4	174.3	13.5	3.9 (2)
7	CL-32	88.5	3.3	14.7	50.5	13.2	278.3	21.8	2.5 (1.6)
8	CL-34	92.3	3.3	15.1	49.9	14.5	238.4	18.1	2.2 (1.5)
9	CL-52	93.3	3.2	19.6	49.9	13.5	308.7	24.0	1.9 (1.4)
10	CL-54	93.7	3.2	15.5	50.5	13.9	327.0	25.8	1.7 (1.3)
11	NDH-40	90.9	3.3	15.8	51.5	13.9	206.8	15.5	4.7 (2.2)
12	NDH-74	89.9	3.7	18.3	48.8	13.0	212.4	16.6	1.1 (1)
13	Mydukur (c)	113.6	2.5	20.9	49.3	13.9	376.7	29.7	13.6 (3.7)
CD (p=0.05)		11.0	1.0	2.7	5.5	1.7	43.3	3.5	0.4



CV (%)	7.0	16.9	10.3	6.7	7.7	10.9	12.5	11.6
--------	-----	------	------	-----	-----	------	------	------

Organic production of turmeric

During 2018-19, it was observed that the organic production system significantly influenced number of tillers, number of leaves, weight of mother and primary rhizomes, clump weight and yield. All the three varieties tested, performed better under the organic production system.

Among the treatments, maximum yield was recorded in Mydukur (37.8 t/ha), followed by Prathibha (35.3 t/ha) and BSR-2 (33.8 t/ha) with IISR-Organic production system, which were on par with each other.

Table 54. Growth, yield attributes and yield of turmeric in organic production

S.No.	Name of the entry	Plant Height (cm)	No. of tillers	No. of leaves	Leaf length (cm)	Leaf width (cm)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Mydukur-Inorganic	93.2	3.9	25.3	44.1	14.7
2	Mydukur-Organic	99.4	4.7	28.5	47.4	15.9
3	Prathibha-Inorganic	93.1	4.0	26.2	43.8	14.8
4	Prathibha –Organic	97.7	4.7	28.9	45.8	15.3
5	BSR-2-Inorganic	93.3	3.9	23.1	44.1	14.6
6	BSR-2-Organic	99.1	4.1	25.5	48.0	15.6
CD (p=0.05)		NS	0.6	3.0	NS	NS
CV (%)		10.0	11.4	9.6	10.1	10.8

Contd...

No. of mother rhizomes	Weight of mother rhizomes (g)	No. of primary rhizomes	Weight of primary rhizomes (g)	Clump weight (g)	Yield (t/ha)
(8)	(9)	(10)	(11)	(12)	(13)
3.7	89.8	7.9	204.3	395.2	31.3
3.7	105.7	12.5	266.5	475.7	37.8
3.3	85.5	9.6	169.8	349.8	27.7
4.1	114.3	12.5	254.3	445.7	35.3
3.7	95.5	7.4	155.0	363.2	28.8
4.0	106.3	10.4	221.0	425.5	33.8
0.4	11.5	1.3	20.4	46.1	4.0
8.9	9.7	10.8	8.1	9.5	10.3

BREEDER SEED PRODUCTION



Breeder seed production was taken up during the year 2018-19 at HRS, Lam as per the E-mail dt 24.6.2018 of the Project Coordinator, AICRP on vegetable crops, IIVR, Varanasi.

Name of the Crops	Varieties	Indents (kg)	Quantity Accepted for Production (kg)	Quantity produced (kg)
Chilli	G4	0.35	0.35	0.35
Coriander	SUDHA	71.00	71.00	71.00
Coriander	CS-6	41.30	41.30	41.30

GINGER

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

MEDICINAL & AROMATIC PLANTS

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

AICRP on MAP & Betelvine

- In standardization of organic farming practices in *Acorus* trial, plant height, leaf length, distance between leaf emergence and rhizome width were found to be non significant among the various treatments. Maximum rhizome yield of 2.53 t/ha was recorded with RDF through inorganic source which was found to be on par with rest of the treatments except vermicompost @ 5t/ha and control. Highest BCR of 0.424 was recorded with RDF as inorganic source which was followed by FYM @ 15t/ha with BCR of 0.281.
- In standardization of organic farming practices in betelvine trial, pooled analysis revealed that vine length and number of branches were non significant whereas neem cake @ 1.5 t/ha recorded maximum leaf length of 11.55 cm, while RDF in inorganic form recorded maximum leaf width of 8.21 cm. Vermicompost @ 7.5 t/ha recorded maximum leaf yield of 50.57 lakh leaves / ha which was on par with RDF through inorganic source (50.31 lakh leaves/ha), neem cake @ 1.5 t/ha and FYM @ 15 t/ha. Highest BCR of 1.17 was recorded with Vermicompost @ 7.5 t/ha and RDF in inorganic form which was followed by FYM @ 15 t/ha with BCR of 1.12.

PLANTATION CROPS

COCONUT

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

1. Agr.10: Evaluation of nutrient management under coconut based cropping system for different agroclimatic regions.

Treatments:

T1 – 75 % of Recommended NPK + Organic recycling with vermicompost.



T2 - 50 % of Recommended NPK + Organic recycling with vermicompost + vermiwash application + biofertiliser application and *in situ* green manuring.

T3 - Fully organic: Organic recycling with vermicompost + vermiwash application + biofertiliser application and *in situ* green manuring & green leaf manuring (Glyricidia) + composted coir pith and mulching with coconut leaves.

T4 - Mono block of coconut

The coconut based cropping system of Coconut + Cocoa + Banana + Pineapple + Elephant Foot Yam (Kharif) - Tomato (Rabi) + Heliconia was started during 2008 in 20 years old Godavari Ganga plot. As per the proceedings of 27th Annual group meet of AICRP, curry leaf was planted in place of elephant foot yam in October 2018. The mean nut yield and copra content and oil content was higher in T-1 with 152.9 nuts, 154.3g and 68.8%, respectively followed by T-2 (148.2 nuts, 150.8g and 66.9%). With respect to intercrops also higher yields were recorded in T1 treatment followed by T-2 and T-3 (Table-2). The results indicated that integrated nutrient management with 75% recommended NPK with organic recycling with vermicompost recorded higher net income of Rs 2,83,806 per ha followed by 50% recommended NPK and organic recycling (Rs 2,62,361 per ha) and fully organic treatment (Rs.176819 per ha) (Table-5). However, the earthworm population and microbial population was higher in treatment T₃ followed by T₂ and T₁ (Table-6).

Table.19: Growth and yield parameters of coconut

Treatments	No. of leaves on crown	No. of bunches per year	No. of buttons per bunch	Nut yield per palm per year	Copra content (g)	Oil Content (%)
T ₁	36.3	12.7	26.4	152.9	154.3	68.8
T ₂	34.1	12.1	25.1	148.2	150.8	66.9
T ₃	33.7	12.5	23.8	135.5	150.2	67.2
T ₄	32.6	11.6	22.2	123.3	144.6	66.3

Table.20: Yield of component crops in CBCS

Treatments	Cocoa Dry beans/tree(kg)	Banana (Bunch weight kg/plant)	Pineapple (g per plant)	* Curry leaf	Heliconia (spikes/plant)
T ₁	2.7	7.6	700.7	-	12
T ₂	2.5	6.9	668.6	-	10
T ₃	1.5	5.6	570.5	-	8
T ₄	--		--		--



*As per the technical programme elephant foot yam followed by tomato was replaced with curry leaf (local variety) and planted during October 2018 and were established.

Table.21: Soilmoisture Content (%)

Treatments	Summer month & Depth of soil											
	March			April			May			June		
	0-30cm	30.-60cm	60-90 cm	0-30cm	30.-60cm	60-90 cm	0-30cm	30.-60 cm	60-90 cm	0-30cm	30.-60 cm	60-90 cm
T ₁	16.5	20.4	22.8	16.5	18.4	20.5	16.1	17.3	17.7	15.2	16.1	17.3
T ₂	18.4	22.0	24.3	17.5	19.1	22.1	16.2	17.2	18.5	16.4	17.3	18.2
T ₃	18.5	23.5	24.8	18.2	19.3	22.3	17.5	18.5	19.2	18.3	19.2	19.3
T ₄	15.1	17.4	18.4	14.3	17.2	17.2	14.5	14.1	15.4	15.5	16.2	17.4

Table.22: Yield of coconut and intercrops per plot and per hectare in CBCS

Crops	Coconut (No.of nuts)		Cocoa (Kg dry beans)		Pineapple (Kg)		Banana		Heliconia (No.of spikes)	
	Yield/p lot	Yield/ha	Yield/p lot	Yield/ha	Yield/p lot	Yield/ha	Yield/p lot	Yield/ha	Yield/p lot	Yield/ha
T ₁	3670	27063.3	97	716	202	1488.9	820.8	6049.6	1944	14340
T ₂	3557	26231.4	90	663	193	1420.7	745.2	5492.4	1620	11950
T ₃	3252	23983.5	54	398	164	1212.3	604.8	4457.6	1296	9560
T ₄	2959	21824.1	--	--	--	--	--	--	-	-

Table.23: Economics of CBCS

Treatments	Gross returns (Rs/ha)	Cost of cultivation (Rs/ha.)	Net returns(Rs/ha.)	B:C ratio
T ₁	409449	125642	283806	3.25
T ₂	382895	120534	262361	3.17
T ₃	299144	122325	176819	2.44
T ₄	130945	68252	62693	1.91

**Table.24: Earthworm and microbial population in different treatments**

Treatments	Depth (0-30 cm) (population in sq.m soil)	Bacteria (Nutrient Agar medium) (x 10 ⁵ cfu/g)	Trichoderma (Trichoderma specific media) (x 10 ³ cfu/g)
T ₁	30	7.4	9.1
T ₂	32	7.8	9.4
T ₃	35	8.0	9.8
T ₄	21	6.4	8.9

Coc./Agron.14: Soil and Nutrient management in coconut**Expt 3: Coconut based cropping systems for different agro- climatic regions****Treatments- 5**

T₁: *In situ* organic matter recycling + PGPR consortia + *In situ* green manuring + Husk burial

T₂: *In situ* organic matter recycling, + PGPR consortia + *In situ* green manuring + Husk burial + 25 kg FYM

T₃: T₁ + 50 % recommended K₂ O through the application of Sulphate of potash

T₄: T₂ + 50 % recommended K₂ O through the application of Sulphate of potash

T₅: Conventional method (Chemical fertilizer application)

Design : RBD Replications : 4; No. of palms per treatment: 6; Year of start: 2014-15

The trial was initiated during 2015 in 30 years old East Coast Tall plantation with four replications. Cocoa cv. Forestero and banana (cv. T.C.Keli) were planted as intercrops. As per the technical programme, initial soil samples were collected and sent to CPCRI, Kasargod for analysis of soil physico chemical properties and microbial analysis. The Cocoa crop is four years old and is in bearing stage and the growth characters of cocoa were recorded. The growth and yield parameters of coconut and yield parameters of banana were recorded.

With respect to coconut, no significant differences were noticed for total number of leaves produced/palm and number of bunches/palm/year. However, nut yield per palm differed significantly among the treatments. The treatment T-4 recorded significantly highest yield (127.25 nuts/palm/year) followed by T-5 and T-1 with 121.25 and 121.15 nuts/palm/year, respectively. Further, the pooled data on nut yield from 2016 to 2019 revealed that T5 and T4 had a high nut yield of 127.85 and 127.55 nuts/palm/year, respectively followed by T2 treatment (123.85 nuts/palm/year) (Table 25).

Table.25: Influence of different treatments of organic farming on growth and yield parameters of coconut



Treatments	No. of leaves on crown/palm	No. of bunches/palm	Coconut Yield 2015-16 (nos)	Coconut Yield 2016-17 (nos)	Coconut Yield 2017-18 (nos)	Coconut Yield 2018-19 (nos)	Pooled mean yield (2016-19)
T ₁	33.04	8.32	117.37	120.4	122.5	121.15	121.35
T ₂	33.71	8.79	118.05	124.5	126.8	120.25	123.85
T ₃	32.37	7.49	115.83	118.5	120.4	116.50	118.47
T ₄	33.45	8.47	121.27	126.5	128.9	127.25	127.55
T ₅	34.37	9.01	132.62	130.5	131.8	121.25	127.85
SEm ₊	0.78	0.55	13.73	0.30	9.0	1.87	-
CD at 5 %	N.S.	N.S.	N.S.	0.96	28.17	5.75	-

Different treatments had no significant influence on cocoa with regard to plant height and height at first branching. However, the treatment (T₂) recorded significantly the maximum plant girth (32.5 cm) followed by T₄ (29.9 cm) & T₁ (27.4 cm). The treatment T₄ recorded higher number of pods (34.6) followed by T₂ (32.1), T₅ (30.8) and T₁ (30.5). Further, the dry bean yield was significantly high in T₄ (1.5 Kg) which was at par with T₂ (1.2Kg) (Table 26).

Table.26: Vegetative characters of cocoa as influenced by organic farming.

Treatments	Plant height(cm)	Girth(cm)	Height at first branch(cm)	No. of pods	Dry bean yield (Kg)
T ₁	340.8	27.4	90.5	30.5	0.8
T ₂	367.3	32.5	99.8	32.1	1.2
T ₃	333.1	27.3	95.8	29.8	0.9
T ₄	356.2	29.9	95.1	34.6	1.5
T ₅	335.1	24.6	110.7	30.8	0.8
SEm ₊	12.1	0.9	4.02	0.73	0.15
CD at 5 %	N.S	2.9	12.40	2.26	0.46

With regards to banana yield and yield attributes there were significant variations for total number of fingers per bunch and bunch weight. Significantly higher bunch weight (6.1 Kg) was recorded in T₄ treatment followed by T₂ (5.5 Kg), T₁ (5.2 Kg) and T₃ (5.1 Kg). However, a significantly higher number of fingers per bunch were recorded in T₁ treatment (48.6) followed by T₄ treatment (46.9) (Table 27).

Table.27: Influence of organic farming on yield and yield attributing parameters of banana:

Treatments	No. of hands per bunch	Total no. of fingers	Bunch weight(kg)
T ₁	4.4	48.6	5.2
T ₂	4.4	46.1	5.5
T ₃	3.8	43.5	5.1
T ₄	4.4	46.9	6.1
T ₅	3.6	43.5	4.8



SEm _±	0.3	1.02	0.11
CD at 5 %	N.S	3.17	0.34



C. POST HARVEST TECHNOLOGY

POST HARVEST TECHNOLOGY RESEARCH STATION, V.R.GUEDEM

1. “Studies on effect of ripening structures on fruit ripening and quality of Mango” (*Mangifera indica* L.)

Significant differences were observed among the treatments for all the characters. The treatment, Ethylene gas cylinder + ripening chamber recorded the minimum days (1.50 days) for fruit ripening and maximum TSS (21.98°Brix) at 7th day. Whereas the minimum physiological loss of weight at 7th day *i.e.* 1.23 % was recorded in Ethylene gas cylinder + Low cost poly sheet pipe structure. The maximum firmness of the fruit at 7th day *i.e.* 8.48kg/cm² was recorded at ambient condition (Control). The minimum spoilage of fruits at 7th day *i.e.* 0.00 % was recorded at ambient condition (Control) and the maximum spoilage of fruits at 7th day (57.14 %) was recorded in Ethylene gas cylinder + ripening chamber treatment.

2. “Standardization of recipe of guava nectar and evolution of quality attributes during storage”

The combination of three pulp concentrations *viz.*, 15%, 20% and 25% and two storage temperature conditions *viz.*, ambient and refrigerated conditions were taken up for the study and the parameters *viz.*, TSS, titrable acidity, total sugars, microbial contamination were increased significantly, whereas p^H, Vitamin-C and overall acceptability were significantly decreased during entire storage period of 45 days. Spoilage was observed after 30th day in all treatments under ambient storage conditions. However, the treatments were continued up to 45th day at refrigerated condition. At 45th day, the treatment 25% pulp + 15°Brix + 0.2% acidity recorded highest organoleptic score, maximum TSS (16.12°Brix), total sugars (15.16%), Vitamin-C (22.40 mg) and highest overall acceptability (6.80).

3. “Study on different drying methods of drumstick (*Moringa oleifera* L.) leaves and evaluation of nutritional composition”

Among all the different drying methods (shade drying, oven drying, mechanical drying, sun drying and solar drying) mechanical drying method recorded the minimum time for drumstick leaf drying (14 hours). The parameters *viz.*, rehydration ratio, Vitamin-C, fiber content, protein content and fat content were decreased significantly, whereas moisture content, ash content were increased significantly during the entire 120 days storage period. The minimum changes in biochemical parameters among all the treatments during the storage period were observed in mechanical drying method.

4. Evaluation of value added beverages from blends of aloe, aonla and nannari

Physico-chemical properties of formulated beverages during storage were studied at both ambient and refrigerated temperature conditions and significant differences were observed among the treatments for all the observations. The sensory score for taste on initial day was recorded maximum (7.80) in both aloe: aonla: nannari @20:20:60 at ambient condition and aloe: aonla: nannari @20:20:60 at refrigerated condition and minimum sensory score (6.50)



for taste in both aloevera:aonla:nannari @100:0:0 at ambient condition and aloevera:aonla:nannari @100:0:0 at refrigerated conditions respectively and it was decreased with the advancement of storage period. The sensory score for flavour on initial day was recorded maximum (7.40) in both aloevera:aonla:nannari @20:20:60 at ambient condition and aloevera:aonla:nannari @20:20:60 at refrigerated condition and minimum (6.40) in both (aloevera:aonla:nannari @100:0:0 at ambient condition and aloevera:aonla:nannari @100:0:0 at refrigerated condition respectively) and it was decreased with the advancement of storage period.

The sensory score for overall acceptability on initial day was recorded maximum (7.60) in both aloevera:aonla:nannari @ 20:20:60 at ambient condition and aloevera:aonla:nannari @ 20:20:60 at refrigerated condition and minimum (7.10) in both aloevera:aonla:nannari @100:0:0 at ambient condition and aloevera:aonla:nannari @100:0:0 at refrigerated condition respectively and it was decreased with the advancement of storage period. On 45th day, the maximum score for overall acceptability (7.52) was recorded in aloevera:aonla:nannari @ 20:20:60 at refrigerated condition and minimum (6.94) in aloevera:aonla:nannari @ 100:0:0 at ambient condition.

5. Studies on the optimization of blends and sensory evaluation of functional herbal RTS beverages

Physico-chemical properties of formulated beverages with lime, mint, ginger and sugar syrup during storage was studied at ambient temperature conditions and the maximum sensory score for taste (7.00), pungency (7.40), colour and appearance (7.40) on initial day was recorded in 35ml lime + 5 ml mint + 15ml ginger + 45 ml sugar syrup and it was decreased with the advancement of storage period. The sensory score for overall acceptability on initial day was recorded maximum (7.45) in 35ml lime + 5ml mint + 15ml ginger + 45ml sugar syrup) and minimum (7.20) in 55ml Lime + 45ml sugar syrup and it was decreased with the advancement of storage period. On 60th day, the maximum score for taste (7.27) was recorded in 35ml lime + 5 ml mint + 15ml ginger + 45 ml sugar syrup and minimum score for taste (7.00) in 55 ml Lime + 45ml sugar syrup.

6. Studies on the effect of cultivar and slice thickness on quality and storage of fried cassava chips

It was observed that among the three slice thickness *viz.*, 1mm, 2mm and 3mm, the chips prepared from 1mm slice thickness has recorded the highest consumer acceptability and the chips prepared from 3mm slice thickness has recorded the lowest consumer acceptability. Among the four cultivars and three slice thickness studied, the fried cassava chips prepared from the cultivar Ci-850 with 1mm slice thickness has recorded the highest sensory score for texture (8.30), taste (8.10), colour (8.10) and overall acceptability (8.16) followed by the cultivar Ci-800 with 1mm slice thickness for texture (8.20), taste (8.15), colour (8.00) and overall acceptability (8.11) and the cultivar-150/1 with 3mm slice thickness was recorded the lowest sensory score for texture (6.90), taste (7.10), colour (7.00) and overall acceptability (7.00).

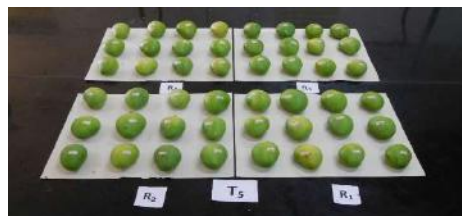
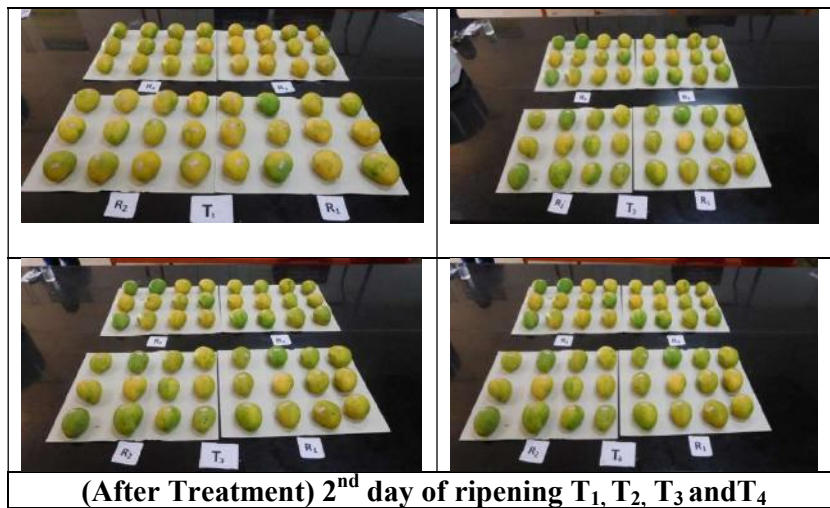
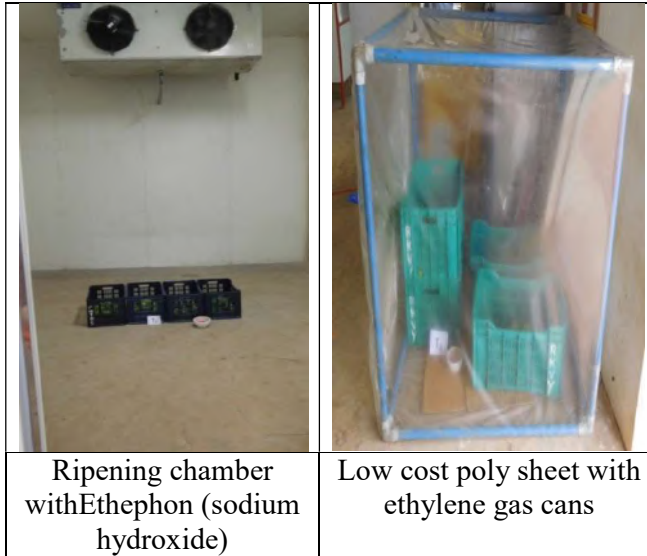
PHOTO GRAPHS OF RESEARCH ACTIVITIES

Project 1: “Studies on effect of ripening structures on fruit ripening and quality of Mango (*Mangifera indica* L.)”



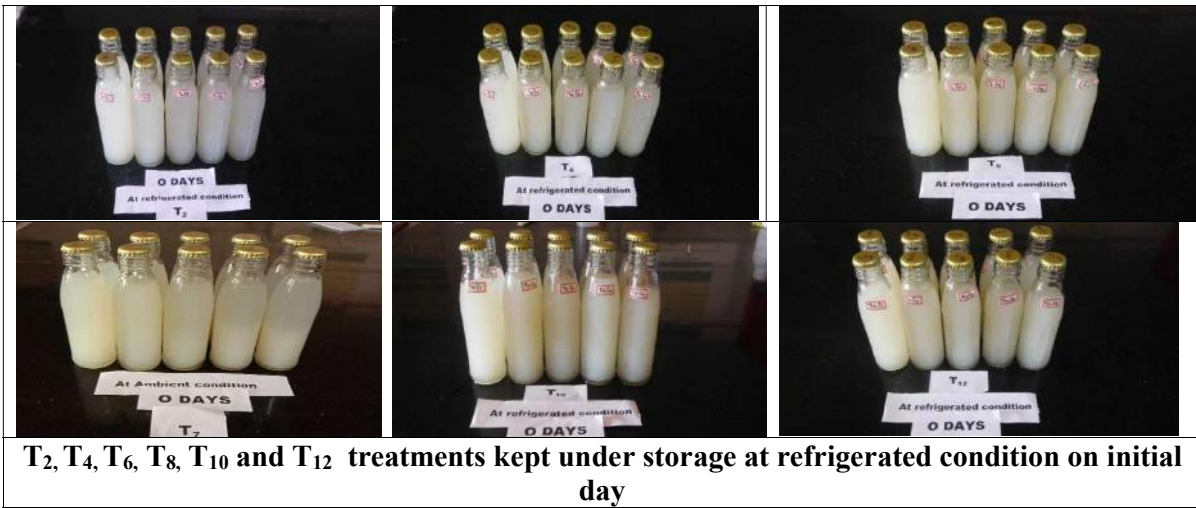
Dfferent Ripening Structures

	
<p>Ripening chamber with ethylene gas cylinder</p>	<p>Low cost poly sheet with ethylene gas cans</p>



T₅-Untreated mango fruits on 2nd day (Control)

Project 2: “Standardization of recipe of guava nectar and evaluation of quality attributes during storage”



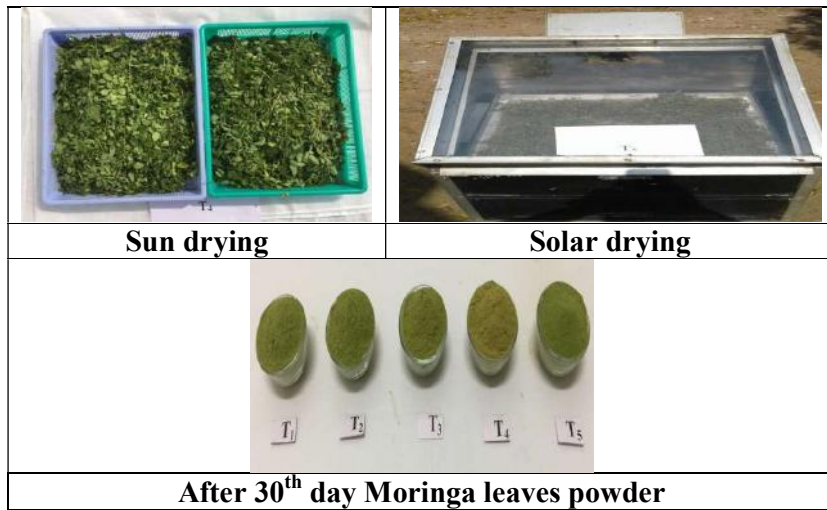
Spoilage of guava nectar under ambient condition after 30days

Project 3: Study on different drying methods of drumstick (*Moringa oleifera* L.) leaves and evaluation of nutritional composition of drumstick leaf powder





Moringa leaves for different drying method



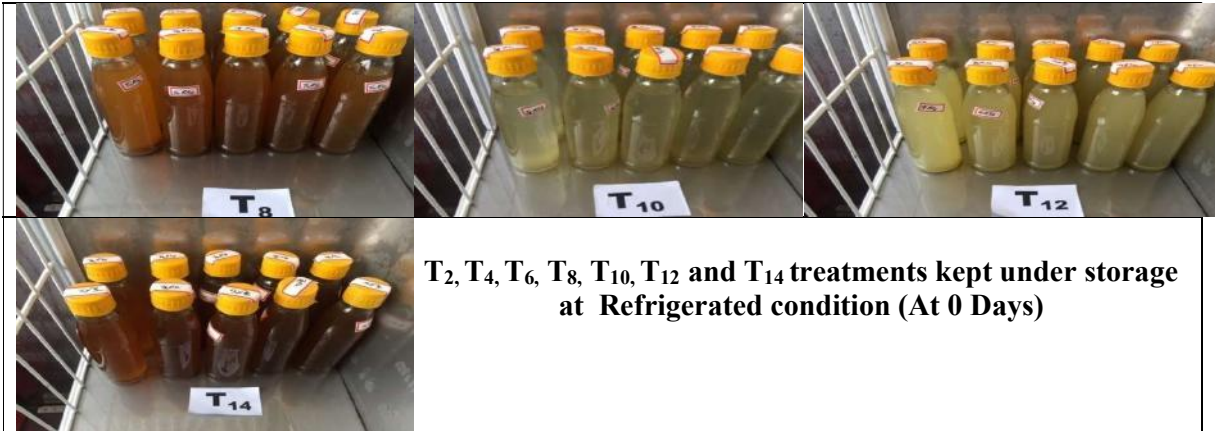
Project 4: “Evaluation of value added beverages from blends of aloe, aonla and nannari”





Extraction of nannarisyrup from roots of Indian Sarsaparilla



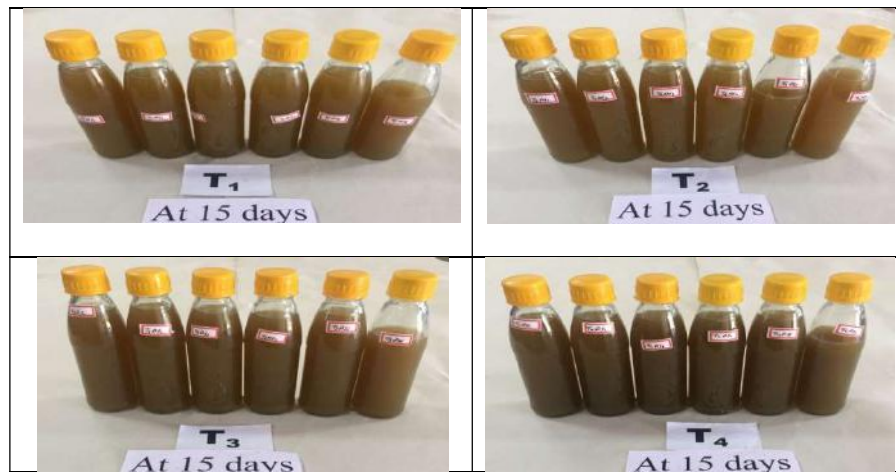


Project 5: “Studies on the optimization of blends and sensory evaluation of functional herbal RTS beverages”

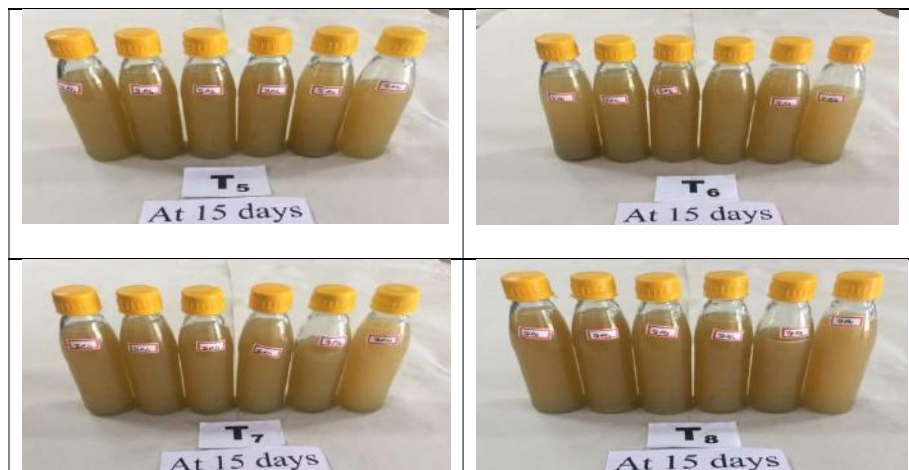




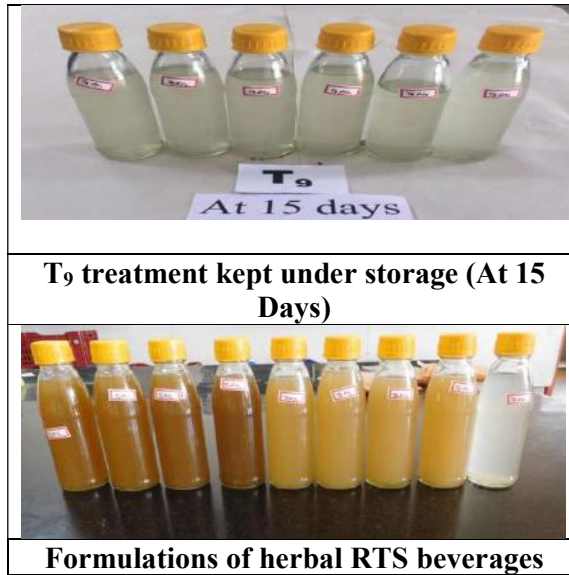
Raw materials and juice extraction from Anola, Mint & Ginger



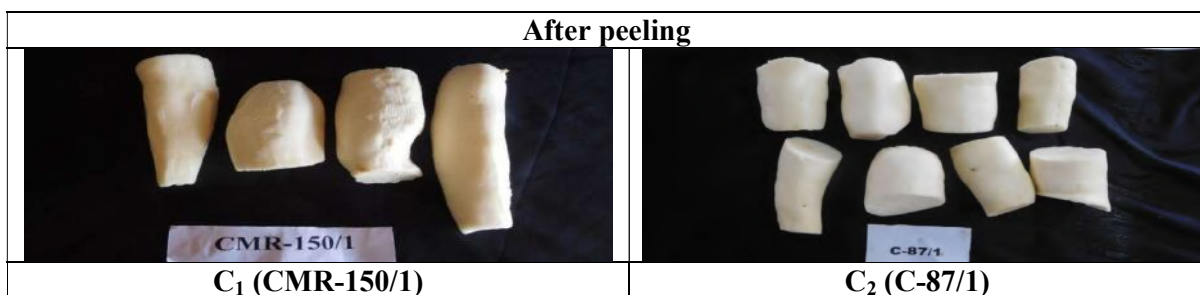
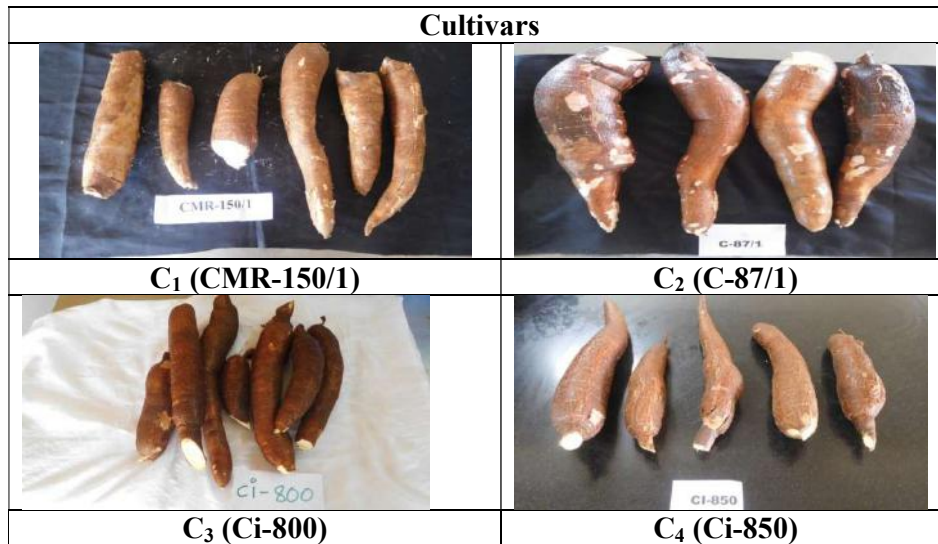
T₁, T₂, T₃, and T₄ treatments kept under storage (At 15 Days)



T₅, T₆, T₇, and T₈ treatments kept under storage (At 15 Days)

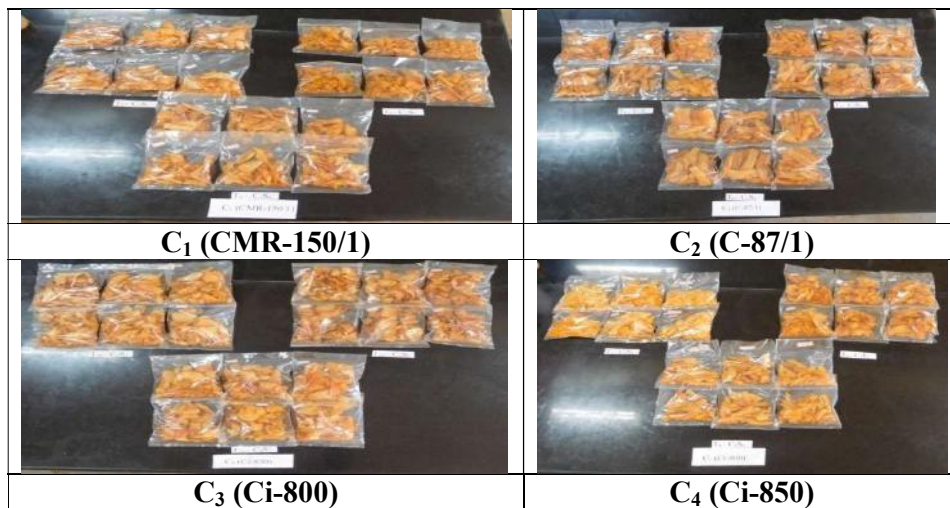
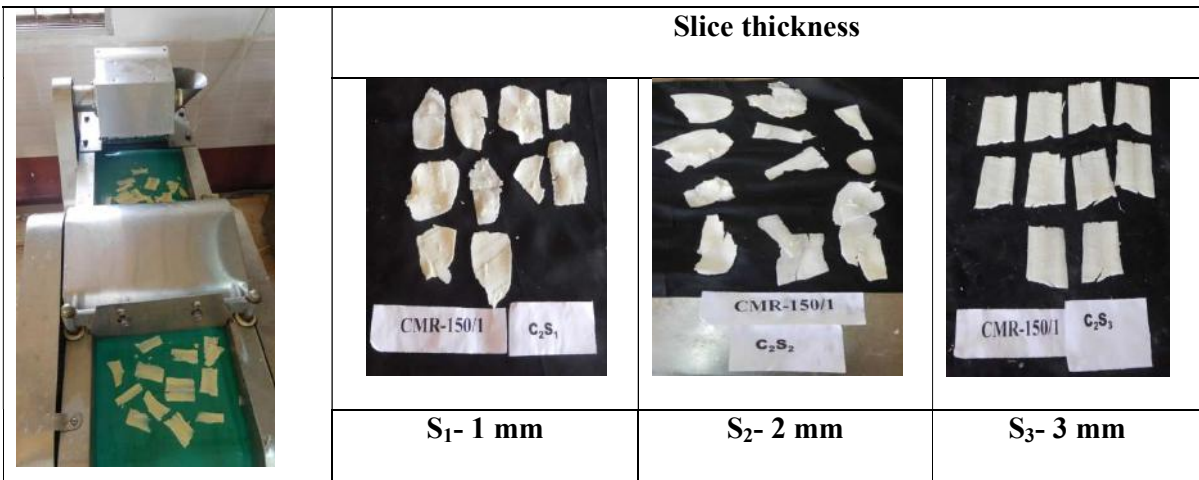


Project 6: “Studies on the effect of cultivar and slice thickness on quality and storage of fried cassava chips”





Slice cutting with vegetable slicer and chopping machine



D. ENTOMOLOGY

FRUITS

HORTICULTURAL RESEARCH STATION, KOVVUR

Surveys were conducted in East Godavari and West Godavari districts of Andhra Pradesh. Infestation of fruit borer, fruit fly, mealy bug and leaf webber was observed in jack fruit during the surveys (Fig: 6). Among them, fruit borer was found to be the major pest of Jackfruit and its infestation ranged between 0.5 – 28.0 per cent. Infestation of mealy bug was observed at Tadepalligudem village of West Godavari district in the range of 0 – 3.5% followed by fruit fly (2.5%). Leaf webber infestation was observed up to 2%.



Fig: 6 Insect pest incidence map of Jack fruit in Andhra Pradesh (2018-19)

Diversity and distribution mapping of economically important nematodes in the country (Plant Parasitic Nematodes PPNs)

In Andhra Pradesh, the root-knot nematode *Meloidogyne* spp was found to be dominant genus causing major damage in fruit crops by forming root galls on banana, guava and papaya, and another genus i.e., *Radopholussimilis* and *Pratylenchusspp* causing root lesions with stunted growth along with chlorotic leaves reducing the fruit yields drastically in banana and citrus. In tuber crops i.e., elephant foot yam, sweet potato, chinese potato and in flowers crops viz., tuberose, crosandra and in medicinal crops- Kasturi bhendi, in Spice crops –turmeric, black pepper were also infested and observed causing very serious economic losses in entire Andhra Pradesh state.

Screening, confirmation and field evaluation of promising resistant germplasm of Chilli against major nematodes

The Chilli accessions (50 no) given by PC Cell, were found to be tolerant or unable to form galls on the roots, when inoculated with J2's @ 1000/plant at 15-20 days age of crop. It was confirmed twice for the all 50 accessions.

Bio management of root-knot nematode, *Meloidogyne incognita* in bottle gourd

In Biomanagement of root-knot nematode, *Meloidogyne incognita* in bottle gourd, maximum yield of 4.46 t/ha was recorded under treatment (Neem cake @ 1t/ha along with seed treatment of *Pseudomonas putida* @ 10g/kg seed) during the year 2018-19.



Bio management of root-knot nematode (*Meloidogyne* spp.) and fungal wilt complex (*Fusarium* spp.) in guava

In Bio management of root-knot nematode (*Meloidogyne* spp.) and fungal wilt complex (*Fusarium* spp.) in guava, it was observed that, there is a reduction in nematode population per 200cc of soil, when the guava plants are raised with sorghum (fumigator) as intercrop/alley crop in basin area and chopping the vegetative sorghum material @ 3kg/m² mixed in basin area, followed by application of *Purpureocillium lilacinum*@15g/plant + Neem cake @100g/plant at every three months interval and growing marigold crop around the basin of guava plants.

Evaluation of new chemical molecules against *Meloidogyne* spp. infecting guava

Under Evaluation of new chemicals against *Meloidogyne* spp. infecting guava, application of fluensulfone @ 30 g /plant and again after 3 months with same dosage in basin area, recorded good root growth compared to all the other treatments without any phytotoxicity symptoms.

Evaluation of new chemical molecules against *Meloidogyne* spp. infecting cucumber in polyhouse.

Under Evaluation of new chemicals against *Meloidogyne* spp. infecting cucumber in polyhouse, the chemical fluensulfone @ 3 g (product)/plant one DAT by ring method manually was very effective in controlling the nematode population load per 200 cc of soil and has given the yield of 2.9 kgs/plant and also recorded good root growth compared to all the other treatments without any phytotoxicity symptoms.

Documentation of nematode infested horticultural nurseries in the state

Observed root galls due to nematode in fruit crops raised in private nurseries, educated the nursery men on the severity of nematode problem and the recommendations to manage in an effective and proper way were given.

Demonstration on integrated nematode management on cucumber in polyhouses

Under integrated nematode management on cucumber in polyhouse conditions, removal of previous crop roots + solarisation + application of *Purpureocillium lilacinum* @ 2 kg in 1 ton FYM in beds after solarization was very effective in managing the nematode load in the soil.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- In experimental plots of HRS, Venkataramannagudem a total of eighteen insect species and one non-insect species including three Coleopteran defoliators, eight Hemipteran sucking insect species and seven Lepidopteran insects were reported on five medicinal plants. Similarly, during roving survey, Lepidopteran defoliators as well as Hemipteran sucking pests were recorded from both tulasi and Japanese mint crops.



- In *Mucuna pruriens* whitefly was found to be maximum (5.3 /three leaves) in the 2nd week of September and that of rugose spiraling whitefly (0.9 egg spirals/ 3 leaves) during the 2nd week of December. Leaf miner incidence on *P. corylifolia* was maximum (1.4 /three leaves) during the 1st week of November. Peak incidence of aphids (7.0/plant) and whitefly (2.3/three leaves/plant) on *A. moschatus* was found during the 1st week of January and that of seed bug (11.2/plant) during the last week of February.
- Spiders were recorded as natural enemies against lepidopteron species while, coccinellid beetle *Chilomenessexmaculata* was recorded against aphids on *Solanum nigrum* and *Abelmoschus moschatus*.
- In *M. pruriens*, 51.26 per cent yield loss was recorded due to the incidence of whitefly and ash weevil, while in *S. nigrum*, the loss in yield was almost negligible i.e., 4.34 % caused due to the incidence of fruit and shoot borer, leaf miner and thrips.
- The incidence of the invasive pest, rugose spiralling whitefly (RSW) was noticed for the first time on betelvine at the station and Imidacloprid 17.8SL @ 0.4 mL/L was found to be effective in reducing the pest population by 43.42 per cent followed by Azadirachtin 10,000ppm @ 1 ml/L and NSKE 5% with 39.40 and 37.33 percent reduction in population 1 DAS.

MANGO RESEARCH STATION, NUZVID

Survey and surveillance of mango pests and natural enemies in mango growing tracts of A.P:

Highest population of hoppers (46/ panicle) and thrips (17/ panicle) was observed during 1st fortnight of February. Fruit borer incidence was observed at second fortnight of February and highest damage to the crop occurred in second fortnight of March coinciding with stone formation stage. Fruit fly population was significantly positively correlated with temperature and negatively correlated with precipitation. Maximum population of fruitfly (390/trap) was observed in second fortnight of April. Thrips infestation was recorded in Mylavaram and Reddygudem mandals as major pest. Both hoppers and thrips infestation was recorded in Nuzvid, Agiripalli, Vissannapeta and Musunooru mandals as major pests.

Management of guava fruitfly using traps:

In guava field with Taiwan variety recorded more number of fruit flies i.e 65 using traps with concentration (Ethyl alcohol, Methyl eugenol and Malathion @ 3:2:1) whereas the field with local variety and traps with concentration (Ethyl alcohol, Methyl Eugenol and Malathion @ 2:3:1) has recorded less number of fly catches i.e 8 compared to the other fields.

HORTICULTURAL RESEARCH STATION, MAHANANDI

1. Survey and studies on species diversity of nematode populations in horticultural crops in Rayalaseema Zone of Andhra Pradesh

Preliminary results revealed that 30-40% of guava orchards in Kadapa district were severely affected by nematode infestation followed by 25-35% of nematode infestation in Anantapur



2. Evaluation of certain insecticides against Onion thrips

Two sprays of lambda cyhalothrin 5 EC @ 1 MI/L or Spinosad 45 SC @ 0.36 MI/L at 10 days interval reduced the thrips population with highest yield of 10-11 t/acre.

3. Management of rhizome fly (*Mimegrallacoeruleifrons*) in turmeric cv. Mydukur

Overall infestation of rhizome fly was less irrespective of the treatments. However, the results revealed that application of fipronil 0.03GR @ 25kg/ha followed by chlorantraniliprole 0.4GR @ 10kg/ha found to be effective in reducing rhizome fly infestation.

4. Survey and surveillance of pests on major vegetable crops in Kurnool (Dt.)

During the survey was conducted in horticultural crops, 01-75% of leaves per plant showed curling in chillies, 01-20% of leaf damage in onion due to thrips population, diamond back moth 5-6 larvae/head in cabbage and 5-10 larvae and 2-4 pupa/curd in cauliflower. Jassids (4.0/plant), fruit and shoot borer (30-40%), thrips (1-25% of leaf curling) and whitefly (5.45/plant) were recorded on brinjal. Leaf miner (50-70%), fruit borer (10-20%) and whitefly (5.3/plant) on tomato. In bhendi, jassids (6.02/plant), whitefly (4.62/plant), fruit and shoot borer (40-50%), and 01 - 25% of curling due to thrips was recorded.

CASHEW RESEARCH STATION, BAPATLA

1. Evaluation of insecticides for the control of TMB and other insect pests.

The activity of different important foliage, flower and nut feeding pests of cashew was medium to low during the season. Incidence of leaf and blossom webber was very low (almost zero) in all treatments. With regard to Shoot tip caterpillar, leaf miner and apple and nut borer, treatment T₇ (λ -Cyhalothrin 0.6 ml/l) and treatment T₈ (Monocrotophos 36 SL @ 1.6 ml/l at flushing, Chlorpyrifos 20 EC @ 2.0 ml/l at flowering and Profenofos 50 EC @ 1 ml/l at fruit & nut development stage) were found to be more effective in managing the pest compared to rest of the treatments. Population of spiders was maximum in untreated check. However, among the treated plots the treatment T₅ (*Beauveria bassiana* WP @ 1 g/l), T₆ (*Beauveria bassiana* WP @ 5 g/l) and the treatment T₄ (Buprofezin 25 SC @ 2 ml/l) recorded maximum population of ants and spiders at 30 days after 1st spray.

2. Control of Cashew Stem and Root borer. Curative Trail (Post extraction prophylaxis)

Among the insecticides evaluated as post extraction prophylaxis, Imidacloprid (Swabbing and drenching) @ 2ml/l has offered protection to the tune of 82.60 % trees without re-infestation followed by fipronil swabbing @ 2 ml/l with 73.90 % trees without re-infestation. The other treatments Chlorpyrifos 10 ml/l (Treated Check) and neem oil 5% (Swabbing) has offered 69.6 and 60.90 percent protection without re-infestation and are superior over the control treatment which recorded 39.10 % trees without re-infestation. Preferential zone of attack is



stem + collar + root in 30.40 percent of trees (35/115) followed by color+root in 22.60 percent of trees (26/115).

3. Influence of biotic and abiotic factors on the incidence of pest complex of cashew

The relation between the percent pest damage (Y) and weather variables such as Max.Temp (X₁), Min.Temp.(X₂), Relative Humidity (m) (X₃), Relative Humidity (e) (X₄) and Rainfall (X₅) was worked out by subjecting the data collected over 28 standard weeks to Multiple Linear Regression Analysis.

Shoot tip caterpillar population showed significant positive correlation with Relative Humidity (m) (X₃) and remaining weather variables were found to influence the damage by shoot tip caterpillar independently and all five independent variables have accounted for 31.76 percent of total variation in percent shoot damage by shoot tip caterpillar ($R^2=0.3176$). Relationship of per cent leaf and blossom webber damaged shoots, per cent leaf damage caused by leaf miner, leaf folder damaged leaves and percent nut damage by apple and nut borer (ANB) with selected weather variables was subjected to multiple regression analysis. Results revealed that none of the variables was found to influence the damage by these pests independently.

4. Screening of germplasm to locate tolerant/ resistant types to major pests of the region.

Among the 39 accessions screened, **BLA 139-1** has recorded highest incidence of leaf and blossom webber (2.04%) and remaining entries recorded the lowest incidence (0.00-1.24%). The accession **ABT-3** has recorded the highest incidence of leaf miner (9.00%) and **Hy 94-T4** has recorded the lowest incidence (0.64%). With regard to the incidence of leaf folder, the **ABT-3** has recorded the highest incidence (2.94%) and **Hy-94-T4**, **ASRPT** and **T.No.129** recorded no incidence during this season (0.00%). The accession **ASRPT** has recorded the highest incidence of shoot tip caterpillar (2.60%) where as in **M 15/4** and **T.No. 71** no incidence was observed during this season (0.00%). The accession line **BLA 139-1** has recorded highest incidence of apple and nut borer (22.00%) whereas in **T.No. 1/1**, **T.No-7/12** and **Hy 94-T4** no incidence was recorded during this season (0.00%).

CASHEW RESEARCH STATION, TIRUPATI

4. Integrated Management of Citrus Greening Disease

Third season experiment was conducted in existing garden. Among the treatments highest percent of disease reduction of 47.06 and 42.51 was recorded in T₄ and T₅, respectively and were on par with each other. Highest canopy volume increase was observed in T₄ (11.10%), T₃ (8.44 %) and T₅ (8.28 %). Similar way highest fruit yield per tree was recorded in T₄ (33.89 kg/tree) followed by T₅ which recorded 29.22 kg/tree. It is clearly indicated that the application of additional phosphorus and Zinc and Iron reduced the symptom expression and increased the canopy volume and fruit yield per tree.

Table 6: Effect of additional Phosphorus nutrition, antibacterial compound and micronutrients on the incidence of greening



Treatments	Per cent reduction in disease severity	Per cent increase in canopy volume	Yield (Kg/plant)
T ₁ : 50% more than recommended dose of Phosphorus (RDF)	22.57 (28.20)	4.33 (11.86)	20.88
T ₂ : Tetracycline hydrochloride 600 ppm	28.52 (32.19)	6.18 (14.38)	25.31
T ₃ : Tetracycline hydrochloride 600 ppm + ZnSO ₄ + FeSO ₄ (200 g each)	35.49 (36.38)	8.44 (16.79)	27.64
T ₄ : T ₁ + T ₃	47.06 (43.29)	11.10 (19.43)	33.89
T ₅ : T ₁ + ZnSO ₄ + FeSO ₄ (200 g each)	42.51 (40.65)	8.28 (16.69)	29.22
T ₆ : Insecticide (Thiamethoxam 0.3 g/l & after 15 days interval Imidacloprid 200 SL @ 0.4 ml/L)	37.41 (37.68)	4.56 (12.21)	21.14
T ₇ : Control	23.33 (28.63)	4.03 (11.09)	21.92
CD	8.572	3.721	4.023
SE(m)	2.752	1.194	1.291
CV	13.506	14.134	8.698

Non plan experiments

6. Multi-location testing of Australian sour orange rootstock

The seedlings were planted in secondary nursery and Budding was carried out with disease free bud material from the screen house. Experiment is under progress.

7. Status of emerging insect pests and their natural enemies in Citrus

Among the major insect pests observed, thrips infestation on fruits was moderate (7-10%), citrus hindu mite on foliage was very severe (>80%) whereas on fruit it was severe (18-20%), rust mite damage was moderate to high (10-12%), snow scales moderate to high (25-40%), psylla damage was noticed on acid lime from high to severe (25-42%), leaf miner damage from low to moderate (6-12%) and ash weevil showed damage to an extent of 7-12% i.e. low to moderate levels and no new insect pest was observed in the surveyed areas. The natural enemies population was nil in both sweet orange and acid lime gardens.

Details of the orchard

Location	Name of farmer	Crop/cv./rootstock	Age of the tree	No. of the trees	Stage of the tree	Area	Condition (Healthy/declined/semi declined)
----------	----------------	--------------------	-----------------	------------------	-------------------	------	--



Gurujala Village	G. Karunakar Reddy	Jambheri/Sathgudi sweet orange	10 years	350	Fruiting stage	3 acres	Semi-declined
Bonala Village, (Lingala mandal)	Pullareddy	Jambheri/Sathgudi sweet orange	14 years	1100	Fruiting stage	10 acres	Semi-declined
R. Thummalappalli, (Pulivendula mandal)	R. Ramanjineyulu Reddy	Jambheri/Sathgudi sweet orange	8 years	550	Fruiting stage	5 acres	Semi-declined
R. Thummalappalli, (Pulivendula mandal)	Eswara Reddy	Jambheri/Sathgudi sweet orange	8 years	600	Fruiting stage	5.5 acre	Semi-declined
Gurujala village, (Simhadripuram mandal)	Venkatanarayana Reddy	Jambheri/Sathgudi sweet orange	13-14 years	110	Fruiting stage	1 acre	Healthy
Gurujala village, (Simhadripuram mandal)	B. Sudhakar Reddy	Jambheri/Sathgudi sweet orange	10 years	330	Fruiting stage	2 acres	Healthy
Ankalamma gudur, (Simhadripuram mandal)	H. Bhaskar	Jambheri/Sathgudi sweet orange	13 years	280	Fruiting stage	2.5 acres	Healthy
Vempalli, Kadapa District	Ramanjineyalu Reddy	Sathgudi sweet orange on Jambheri	10 years	600	Vegetative	6 acres	Semi Declined
Vempalli Kadapa District	Sathish Kumar Reddy	Local cultivar acidlime budlings on Jambheri	7 years	1000	Fruiting and new flush emergence stage	10 acres	Healthy
Vempalli Kadapa District	S. Sudhakar	Local cultivar acidlime seedlings	5 years	350	Vegetative stage	3 acres	Healthy
Chinnarampalli (Vempalli Mandal, Kadapa District)	Shabbir	Acidlime seedlings cv Balaji	6 years	750	Fruiting stage	7.5 acres	Healthy
Chinnaramp	Shabbir	Sathgud	3years	400	Vegetati	3 acres	Healthy



alli (Vempalli Mandal, Kadapa District)		i sweet orange on Jambher i			ve stage		
Koppalapalli (Vempalli Mandal, Kadapa District)	Somasekhar a Reddy	Sathgud i sweet orange on Jambher i	11 years	1000	Fruiting Stage	10 acres	Healthy
TallapalliVil lage (Vempalli Mandal, Kadapa District)	S. Brahmanan da Reddy	Acidlim e seedling s of local cultivar	5 years	180	Vegetati ve stage	1.5 acre	Healthy
Kannurajap alem village Pellakuru mandal, Nellore District	K. Narendra Kumar	Acidli me/ Petlur Selectio n	9-10 years	400	Vegetati ve	4 acre	Semi- declined
Kannurajap alem village Pellakuru mandal Nellore District	K. Bhaskar Raju	Acidli me/ Petlur Selectio n	7 years 5 years	100 100	Vegetati ve Vegetati ve	1 acre 1 acre	Healthy Healthy
Kannurajap alem village Pellakuru mandal Nellore District	K. Subramanya m Raju	Acidli me/ Petlur Selectio n	10 years	100	Vegetati ve	1 acre	Healthy
Kannurajap alem village Pellakuru mandal Nellore District	K. Babu Raju	Acidli me/ Petlur Selectio n	10years	450	vegetativ e	4.5 acre	Healthy
Kannurajap alem village Pellakuru mandal Nellore District	K. Nagaraju	Acidli me/ Petlur Selectio n	10 years 1 year	200 200	Vegetati ve Vegetati ve	2 acre 2 acre	Healthy Healthy
Kannurajap	Krishnam	Acidli	10years	200	Vegetati	2.0 acre	Healthy



alem village Pellakuru mandal Nellore District	Raju	me/ Petlur Selectio n			ve		
Inugunta village, Ozili Mandal, Nellore District	M. Bhaskar Rao	Acidli me /Balaji/ Jambher i	2.5 years 8 years	250 900	Vegetati ve Vegetati ve	2.5 acre 7.0 acre	Healthy Healthy
Vajjaripala village, Ozili Mandal, Nellore District	P. Krishnaiah	Acidli me/ Balaji	7-8 years 10 years	90 400	Vegetati ve Vegetati ve	1 acre 4 acre	Healthy Healthy
Vajjaripala village, Ozili Mandal, Nellore District	E. Venkataara mannaiah	Acidli me/ Balaji	5-10 years	500	Vegetati ve	4 acre	Healthy
Aramenupa du village, Ozili Mandal, Nellore District	D. Venkataram anji	Acidli me/ Balaji	10-12 years	420	vegetativ e	4 acre	Healthy
Aramenupa du village, Ozili Mandal, Nellore District	R. Sankarraju	Acidli me/ Balaji	2 years 12 years	200 400	Vegetati ve Vegetati ve	2 acre 4 acre	Healthy Healthy
Aramenupa du village, Ozili Mandal, Nellore District	M. Dayakar Raju	Acidli me/ Balaji	6-7 years	100	vegetativ e	1 acre	Healthy
Aramenupa du village, Ozili Mandal, Nellore	G.Balaraju	Acidli me/ Balaji	12-13 years	200	vegetativ e	2 acre	Healthy



District							
Aramenupadu village, Ozili Mandal, Nellore District	M.Narayanraju	Acidlime/ Balaji	8 years	200	vegetative	2 acre	Healthy
Aramenupadu village, Ozili Mandal, Nellore District	G. Somasekhara Raju	Acidlime/ Petlur Selection	5 years	550	vegetative	5acre	Healthy
Aramenupadu village, Ozili Mandal, Nellore District	Ashok Raju	Acidlime/ Balaji	3 years	550	vegetative	5acre	Healthy
Aramenupadu village, Ozili Mandal, Nellore District	Masthan Raju	Acidlime/ Balaji	6 months 12 years	300 250	Vegetative vegetative	3acre 2.5 acre	Healthy Healthy
Venkatreddypalli(Village) Tadapatri(mandal) Anantapur District	Rajsekhar Reddy	Sweet orange/Jambheri	8 years	300	Fruit bearing stage (lemon sized fruit)	3 acres	Healthy
Mutchukota (Village) Anantapur District	Venkatramudu	Sweet orange/Jambheri	10 years	84	Fruit bearing stage (Green gram stage)	1 acre	Healthy
Rotarypuram (Village) Bukkarayasamudram mandal	Narayana Reddy	Sweet orange/Jambheri	4 years	2000	Fruit bearing stage (lemon sized fruit)	14 acres	Semi declined



Anantapur District							
Kamasamudram Village Lingala mandalam, Kadapa District	P.Ramachandrareddy	Sweet orange/Jambheri	8 years	360	Fruit bearing stage	3 acres	Healthy
Kamasamudram Village Lingala mandalam, Kadapa District	P.Jayaramireddy	Sweet orange/Jambheri	12 years	550	Flowering stage	4 acres	Healthy
Kamasamudram Village Lingala mandalam, Kadapa District	P.Adinarayanareddy	Sweet orange/Jambheri	14 years	250	Flowering stage	2.5 acres	Healthy
Kamasamudram Village Lingala mandalam, Kadapa District	T. Vijaybhaskarreddy	Sweet orange/Jambheri	5 years	250	Fruiting stage	2.5 acres	Healthy
Kamasamudram Village Lingala mandalam, Kadapa District	T. Ramachandra reddy	Sweet orange/Jambheri	4 years 8 years	700	Fruiting stage	7.0 acres	Healthy
Anakanapalli Village Lingala mandalam, Kadapa District	G. Kiran Kumar reddy	Sweet orange/Jambheri	14 years	550	Fruiting stage	4.5 acres	Healthy
Cherlopalli Village Simhadripuram, Kadapa District	A. Sureshwarreddy	Sweet orange/Jambheri	12 years	400	Fruiting stage	3.0 acres	Healthy
Nidella Village, Simhadripuram, Kadapa District	Aravindanath Reddy	Sweet orange/Rangpur	4 years	600	Fruiting stage	5.0 acres	Healthy
Ankevanapalli, Lingala, Kadapa District	D. Padmanabha Reddy	Sweet orange/Rangpur	10 years	500	Fruiting stage	4.0 acres	Healthy
Intiobagapalli Village Lingala	Y.Sudhakar reddy	Sweet orange/Jambheri	20 years	400	fruiting stage	4 acres	Semi-declined



mandalam, Kadapa District							
Intiobagapalli Village Lingala mandalam, Kadapa District	Y.Sunilkumarreddy	Sweet orange/J ambheri	20years	300	fruiting stage	3 acres	Semi- declined
Peddagudda Village Lingala mandalam, Kadapa District	K.Ramachandrareddy	Sweet orange/J ambheri	7 years	440	fruiting stage	4 acres	Healthy
Peddagudda Village Lingala mandalam, Kadapa District	P.Venkatchandrareddy	Sweet orange/J ambheri	12 years	550	fruiting stage	5 acres	Healthy
Peddagudda Village Lingala mandalam, Kadapa District	P.Ramachandrareddy	Sweet orange/J ambheri	12 years	750	fruiting stage	6.5 acres	Healthy
Ippatla Kadapa District	S. Srinivasulu reddy	Sweet orange/J ambheri	12 years	450	fruiting stage	6.0 acres	Semi- declined
K.Velamvarapalli, Pulivendula mandalam, Kadapa District	Y. S. Madhusudhan Reddy	Sweet orange/J ambheri	3 years	700	fruiting stage	6.0 acres	Healthy
V. Kothapalli Village, Vemula mandalam, Kadapa District	P.B. Venkatreddy	Acid lime /Balaji	10 years	200	Flowerin g stage	2 acres	Healthy
V. Kothapalli Village, Vemula mandalam, Kadapa District	C.V. Ramana Reddy	Acid lime /Balaji	4/7 years	70/150	Flowerin g stage	2.5 acres	Healthy

B. Insect pests and their natural enemies

Sl	Name of	Infestation (%)	Natural enemies
----	---------	-----------------	-----------------



No.	pest	Trees observed (n = 10)	Trees infested (No.)	Infestation (%) on shoot/ leaf/fruit	Parasitization (%)	Predator population / tree/2 minutes
1	Thrips	76	32	Fruit infestation-Moderate(7-10%)	Nil	Nil
2	Citrus Hindu Mite/Citrus nest webbing mite	95	88	Foliage-Very Severe (>80%) Fruit infestation-Severe (18-20%)	Nil	Nil
3	Rust mite	60	37	Moderate to high on fruits(10-12%)	Nil	Nil
4	Snow Scales	50	28	Moderate to High (25-40%)	Nil	Nil
5	Psylla	70	56	High to Severe (25-42%)	Nil	Nil
6	Leaf miner	65	21	Low to moderate (6-12%)	Nil	Nil
7	Ash weevils	20	9	Low to Moderate (7-12%)	Nil	Nil

C. Intensity based on rating 1-5

Category	Foliage infestation (%)	Fruit infestation (%)
1 Low	1-10	1-5
2 Moderate	11-30	6-10
3 High	31-50	11-15
4 Severe	51-75	16-25
5 Very severe	>75	>25

PLANTATION CROPS

COCONUT

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Ent.1: Pest surveillance in coconut

Roving survey

Roving survey was carried out in East Godavari and West Godavari districts. Rhinoceros beetle, eriophyid mite, black headed caterpillar and rugose spiralling white fly were the major pests infesting coconut in this region. The infestation of rhinoceros beetle was highest (17.10%) in West Godavari district and low incidence of 11.70% was recorded in the East Godavari district. The leaf damage by the beetle was 8.91, 11.70 per cent and spindle damage was 5.38, 7.60 per cent in the East and West Godavari districts respectively. The incidence of red palm



weevil was 4.50 % in East Godavari and 5.16 % in West Godavari district. The infestation of eriophyid mite was recorded from all the plantations observed in the surveyed districts and was in the range of 91.40 to 92.95 per cent. Intensity of mite was high in both the districts surveyed. The incidence of black headed caterpillar was recorded in East and West Godavari districts in the range of 35.70 to 40.84, the highest incidence (40.84 %) was observed in East Godavari district and lowest incidence (35.70%) was noticed in West Godavari district. The infestation of rugose spiralling white fly was recorded from East and West Godavari districts in the range of 80.21 to 89.74 per cent and intensity of RSW was medium (10-20 egg spirals per leaflet) in both the districts (Table 30). In roving survey, sporadic incidence of slug caterpillar damage (15.55) was recorded in Kommuchikkala village of West Godavari district of Andhra Pradesh in the month of March 2019.

Minor Pests

Also during the survey, the incidence of termite was noticed in West Godavari district in the range of 10 to 15 per cent and in East Godavari it was 5 to 8 per cent.

Fixed Plot Survey:

Fixed plot survey was carried out from June, 2018 in two selected villages of East Godavari district *i.e.*, Samanthakuru of Allavaram mandal and Munganda of P.Gannavaram mandal to record the incidence and intensity of infestation by different pests of coconut. Among the insect pests, rhinoceros beetle, eriophyid mite and black headed caterpillar damage was observed in both the villages. The leaf damage of 23.77 % due to Rhinoceros beetle was more in Munganda village during February month compared to Samanthakurru which recorded leaf damage of 17.02 % during the month of August. Eriophyid damage was more in both the villages, where the incidence of 93.55 % was recorded with grade index of 2.20, in case of Samanthakurru, whereas in Munganda the incidence was 89.54 % with grade index of 2.50 and intensity was high in both the villages. Black headed caterpillar incidence of 12.99 % was observed in Samanthakurru village during October month, afterwards it was decreased to 8.33 % in December month due to the release of parasitoid, *Goniozus nephantidis*, whereas it was absent in Munganda village. No incidence of red palm weevil, rugose spiralling whitefly, bag worm and slug caterpillar was recorded in fixed plot surveyed villages.

Ent 3. Integrated Management of coconut Eriophyid mite

Integrated Management of coconut Eriophyid mite

The experiment was conducted in a plot having 100 palms of 0.5 ha acreage at Horticultural Research Station, Ambajipeta. IPM package for coconut mite was implemented in the plot as per the experimental protocol. Results revealed that, low level of mite infestation was observed in first half (87.13 %) as well as second half (88.34 %) in treated plot whereas highest was observed in first half and second half *i.e.*, 93.12 and 93.25 per cent in control. Simultaneously, low level of mite intensity and average mite population/16mm² in 3rd bunch was noticed in first half (1.75 and 41.67) as well as second half in IPM plot (1.99 and 56.93) in treated plot, whereas significant variation *i.e.*, highest was recorded in control of both first half (2.47 and 62.27) and second half (2.45 and 86.73) (Table 32).



Table 32: Per cent nut damage, mean damage grade index and average population of eriophyid mite in experimental plot during 2018-19.

Treatments	Pre treatment (June '18)			Post treatment (6 months) (December ' 18)		
	Percent infested nuts	Mean damage grade index for young bunch and harvested nuts	Avg.mite population /16mm ² in 3 rd bunch	Percent infested nuts	Mean damage grade index for young and harvested nuts	Avg.mite population /16mm ² in 3 rd bunch
		HGI			HGI	
T₁:IPM garden	87.13 ± 1.85 (71.13)	1.75 (Moderate)	41.67 ± 3.32	88.34 ± 1.45 (71.2)	1.99 (Moderate)	56.93 ± 5.87
T₂: Control	93.12 ± 1.70 (77.40)	2.47 (High)	62.27 ± 4.54	93.25 ± 0.76 (75.55)	2.45 (High)	86.73 ± 4.79
t value	2.49	8.02	3.66	2.73	2.55	3.94
P value	Significant	Significant	Significant	Significant	Significant	Significant

*Values in parenthesis are arc sin transformed values

Ent 4. Production and Supply of Parasitoids

Production and supply of Parasitoids

Mass multiplication of coconut black headed caterpillar parasitoids namely *Goniozusnephantidis* and *Braconhebetor* and parasitoid of slug caterpillar i.e., *Pediobiusimbreus* is being carried out at Bio control Laboratory, HRS, Ambajipeta and a total of (*Braconhebetor*- 1,33,000 no.s, *Goniozusnephantidis*- 2,50,600 nos and *Pediobiusimbreus*- 11,200 nos) have been reared and supplied to the farmers of East Godavari, West Godavari, Krishna and Nellore districts of Andhra Pradesh (Table 33).

Table 33: Production and supply of parasitoids for the management of coconut black headed caterpillar in Ambajipeta centre (2018-19)

Sl.	Month	No. of <i>Braconhebetor</i> purchased by farmers	No. of <i>Goniozusnephantidis</i> purchased by farmers	No. of <i>Pediobiusimbreus</i> purchased by the farmers
1	April 18	7,500	51,500	0
2	May 18	3,500	11,000	0
3	June 18	3,200	12,000	0



4	July 18	28,000	8,000	0
5	August 18	7,000	5,000	0
6	September 18	2,500	5,000	0
7	October 18	18,500	17,000	0
8	November 18	23,800	39,000	0
9	December 18	22,000	36,000	0
10	January 19	10,000	16,500	200
11	February 19	7,000	37,000	2,000
12	March 19	0	12,600	9,000
Total		1,33,000	2,50,600	11,200
Receipts obtained (Rs)		66,500	1,87,950	5,600

Ent 5. Integrated Management of slug caterpillar

Integrated Management of slug caterpillar

The experiment was conducted in farmer's field having 100 palms of 0.5 ha acreage at Kommuchikkalavillage of Poduru Mandal during March 2019. IPM package for slug caterpillar was implemented in the plot as per the experimental protocol. Pre data on number of larvae /10 leaflets was 9.60 where as post treatment observations revealed that, there was 100 per cent mortality in IPM block where as gradual increase was noticed in control from 9.90 to 16.6 larvae/10 leaflets at 2 days after treatment (DAT), 10 days after treatment (DAT) the population again increased to 20.80 larvae/10 leaflets (Table 34).

Table 34: Incidence of Slug caterpillar in experimental plot during 2018-19

Sl.no	Treatments	Pre-Treatment	Post treatment	
		Mean no. of larvae/10 leaflets	Mean no. of larvae/10 leaflets (After 48 hours)	Mean no. of larvae/10 leaflets (After 10 DAT)
1.	IPM	9.60 ± 0.97	0.00	0.00
2.	Control	9.90 ± 0.96	16.6 ± 0.70	20.80 ± 1.22
t value		0.22	23.63	17.07
P value		Non - significant	Significant	Significant

AICRP on Biocontrol (Entomology)

Effect of bio pesticides for management of Mango hoppers, pests *Idioscopusspp* in field condition



The experiment was carried out in mango garden (variety Totapuri) aged 7 years in Bavojipeta village of Gokavaram mandal in East Godavari district (GPS coordinates 17° 10' 7.68" N and 81° 49' 46.92" E). The first spray was done on 18/01/2019 and subsequent two sprays were given at weekly intervals. Data on surviving hopper population was transformed into $\sqrt{x+0.5}$ values before subjecting to analysis of variance.

The results in Table 35 showed that after third spray of bio pesticides, *Metarhiziumanisopliae* (AAU) and *Metarhiziumanisopliae* (Ma-Shiv) were effective in suppressing mango hoppers to 0.63 hoppers per tree followed by *Beauveria bassiana* (AAU) (0.75 hoppers per tree). However, conventional insecticide, Imidacloprid and botanical insecticide Azadirachtin 10000 ppm were effective than the microbial insecticides with zero hopper population and 0.34 hopper/tree, respectively. Among the bio-pesticide treatments, *Lecanicilliumlecanii* (VI-22) had a high hopper population of 0.63 insects/ tree after third spray. In untreated control block a high population of mango hoppers ranging from 11.00 to 28.68 was recorded consistently.

Table 35: Field evaluation of bio pesticide formulations against mango hoppers, *Idioscopussppin* Andhra Pradesh:

S.No.	Treatments	Dosage	Average hopper population/ per tree (for 4 inflorescence) 7 days after spray			
			Pre count	1 st spray	2 nd spray	3 rd spray
1	T1- <i>Beauveria bassiana</i> (AAU)*	5 g/l	7.06 (2.75)	3.94 (2.09)	1.18 (1.27)	0.75 (1.08)
2	T2- <i>Metarhiziumanisopliae</i> (AAU)	5 g/l	7.88 (2.81)	2.88 (1.79)	0.94 (1.15)	0.63 (1.05)
3	T3- <i>Lecanicilliumlecanii</i> (VI-22)	5 g/l	10.45 (3.28)	2.94 (1.84)	2.13 (1.62)	1.16 (1.29)
4	T4- Azadirachtin 10000 ppm	1 ml/l	8.25 (2.96)	1.44 (1.35)	0.88 (1.15)	0.34 (0.92)
5	T5- Imidacloprid 17.8 SL	0.4 ml/l	7.44 (2.82)	1.19 (1.24)	0.0 (0.71)	0.0 (0.71)
6	T6- <i>Metarhizium anisopliae</i> (Ma-IIHR)	5 g/l	7.63 (2.81)	3.44 (1.96)	1.56 (1.47)	0.94 (1.19)
7	T7- <i>Metarhizium anisopliae</i> (Ma-Shiv)	5 g/l	11.00 (3.25)	5.13 (2.31)	1.06 (1.16)	0.63 (1.05)
8	T8-Untreated control	--	11.00 (3.30)	16.13 (4.05)	23.75 (4.86)	28.68 (5.38)
9	SEM		--	0.22	0.33	0.24
10	CD (5%)		--	0.64	0.96	0.70

Fig in parenthesis are $\sqrt{x+0.5}$ transformed values,.

AAU-Anand Agricultural University, Ma-IIHR- *Metarhiziumanisopliae*-IIHR strain.

2. Management studies for inflorescence thrips on mango with bio-pesticides in field conditions.



The experiment was carried out in mango garden (variety Totapuri) aged 7 years in Bavojipeta village of Gokavaram mandal in East Godavari district. The first spray was done on 28/02/2019 and subsequent two sprays were given at weekly intervals. Data on surviving thrips population was transformed into $\sqrt{x+0.5}$ values before subjecting to analysis of variance.

The results in Table-36 showed that after third spray, Fipronil treated trees had a low mean thrips population of 2.13 followed by bio pesticide *Metarhiziumanisopliae* (Ma-IIHR), Azadirachtin 10000 ppm, *Metarhiziumanisopliae*(AAU) and *Beauveria bassiana* (AAU) with 2.75, 3.25, 6.06 and 6.25 thrips per tree, respectively. Among the bio-pesticide treatments, *Lecanicilliumlecanii* (VI-22) had a high thrips population of 7.75 thrips/tree after third spray. In untreated control block a high population of mango thrips ranging from 16.25 to 31.25 was recorded consistently.

Table 36 : Field evaluation of bio pesticide formulations against mango thrips

S.No.	Treatments	Dosage	Average number of thrips per 10 inflorescence per tree			
			Pre count	1 st spray	2 nd spray	3 rd spray
1	T1- <i>Beauveria bassiana</i> (AAU)	5 ml/l	11.96 * (3.53)	9.23 (3.12)	7.88 (2.86)	6.25 (2.52)
2	T2- <i>Metarhiziumanisopliae</i> (AAU)	5 ml/l	11.00 (3.39)	8.63 (2.94)	7.19 (2.58)	6.06 (2.49)
3	T3- <i>Lecanicilliumlecanii</i> (VI-22)	5 ml/l	10.06 (3.25)	9.00 (3.03)	8.56 (2.97)	7.75 (2.76)
4	T4- Azadirachtin 10000 ppm	5 ml/l	12.53 (3.61)	7.06 (2.59)	5.31 (2.35)	3.25 (1.88)
5	T5- Fipronil	2 ml/l	11.19 (3.43)	6.63 (2.66)	3.06 (1.86)	2.13 (1.62)
6	T6- <i>Metarhizium anisopliae</i> (Ma-IIHR)	5 g/l	10.99 (3.39)	6.81 (2.62)	4.75 (2.19)	2.75 (1.77)
7	T7 -Untreated control	-	12.60 (3.62)	18.00 (4.27)	24.00 (4.93)	31.25 (5.61)
9	SEM	-	-	0.32	0.32	0.33
10	CD (5%)	-	-	0.96	0.97	0.99

*Fig in parenthesis are $\sqrt{x+0.5}$ transformed values.

AAU- Anand Agricultural University, Ma-IIHR= *Metarhiziumanisopliae*-IIHR strain.

3. Evaluation of microbial insecticides against bag worm , *Pteroma plagiophelps* in cocoa

The experiment was not conducted due to lack of requisite bag worm population.

4. Surveillance of rugose whitefly *Aleurodicusrugioeperculatus* in coconut and assessing

Mean number of spirals per 4 leaflets was ranged between 11.13 to 54.24. During April, the mean number of spirals were 28.53 and 40.73 and the corresponding mean number of adult



whiteflies were 71.36 and 38.58 in East Godavari and West Godavari districts, respectively. During May, the mean whitefly population per 4 leaflets was observed to be higher than the previous month and the population increase was continued till July. The adult population was 63.79 and 40.18 insects per 4 leaflets during May at East Godavari and West Godavari, respectively. Number of spirals and adults per 4 leaflets increased till July. During August, the whitefly population was observed to be 4.12 per four leaflets in East Godavari while no whitefly adults, nymphal and pupal stages were recorded in August. A very low whitefly population was recorded during September in both districts. The whitefly population was observed to increase from October with 22.16 and 24.02 spirals per 4 leaflets and the corresponding adult insect population was 21.22 and 21.38 per 4 leaflets at East Godavari and West Godavari districts, respectively. This increasing trend of population was continued till December.

The rugose piralling whitefly population was recorded at weekly intervals from Jan 2019 at Pulletikurru village, Ambajipeta mandal. High mean number of 77.25 adults per four leaflets was recorded during 6th standard week and the adult population started decreasing from 7th standard week and a low adult population was recorded during 14th standard week (32.25) and the corresponding number of nymphs and pupae per 4 leaflets was 17.75 and 11.5, respectively.

Per cent Parasitization of *E. guadeloupaeon* rugose spiralling whitefly in coconut and oil palm:

The parasitisation by *E. guadeloupa* was not observed in the white fly infested gardens and nurseries up to December 2017 in A.P. As *E. guadeloupa* parasitoid is effective against the whitefly and was yet to establish in Andhra Pradesh, in December 2017 the parasitoids consignment were obtained from Coconut Research station, Aliyarnagar, TNAU. The first consignment of 150 numbers of *E. guadeloupa* parasitized pupae were released in coconut gardens in Kalavalapalli village of West Godavari district on 18-12-2017. Further on 08-1-2018 a second consignment of 250 numbers of *E. guadeloupa* parasitized pupae were released in Oil palm and Coconut gardens in Kalavalapalli and Chikkala villages in West Godavari district. The third consignment of *E. guadeloupa* parasitoid in higher numbers (3000 nos) were obtained and distributed for release in Kalavalapalli, Chikkala, Neeladripuram, Korumamidi and Chagallu villages in West Godavari and Kadiyapulanka and Pottilanka villages in East Godavari on 20.01.2018. The data on parasitisation of Rugose whitefly by *E. guadeloupa* was recorded to ascertain establishment of parasitoid in the released gardens.

During January, 20.01±1.69 per cent parasitized pupae were observed per 10 palms. Later the per cent parasitisation was increased to 72.06±3.15 during February which later decreased to zero during April till August. However, per cent parasitisation of 29.34±3.56, 42.38±5.48, 69.49±4.94 and 68.83±3.61 was observed during months of September, October, November and December, respectively. Similarly on oil palm, the per cent parasitization was 9.92±2.90 during January which declined to zero in April and no parasitisation was observed till August. During September, per cent parasitisation was 25.62±1.84 which was observed to slowly increased to 49.16±2.93 by December (Table-39).

Table-39: Per cent parasitized whitefly pupae observed after parasitoid release on oil palm and coconut in Kalavalapalli village



Month/Year	Per cent parasitized whitefly pupae observed (For 10 palms at random)	
	Coconut (5 years old)	Oil Palm (15 years old)
January 2018	20.01±1.69	9.92±2.90
February 2018	72.06±3.15	59.97±3.65
March 2018	52.81±3.07	33.01±4.09
April 2018	Nil	Nil
May 2018	Nil	Nil
June 2018	Nil	Nil
July 2018	Nil	Nil
August 2018	Nil	Nil
September 2018	29.34±3.56	25.62 ±1.84
October 2018	42.38±5.48	33.87±2.26
November 2018	69.49±4.97	46.71±2.48
December 2018	68.83±3.61	49.16±2.93
January 2019	71.35±4.31	-
February 2019	65.44±2.63	-
March 2019	28.68±1.78	-

Non- Plan (Entomology)

Survey and monitoring of pest problems in cocoa as an inter crop in coconut

Seasonal incidence of insect pests on cocoa:

The incidence of bark eating caterpillar was observed from 15th standard week (April 9 2018 to 15 April 2018) and the incidence was 7.65 per cent with an average active holes of 2.53 per tree and index of caterpillar incidence being 0.19. The incidence gradually increased and in 22nd standard week of May 2018, a highest incidence of 26.73 per cent with average active holes of 4.29 per tree and index of caterpillar incidence of 1.15 was observed and zero incidence was observed from 30th standard week to 34th standard week. From 35th standard week the bark eating caterpillar incidence started with 6.32% and 1.05 holes per tree which reached a peak infestation of 26.78 with 4.55 larvae per tree during 2nd standard week. The leaf chaffer beetle incidence commenced from 23rd standard week (June 04-10th 2018) and increased incidence of more than 70 per cent was recorded from July month, with cessation of rains the per cent damage gradually decreased. A low leaf eating caterpillar and bag worm incidence was observed during the study period. The aphid population was recorded in 27th to 42nd standard week and again in 47th to 56th standard week. The thrips incidence was observed from 47th standard week of 2018 to 8th standard week of 2019 (Table 40).

Correlation coefficient (r) between major insect pests of cocoa and weather parameters:



During 2018-19, chaffer beetle damage had a significant positive correlation with morning relative humidity ($r = +0.340$) rainfall ($r = +0.334$) and number of rainy days ($r = +0.285$) while maximum temperature was observed to be correlated as significantly negative ($r = -0.346$) (Table-41).

The active holes of bark eating caterpillar were observed to be significantly positively correlated with minimum temperature ($r = -0.355$) and morning relative humidity ($r = -0.474$). Negative and non significant correlation was observed between evening relative humidity ($r = -0.51$), rainfall ($r = -0.232$), rainydays ($r = -0.166$) and active holes of barkeating caterpillar (Table-41).

Leaf eating caterpillars had a significant positive correlation with minimum temperature ($r = 0.288$) and morning relative humidity ($r = 0.517$). The aphids had a significant negative correlation with maximum temperature ($r = -0.513$) and significant positive correlation with morning relative humidity ($r = +0.545$), rainfall ($r = +0.328$) and number of rainy days ($r = 0.308$) (Table-41).

Incidence of various pests on cocoa during roving survey :

August 2018:

No incidence of bag worm and bark eating caterpillar active holes were observed in the cocoa gardens of mandals surveyed. The leaf damage due to chaffer beetles was also observed to be highest in the cocoa gardens of Ambajiepta (19.16 ± 0.79) followed by Kothapeta (17.59 ± 1.66). Incidence of leaf eating caterpillars was highest in Ambajipeta mandal (8.37 ± 0.88) and lowest in P. Gannavaram (4.15 ± 0.41) while the incidence of aphids was low in all surveyed mandals. (Table-42&43).

December 2018:

Chaffer beetle damage in Ambajipeta, Amalapuram and P. Gannavaram was $15.03 \pm 0.73\%$, $14.87 \pm 0.99\%$ and $13.51 \pm 1.82\%$, respectively while no chaffer beetle damage was observed in the cocoa gardens of Kothapeta and Atreyapuram mandals. Very low incidence of bag worms observed in Kothapeta and Atreyapuram mandals and bark eating caterpillar active holes were observed in the cocoa gardens of Amalapuram ($4.07 \pm 0.76/\text{tree}$), Kothapeta ($3.81 \pm 0.38/\text{tree}$), Ambajipeta ($3.37 \pm 0.88/\text{tree}$) and P. Gannavaram ($2.96 \pm 0.47/\text{tree}$) while no barkeating caterpillar holes were observed in cocoa gardens of Atreyapuram. Low incidence of leaf eating caterpillars and aphids was observed in all the mandals surveyed. (Table-44&42).

March 2019:

No chaffer beetle, leaf eating caterpillars, aphids and bag worms were observed in the cocoa gardens of the mandals surveyed. Bark eating caterpillar infestation was ranged between 3.37 to 4.07 active holes per tree in the mandals surveyed. (Table-45&42).

**Table 43: Incidence of various pests on cocoa during roving survey in August-2018:**

Mandals	Average Leaf chaffer beetle damage	Bark Eating Caterpillar damage Avg active holes/ tree	Avg no Bagworms/ tree	Avg no leaf eating caterpillars/ tree	Avg pop of aphids/ 5 leaves
Ambajipeta	19.16±0.79	0	0	8.37±0.88	8.91±1.60
Kothapeta	17.59±1.66	0	0	6.72±0.43	10.63±0.38
Atreyapuram	0	0	0	3.27±1.17	12.43±4.22
Amalapuram	12.15±0.67	0	0	4.52±0.89	0
P. Gannavaram	16.36±2.39	0	0	4.15±0.41	5.34±0.53

Table 44: Incidence of various pests on cocoa during roving survey in December-2018:

Mandals	Average leaf chaffer beetle damage	Bark Eating Caterpillar damage Avg active holes/ tree	Avg no Bagworms/ tree	Avg no leaf eating caterpillars/ tree	Avg pop of aphids/ 5 leaves
Ambajipeta	15.03±0.73	2.46±0.24	-	1.40±0.51	9.21±1.45
Kothapeta	0	3.44±0.57	0.69±0.40	0	6.34±0.72
Atreyapuram	0	0	0.93±0.31	0	3.38±1.21
Amalapuram	14.87±0.99	3.79±0.64	-	2.75±0.64	0
P. Gannavaram	13.51±1.82	2.57±0.48	-	1.76±0.28	0

Table 45: Incidence of various pests on cocoa during roving survey in March-2019:

Mandals	Average leaf chaffer beetle damage	Bark Eating Caterpillar damage Avg active holes/ tree	Avg no Bagworms/ tree	Avg no leaf eating caterpillars/ tree	Avg pop of aphids/ 5 leaves
Ambajipeta	0	3.37±0.88	-	0	0
Kothapeta	0	3.81±0.38	-	0	0
Atreyapuram	0	0	0.64±0.37	0	0
Amalapuram	0	4.07±0.76	-	0	0
P. Gannavaram	0	2.96±0.47	-	0	0

2. Studies on field evaluations of different doses of Azadiracthin 10,000 ppm against coconut pests through root feeding.



Among the different doses evaluated against black headed caterpillar the doses of 10 ml, 12.5 ml and 15 ml were found to have deleterious effect. After 72 hours 15 ml root fed treatment had 50% larval mortality followed by 12.5ml with 47.5% larval mortality. The highest per cent mortality of 100 was observed in 15 ml root fed treatment after 120 hrs of feeding followed by 12.5 ml treatment (80%) and 10 ml root fed treatment (52.5%). Larvae fed on 10 ml root fed leaves, showed high early pupation per cent of 47.5 after 96 and 120 hours, respectively (Table 46).

Table 46: Effect of root feeding of different doses of Azadirachtin 10000 ppm against black headed caterpillar:

Dosage									
	24 hrs	48 hrs		72 hrs		96 hrs		120 hrs	
	Per cent larvae feeding	% mortality	EP	% mortality	EP	% mortality	EP	% mortality	EP
(2.5 ml + 2.5 ml of water)	100	0	0	0	0	0	0	0	0
(5 ml + 5 ml of water)	100	0	0	0	0	0	0	0	0
(7.5 ml + 7.5 ml of water)	100	0	0	0	0	0	0	0	0
(10 ml + 10 ml of water)	100	10.00 *(13.26)	0	22.5 (28.22)	7.5 (13.83)	40.0 (38.94)	47.5 (42.96)	52.5 (46.66)	47.5 (43.49)
(12.5 ml + 12.5 ml of water)	100	17.5 (21.58)	0	47.5 (43.55)	10.0 (17.89)	77.5 (62.30)	20.0 (26.19)	80.0 (63.80)	20.0 (26.79)
(15 ml + 15 ml of water)	100	27.5 (31.39)	0	50.0 (45.00)	0.0 (0.0)	62.5 (52.55)	0 (0.0)	100.0 (90.00)	0.0
SEM		4.51		2.33	3.17	6.22	4.09	2.99	2.17
CD		13.41		3.34	9.43	8.80	12.15	8.88	6.45

EP – Early pupation, *Figures in the parenthesis are arc-sine transformed values.

3. Bio-Ecology and Management of Bark eating caterpillar in Cocoa

Mean frass ribbon length per tree before application of the insecticides was ranged between 8.75 cm to 12.50 cm. After one day of insecticidal treatment, no frass ribbon progression was observed in T4, T5, T7, T8, T9 and T10 treated cocoa trees. However, the mean frass ribbon progression in the T1 and T2 treated trees was 3.41 cm and 0.16 cm, respectively. No frass ribbon was observed in T4, T5, T7, T8 and T9 T10 treated plants till 28th day after insecticidal spray. In case of T10, frass ribbon on 21st day after treatment. The control trees showed a gradual increase of 10.75, 11.92, 12.13 and 13.02, 16.63 and 18.42cm during 3rd, 7th



14th, 21st and 28th day after insecticidal treatment. (Table: 47). The data clearly shows that the Lambda cyhalothrin (0.5ml/lit, 1ml/lit and 5 ml/lit) was highly effective followed by chlorantraniliprole 18.5SC and Azadirachtin 10000 ppm. Further, in terms of cost, Lambda cyhalothrin was cheaper than the other effective insecticides.

Table 47: Effect of various insecticidal treatments on bark eating caterpillar:

S. No.	Treatment	Average length of frass ribbon per tree (cm)						
		1 DBT	1 DAT	3 DAT	7 DAT	14 DAT	21 DAT	28 DAT
1.	T1-Removal of frass	9.13	3.41	7.04	10.31	13.04	15.67	18.39
2.	T2-T1 + Application of Bt @1g/L + plugging the hole	8.75	0.16	0.56	1.81	2.94	8.45	12.26
3.	T3-T1 + EPN + plugging the hole	*	*	*	*	*	*	*
4.	T4-T1 + Injecting active holes with chlorantraniliprole 18.5SC + plugging the holes	10.13	0.00	0.00	0.00	0.00	0.00	3.45
5.	T5-T1 + Cotton plugging after dipping in chlorantraniliprole 18.5SC	11.13	0.00	0.00	0.00	0.00	0.00	4.68
6..	T6-T1 + Water injection + plugging the holes	10.88	0.00	0.98	2.75	5.91	10.36	12.88
7.	T7-T1 + Lamda cyhalothrin (0.5ml/l) + plugging the hole	12.50	0.00	0.00	0.00	0.00	0.00	5.52
8.	T8-T1 + Lamda cyhalothrin (1ml/l) + plugging the hole	10.75	0.00	0.00	0.00	0.00	0.00	2.36
9.	T9-T1 + Lamda cyhalothrin (5ml/l) + plugging the hole	9.13	0.00	0.00	0.00	0.00	0.00	2.29
10.	T10-T1 + Azadirachtin 10000 ppm (1ml/l) + plugging the hole	9.59	0.00	0.00	0.00	0.00	2.78	5.67
11.	T11-Control	10.17	10.75	11.93	12.13	13.02	16.63	18.42
12.	SEm	-	0.25	0.18	0.22	0.36	0.14	0.14
13.	C.D.(0.05%)	-	0.75	0.53	0.65	1.04	0.40	0.40

DBT- Day before treatment, DAT- Day after treatment.

*Treatments not imposed due to unavailability of EPN.

Activity of Bark eating caterpillar:

Active holes were recorded and the frass ribbon was removed during 10.30AM and the progression of the frass ribbon was noted on hourly basis. At 11.30 AM, the active hole 3 and active hole 7 were found to be closed with frass while the remaining active holes were closed by



12.30 PM. However, from 1.30 PM onwards no further progression of the frass ribbon was noted. From 7.30 PM frass ribbon started to progress and the movement of the larva in the frass ribbon was noticed. This activity continued till 6.30 AM after which the movement and frass ribbon progression found to cease.

Biology of bark eating caterpillar:

An attempt to rear the caterpillar at laboratory was made and found to be difficult as the larval period was 9 months. From the weekly incidence data (Table-9) pupal cases of the bark-eating caterpillar were observed during July (31th standard week) and no active hole was observed from 30th standard week to 34th standard week. Again active holes were observed from 35th standard week. Following inferences were drawn from the data collected.

- Pupal period started between 28th and 29th standard week.
- Adult activity was between 31st to 36th standard week.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

PAPAYA

1. New and emerging disease(s) of papaya

Survey was conducted during the monsoon season of 2018 in Reddivaripalle and Bayanapalle villages of Kodur division. Crop was at harvesting stage. Yield was reduced upto 40-50% due to severe incidence of PRSV (20-30 t/ha). More than 50% of fruits (deformed) were unmarketable due to PRSV.

Occurrence and progress of PRSV, leaf curl and collar rot diseases at different phenological stages of papaya were recorded and the observations are as given below.

- PRSV incidence was severe (20-35%) at seedling to three months crop and reached 100% by the time of flowering and fruit development stage. 100% incidence of PRSV and 10% of leaf curl were recorded in Read lady.
- Collar rot percent incidence was increased from 20% to 35%. During the month of September it was increased due to continuous rains.
- Papaya leaf curl virus incidence increased from 2% to 10%. The affected fruits remained immature, deformed and unfit for consumption causing total loss.
- Due to continuous rains during fruit development and fruit fly infestation, fruit rot was severe (20%) caused by *Colletotrichum*spp. and *Fusarium*spp.

SPICES

HORTICULTURAL RESEARCH STATION, LAM

INSECT PEST MANAGEMENT



1. Screening of germplasm / Cultivars for resistance to thrips, mites, blossom midge and Pod borers

Total 12 entries out of 60 germplasm accessions were found to be promising against thrips incidence and also found resistant to chilli leaf curl and mite incidence which can be used in breeding programmes to develop resistant lines or hybrids

2. Evaluation of new molecules of insecticides against sucking pests in chilli.

Thirteen insecticides were evaluated against chilli sucking pest complex. Results at ten days after treatment showed that the lowest thrips population was recorded in treatment with spinosad 45SC @ 0.3 mL/L (6/pl) and it was followed by cyantraniliprole 10% OD @ 1.2 mL/L which was at par with diafenthiuron 50% WP @ 1.25 g/L (12/pl). Lowest whitefly population (2 per plant) was recorded with diafenthiuron 50% WP @ 1.25 g/l. Based on the results it was observed that control of vector population has no significant influence on leafcurl disease progress. Highest yield (23.74 q/ha) was recorded in the treatment with spinosad 45SC @ 0.3 mL/L.

Table 63. Efficacy of different insecticides against thrips on chilli

S.No	Treatment	Dosage	Number of thrips/plant				Yield (q/ha)
			PTC	3 DAS	7 DAS	10 DAS	
T1	Spinosad 45 SC	0.3 mL/L	14.50	1.00 (1.00) ^h	3.50 (1.86) ^h	6.00 (2.44) ^g	23.74
T2	Diafenthiuron 50% WP	1.25g/L	14.50	1.50 (1.20) ^h	5.00 (2.22) ^g	11.50 (3.38) ^f	20.41
T3	Spiromesifen 240 SC	1 mL/L	15.50	9.50 (3.08) ^{de}	12.00 (3.46) ^{cd}	15.00 (3.87) ^d	21.87
T4	Thiacloprid 21.7SC	0.25 mL/L	16.00	13.00 (3.60) ^c	16.00 (3.99) ^b	18.00 (4.24) ^c	15.62
T5	Thiamethoxam 25% WG	0.3 g/L	17.50	11.50 (3.39) ^{cd}	12.50 (3.53) ^{cd}	14.50 (3.80) ^{de}	11.66
T6	Buprofezin 25% SC	1 mL/L	15.00	14.00 (3.73) ^{bc}	17.00(4.12) ^d	21.00 (4.58) ^{bc}	9.57
T7	Cyantraniliprole 10 % OD	1.25 mL/L	17.50	5.00 (2.22) ^g	7.50(2.73) ^f	10.50 (3.23) ^f	20.83
T8	Flubendiamide + Thiacloprid 480 SC	0.25 mL/L	16.00	15.00 (3.87) ^{bc}	17.00 (4.12) ^b	19.00 (4.35) ^{bc}	21.45
T9	Fonicamid 50% WG	0.3 g/L	16.00	17.00(4.12) ^b	17.50 (4.17) ^b	19.50 (4.41) ^{bc}	17.91
T10	Acephate 75 SP	1.5 g/L	18.00	7.00 (2.63) ^{efg}	10.50 (3.23) ^{de}	12.50 (3.53) ^{de} f	20.33
T11	Acephate 50 % + Imidacloprid 1.8% SP	2 g/L	15.50	7.50 (2.73) ^{ef}	13.00 (3.60) ^c	14.50 (3.80) ^{de}	16.38
T12	Fipronil 5% SC	2 mL/L	16.50	6.50(2.54) ^{fg}	9.50 (3.08) ^{ef}	12.00 (3.46) ^{ef}	13.32



T13	Flupyradifurone @ 200 SL	0.75 mL/L	16.50	13.50 (3.66)bc	18.00 (4.24) ^d	22.00 (4.68) ^d	13.54
T14	Control	-	17.00	22.50 (4.73) ^a	27.00 (5.19) ^a	32.00 (5.65) ^a	9.57
C.D			-	0.46	0.33	0.35	6.92
SE (m)			-	0.15	0.10	0.11	2.24
C.V			-	6.59	4.13	3.99	18.80

3. Testing of different border crops to manage pests on chilli under Integrated pest management

Results revealed that there was no significant difference between the treatments on the incidence of thrips and white fly population and the yield data showed that the highest yield was recorded in the treatment having coriander as the trap crop which was at par with the treatment having mesta as the trap crop.

Table: 65 Effect of different trap crops on pest population and yield of chilli

S.No	Treatment	% midge incidence		Yield (q/ha)
		60 DAT	80 DAT	
1	T1: Neem oil 10,000 ppm @ 3mL/L-Carbosulfan 25 % EC @ 2 mL/L - Chlorantraniliprole 18.5 SC @ 0.3 mL/L	50.00 (44.98)	13.33 (21.14)	10.69
2	T2: Neem oil 10,000 ppm @ 3 mL/L- Chlorpyrifos 20% EC @ 2 mL/L - Chlorantraniliprole 18.5 SC @ 0.3 mL/L	50.00 (44.98)	13.33 (21.14)	10.55
3	T3: Neem oil 10,000 ppm @ 3 mL/L- Chlorpyrifos 20% EC @ 2 mL/L - Carbosulfan 25 % EC @ 2 mL/L	46.66 (43.06)	10.00 (18.43)	11.66
4	T4: Carbosulfan 25 % EC @ 2 mL/L – Chlorpyrifos 20% EC @ 2 mL/L - Chlorantraniliprole 18.5 SC @ 0.3 mL/L	43.33 (41.14)	10.00 (18.43)	12.91
5	T5: Chlorpyrifos 20% EC@ 2 mL/L - Chlorantraniliprole 18.5 SC @ 0.3 mL/L- Carbosulfan 25 % EC @ 2 mL/L	53.33 (46.90)	10.00 (18.43)	10.49
6	T6: Profenophos @ 2 mL/L - Chlorantraniliprole 18.5 SC @ 0.3 mL/L-Carbosulfan 25 % EC @ 2 mL/L and Neem oil 10, 000 ppm @ 3 mL/L	50.00 (44.98)	13.33 (21.14)	10.55
7	T7 : Chlorantraniliprole 18.5 SC @ 0.3 mL/L- Dichlorovos @ 2mL/L and Neem oil 10,000 ppm @3mL/L	23.33 (28.78)	10.00 (18.43)	17.36
8	T8: Control.	60.00 (50.75)	13.33 (21.14)	9.99
CD		4.79	NS	1.73
SE (m)		1.57	1.81	0.56
C.V		6.28	15.85	8.33

Management of chilli blossom midge *Asphondylia capsici* Narnes



Results revealed that the treatment with chlorpyrifos @ 2 mL/L followed by chlorantraniliprole 18.5 SC @ 0.3 mL/L followed by carbosulfan 25 % EC @ 2 mL/L recorded lowest per cent of midge incidence (36.67%) which was at par with chlorpyrifos @ 2 mL/L followed by chlorantraniliprole 18.5 SC @ 0.3 mL/L followed by carbosulfan 25 % EC @ 2 mL/L. Similar trend was observed after second spray. Highest yield was recorded in these two treatments followed by profenophos @ 2 mL/L - chlorantraniliprole 18.5 SC @ 0.3 mL/L - carbosulfan 25 % EC @ 2 mL/L and neem oil 10,000 ppm.

Table:66 Effect of different treatments on the midge incidence

S.No	Treatment	Thrips /plant		Whitefly/plant		Yield (q/ha)
		60 DAT	80 DAT	60 DAT	80 DAT	
1	Chilli + Ajwain	3.66 (2.15)	6.33 (2.69)	3.00 (1.98)	4.33 (2.30)	14.99
2	Chilli + Coriander	4.00 (2.22)	7.00 (2.81)	2.66 (1.90)	6.33 (2.70)	18.60
3	Chilli+ Sunflower	4.00 (2.22)	8.33 (3.04)	1.33 (1.52)	4.66 (2.37)	13.04
4	Chilli+ Mesta	4.00 (2.22)	7.33 (2.87)	2.00 (1.71)	7.00 (2.82)	16.38
5	Chilli +Mustard	4.00 (2.22)	8.00 (3.00)	1.33 (1.52)	6.66 (2.76)	11.10
6	Chilli+ Marigold	5.00 (2.44)	6.33 (2.70)	2.00 (1.71)	7.00 (2.82)	10.55
7	Chilli+ Fenugreek	4.33 (2.30)	6.66 (2.75)	2.33 (1.82)	8.00 (2.99)	13.32
8	Control	3.66 (2.15)	8.33 (3.05)	1.66 (1.62)	7.00 (2.82)	11.38
CD		NS	NS	NS	0.31	3.10
SE (m)		0.11	0.12	0.13	0.10	1.01
C.V		8.74	7.70	13.87	6.61	12.85



E.PLANT PATHOLOGY

FRUITS

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- In fixed plot survey eight new diseases (Cercospora leaf spot, Colletotrichum leaf spot, rust, stem girdling and spots on runners) were recorded for the first time on six different medicinal and aromatic crops such as *Holarrhena antidysenterica*, *Boerhavia diffusa*, *Achyranthes aspera*, *Cissus quadrangularis*, *Acorus calamus* and *Euphorbia tirucalli*.
- Correlation with weather parameters revealed that Colletotrichum leaf spot in *D. hamiltonii* and Uromyces rust in *Bauhinia* spp has significant negative correlation with maximum and minimum temperature and positive correlation with morning relative humidity whereas, Helminthosporium leaf spot in *A. calamus* has significant negative correlation with minimum temperature and positive correlation with morning relative humidity.
- Yellow mosaic viral disease on *Mucuna pruriens* appeared from 38th SW and reached its peak (100%) by 45th SW. Correlation studies indicated that PDI of YMV has significant negative correlation with maximum temperature only.
- Mycophagous insect of *Mycodiplosis* sp. (Diptera: Cecidomyiidae) was also found feeding on rust (*Uromyces acorii*) uredospores of vasa (*Acorus calamus*).
- In roving survey incidence of downy mildew disease was recorded as 5-10% on *Ocimum basilicum* in Prakasam district and Helminthosporium leaf spot as 15-20% on *Cymbopogon martinii* in Guntur district.
- Time of onset of YMV disease varied with the time of sowing, the crop sown in August has taken more time to attain 100% incidence in all the varieties except ArkaAswini, YMV disease incidence has significant positive correlation with white fly population in local variety only. Similarly whitefly population has significant negative correlation with maximum temperature in selection-3 and selection -8, while it has significant positive correlation with minimum temperature and evening relative humidity in Selection-2 and selection-8. In all the varieties YMV disease incidence has significant negative correlation with minimum temperature (except ArkaAswini), and evening relative humidity (except ArkaDhanvanthari), while it has significant negative correlation.
- In *A. calamus*, the highest incidence of Helminthosporium leaf spot severity was recorded in TNAC-12 (34.05%) followed by DMAPR, Anand (32.30%) whereas the lowest incidence (16.52%) was recorded in Nagireddigudem. Pooled data over 4 years indicated that the highest incidence was recorded in Symbolia (19.95%) followed by Solan (18.67%) and the lowest incidence was recorded in Betegudem (12.83%).
- In MLT on dulagondi (*M. pruriens*), data on yellow mosaic disease incidence and whitefly data was recorded. Data indicated that whitefly population appeared in 30th SW and significant difference in whitefly population among the varieties in 35th SW. Initial disease incidence of YMV was recorded in T1 in 32nd SW, while in all others the disease appeared by 35th SW.



- In Isabgol integrated disease management trial, seed treatment with Metalaxyl 35 SD @ 8g/Kg and three foliar sprays with Ridomil MZ 72 WP (Mancozeb 64% +8% Metalaxyl) significantly differed with other treatments with reduction in incidence of downy mildew/leaf spot diseases by 25.08% with highest yield (522.33 g/12 m² plot). Pooled data analysis revealed that seed treatment with Metalaxyl 35 SD @ 8g/Kg and three foliar sprays with Ridomil MZ 72 WP (Mancozeb 64% +8% Metalaxyl) significantly reduced the diseases by 23.37% with highest seed yield (359.54 g/plot) which differed significantly from rest of the treatments with Benefit Cost ratio of 0.48.
- In *Aloe vera* two leaf spot diseases were recorded at weekly intervals which indicated that the disease incidence (63.73%) and severity (19.88%) was maximum during 37th SW in 2018-19. Isolated the causal organisms of two major leaf spots.
- On *P. corylifolia*, the incidence of sclerotial root rot alone was recorded as 46.29% and root knot nematode infestation alone was 27.77% whereas sclerotial root rot + nematode infestation together was recorded as 25.92% in monitoring plots. Isolated the causal organism (*Sclerotium* sp) for root rot and proved the pathogenicity. Root gall index of score 5 (177 galls/per root system) was recorded from inoculated seedlings by destructive sampling at 45 days after inoculation with root knot nematode (*Meloidogynes* sp) second stage juveniles (@ 1000 juveniles/kg soil) on 30 days old seedlings of *P. corylifolia* in pot culture studies.

Non - Plan – Crop protection - Disease management

- Incidence of *Tomato spotted wilt virus* (51.31%) was more than *Tomato leaf curl virus* (24.73%). The lowest per cent disease incidence of tomato leaf curl virus disease (13.57%) and *Tomato spotted wilt virus* disease (31.89%) was recorded in treatment with botanical spray (Neem soap @ 10g/l followed by Azadirachtin 10,000 ppm @ 5 ml/l followed by Neem oil @ 5 ml/l sequentially at 15 days interval).
- In Cucumber, four sprays of Fenamidone 10% + Mancozeb 50% WG @ 2 g/l followed by Dimethomorph 50 WP @ 0.4 g/ at 15 days interval recorded lowest per cent disease index of downy mildew (31.56% and 35.56%) and highest fruit yield per plot (51.26 kg/plot and 45.68 kg/plot) respectively.
- During *Kharif* 43.80% and during *Rabi* 13.52% incidence of tomato wilt disease was recorded. Based on the etiology studies, *Fusarium oxysporum* and *Ralstonia solanacearum* were responsible for the incidence of fungal and bacterial wilt disease in tomato during *Kharif* and *Rabi*.

MANGO RESEARCH STATION, NUZVID

1. Survey and surveillance on occurrence of diseases of mango:

During this season anthracnose incidence was recorded as 10- 36 percent. Powdery mildew incidence was 10-82% in all the varieties of mango whereas Bacterial leaf spot was recorded more than 59 % on Baneshan variety of Mango compared to other varieties. Fruit drop due to yellowing and anthracnose fruit spot was recorded maximum in March 2019.



2. Epidemiological studies on powdery mildew and Anthracnose diseases in mango:

The mean minimum temperature of 13⁰ - 17⁰C and maximum temperature of 28⁰ C to 32⁰C and low relative humidity of 54-65 per cent recorded during 3rd week of January to Feb 2nd week was found congenial for appearance and development of disease on inflorescence to fruit setting stage on Baneshan and Tothapuri varieties of mango. Its spread was severe in 5th to 8th standard weeks (February) during this year.

3. Management of Blossom blight of mango:

All the treatments reduced anthracnose incidence effectively when compared to control. Among all the treatments Chlorothalonil (0.2%) and Propineb (0.2%) followed by Carbendazium (12%) + Mancozeb (63%) (Companion /Saff) and Tricyclozole controlled the anthracnose disease significantly compared to other chemicals.

4. Observation trail on management of powdery mildew and anthracnose diseases in Mango in Organic farming: Data recording in organic farming of mango is completed.

HORTICULTURAL RESEARCH STATION, MAHANANDI

1. Survey and surveillance of diseases in major Horticultural crops existing in Rayalaseema Zone.

Roving survey was conducted in vegetables, flowers and fruit growing areas in Kurnool and Ananthapur districts of Andhra Pradesh and recorded the incidence of diseases and mineral disorders. In Papaya collar rot, leaf curl, ring spot, viral diseases and flower drop was recorded. Incidence of collar rot ranged between 5-20%, leaf curl ranged between 30-40%, ring spot ranged between 30-70%, fruit rot ranged between 10-15% and flower drop ranged between 5-10%. In turmeric, incidence of mineral disorder (Iron deficiency) and leaf blight was recorded. Iron deficiency was recorded in 40% of fields at early growth stage, which resulted in poor vegetative growth and tillering. Incidence was more pronounced where irrigation is provided through bore well. Leaf blight ranged between 5-15% was observed. In Chilli, incidence of viral diseases, powdery mildew and wilt was recorded. Incidence of viral diseases 50-60 % (leaf curl and mosaic) was observed in early planted fields (1st week of June) compared to late planted fields (1st week of August) (10-30%). The powdery mildew incidence was ranged between 30-70% and wilt ranged between 10-20%. In sweet orange bud joint rot (5-10%), wilt (10-15%), fruit drop (10-20%) and gummosis (5-60%) was recorded. In Ridge guard leaf curl (5%) and mosaic (30-40%) was recorded. In grapes powdery mildew (5-10%) was recorded. In tube rose alternaria blight (5-10%), in Pomegranate bacterial blight (70-80%), fruit cracking disorder (10-20%), in Guava mineral disorders (20-30%), in mango powdery mildew (5-20%) and algal blight (0-30%) and immature fruit drop (15-30%) was recorded.

2. Screening of onion varieties against purple leaf blotch

Onion varieties were screened (varieties viz., Agrifound Dark Red, Bhima Safed, Bhima Swetha and Bhima Shubra) for their resistance to purple blotch and all the tested varieties were found moderately susceptible to the disease.

3. Integrated management of viral diseases in Chilli

Though all the treatments differed significantly with the control with regard to Percent Disease Index (PDI) and dry pod yield, the PDI was very high among all the treatments. As a result the yield was well below the normal yield. However among the treatments, least PDI (53.55) was recorded in the treatment that received, neem cake@1kg/m² to the nursery bed and 200 kg/acre in the main field, spraying of cyazpyr @ 1.8ml/l 2-3 days before transplanting, seedling dip of imidacloprid @ 0.5 ml/l and growing of four rows of pearl millet as border crop in the main field along with silver mulch sheet and spray of cyzpyr @ 1.8ml/l at 7 days interval till fruit formation.

CITRUS RESEARCH STATION, TIRUPATI

1. Emerging diseases of citrus

Survey was conducted in 40 sweet orange gardens in Kadapa, Anathapuram and West Godavari districts. No new disease was observed during survey. Citrus greening (0.80-53.60%), Gummosis (0-44.00 %), Citrus yellow mosaic (1.60-46.40 %), and Dry root rot (0-22.40 %) are the major diseases observed. Incidence of Greasy spot was ranged between 0.00 to 7.84 per cent. Further severe Twig blight incidence (61.60 %) was observed in Jaggannapeta village, T. P. Gudem mandal. Diplodiagummosis (0-21.60 %) was also observed along with severe Zinc and Magnesium deficiency in the three districts of Andhra Pradesh.

Twenty three acid lime orchards surveyed for occurrence of diseases in Kadapa and Nellore districts of Andhra Pradesh, revealed that bacterial Canker (2.24 -17.92 %), Greasy spot (0.00- 8.64 %), Gummosis (0.00-11.20 %) were recorded in all locations. Whereas Dry root rot (0.00-11.20 %) and LBWSD (0.00-13.60 %) Diplodia Gummosis (0.00-17.60%) were severe in Nellore district and Twig blight was also recorded (0.00-8.00 %) in surveyed locations.

2. Isolation of bio-agents for the management of dry root rot of citrus

A total of 21 bacillus isolates were isolated from soil samples collected from Kadapa, Nellore and Guntur districts. Ten fast growing and irregular spreading type colonies were chosen for duel culture with *Fusarium solani*. Among the isolates Kadapa isolate P2 recorded highest percent inhibition of 70.56 per cent.

Table: 4 In vitro screening of Bacillus isolates against *Fusarium solani*

Bacillus isolate	Radial growth of <i>F. solani</i> (cm)	Per cent inhibition over control
K1	3.80	57.78
N1	3.08	65.74
N2	3.18	64.63
P1	3.40	62.22
P2	2.65	70.56





TAI3	3.72	58.70
M3	3.87	57.04
T1	3.68	59.07
T5	3.07	65.93
T4	3.85	57.22
Control	9.00	
CD	0.49	
SE(m)	0.166	
CV	7.297	

Plate1: In vitro screening of bacillus isolates against *F. solani*

2. Screening of promising citrus rootstocks against root rot in citrus

The data revealed that out of 12 root stocks tested percent mortality was significantly low in case of Australian Sour orange (0.0%), Mediterranean orange (6.67 %) and CRH 47 (6.67) when compared to other root stocks and susceptible check Jambheri (26.67 %). Experiment is under progress.

Table 5: Screening of promising rootstocks against dry root rot

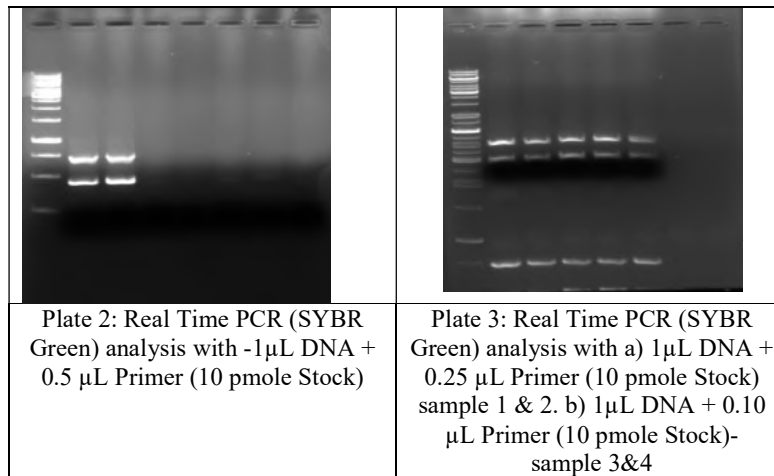
Rootstock	Mortality of seedlings (%)	Seedling height (cm)
Australian sour orange	0.00 (0.00)	51.73
Mediterranean orange	6.67 (12.29)	52.37
CRH 47	6.67 (12.29)	49.70
Roughlemon 8779	13.33 (21.14)	51.54
Rangapur lime abohar	10.00 (18.43)	53.70
Roughlemon abhor jattikatti	23.33 (28.77)	51.52
Rough lemon akola	30.00 (32.99)	52.77
Rangapur lime srirampur	16.67 (23.85)	56.55
Rangapur lime rahuri (marmalade orange)	23.33 (28.77)	51.93
Rangapur lime akola	13.33 (21.14)	53.73
Rangapur lime (tirupati)	23.33 (28.77)	51.26
Jambheri Assam	26.67 (30.98)	65.74
CD	9.303	N.S.
SE(m)	3.152	3.188
CV	25.252	10.313

4. Development of sensitive diagnostic protocols for bud wood transmitted diseases of citrus.

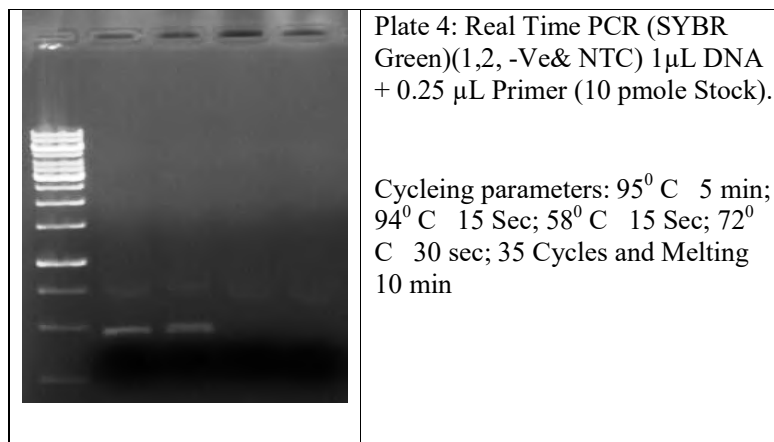
A sensitive and reliable diagnosis of citrus greening and Citrus Yellow mosaic virus was carried out by real-time PCR (SYBR Green assay). The qPCR with the optimal primer concentration combination (0.5, 0.25 & 0.1 μ L) was optimised with two cycling parameters. The initial denaturation (95°C, 5 minutes) was followed by 35 cycles of 30 seconds at 94°C, 30 seconds at 58°C, 60 seconds at 72°C and a final cooling step at 40°C for 10 seconds. Each primer concentration combination was analysed in duplicate, while the no template control was performed only once. In preliminary experiments, 0.25 μ L primer concentrations did

significantly improve qPCR assays (plate 3). The lower primer concentration was resulted in a significant improvement of the signal intensity. The cycling parameters with half of the running time resulted in poor signal intensity (Plate 4).

Further, simaltenous quantification of CGB and CYMV the aplified product of 1160 and 725 bp, respectively was successfully cloned in pGEMt vector. The isolated plasmid DNA was further sequenced (plate 5 & 6). The sequence similarity and BLASTn analysis showed 100 per cent homology with the respective species. Experiment is under progress.



Cycling parameters: 95⁰ C 5 min; 94⁰ C 30 Sec; 58⁰ C 30 Sec; 72⁰ C 1 min; 35 Cycles and Melting 10 min





```

10 20 30 40 50 60 70 80 90
1  GCGTCGGGACTTCGCAACCCATTGTAACCCACCTGTAGCACGTGTAGCCGACCCATAAGGGCCATGAGGACTTGAAGTCATCCCA
100 110 120 130 140 150 160 170 180
91  CCTCTCCGGCTTATCACCGGCAGTCCCTATAAAGTACCCAACTTAGTAAAAACCTAAACTTGAAGCAACTAGAGCCAGGGGTG
190 200 210 220 230 240 250 260 270
181  CGCTCGTTCCGGGACTTAAACCAACATCTCACGACACGAGCTGACGACGCCATGCAGACCTGTGTAAAGGCTCCCGAAAAGAAAATAC
280 290 300 310 320 330 340 350 360
271  CATCTCTGATATCGTCTTATAGCATGTCAAGGGTGGTAAAGGTTCTCGGGCTTGCATCGAATTAACCCATGCTCCACCGCTTGTGCGGG
370 380 390 400 410 420 430 440 450
361  CCCCGCTCAATTCCTTTAGTTTTAACTTTCGACCGTACTCCCGAGCGGAGTCTTAATCGCTTAGCTCGCCCACTGAATGGTAAACC
460 470 480 490 500 510 520 530 540
451  ACCCAACAGCTAGCACTCATCGTTTACGGCTGGACTACCGGGTACTAATCTGTTTGTCCCAACGCTTCCGCGCTCAGGCTCAGG
550 560 570 580 590 600 610 620 630
541  ATCAGGCCAGTGAAGCCGCTTCGCCACCGGTCTCTCCGAATATCAGGAATTTCACTCTACCTCGGAATCCACTCACCTCTCCTA
640 650 660 670 680 690 700 710 720
631  AACTCTAGACAACCCAGTATAAAGGCAGTTCCAAAGTTGAGCCCTGGATTCACCTCTAATTAATCGCCGCTACGCGCCCTTACGC
730 740 750 760 770 780 790 800 810
721  CCAGTTATCCGAAACAGCGCTCGCCCGCTTCTGATTAACCGCGGTCTGCGCACGAAGTAGCCGGGCTTCTTCCGAAATCCGTCATTA
820 830 840 850 860 870 880 890 900
811  TCTTCTCGGGAAGGCTTTACACCCCTAAGCTTCTCACTCACGCGGATGCTGATCAGGTGCCCAATTTCCATATCCCACTGCTGCC
910 920 930 940 950 960 970 980 990
901  TCCCGTAGAGTCTGGCGGTCTCAGTCCAGTGTGGCTGATGCTCCTCTCAAACAGCTTAGATCGTAGCTGGTAGGCTTTAAACCTA
1000 1010 1020 1030 1040 1050 1060 1070 1080
991  CCACCTAGCTATCCAGCAGGGCCATCTCTCCCTCAATAAATCTTCCATAGGCGTTAAACCGATATGACACCGTCTAGCGTATCCAGGA
1090 1100 1110 1120 1130 1140
1081  AAAGTAGATTCACAGGTGGTAAACGGGCTCGTTACATACCCCAACCCATGTGATTAGGGCCCGTAGT

```

Plate 5: 16S rRNA gene complete sequence of citrus greening bacterium tirupati isolate

```

10 20 30 40 50 60 70 80
1  CGCAGGCCGAAAGACAAAGGAGTAGTAATTTGATGAAGGATCTTGCTACTTCAACCCAGAGGAACAACCCAGAAATAGTTGC
90 100 110 120 130 140 150 160
81  TCAATGGAGACACACAGGTTTACCAAACTCGACCTGTGAAAAATATGTTATACACATGGATGTGCGAATGGAGATTTCCCG
170 180 190 200 210 220 230 240
161  GCATCCAGCTTTTACAGTCAAGGCGATACTCGATACAGGAGCAACACCTGCTGCAATTGACAGTAGGAGTGTCCAAAATA
250 260 270 280 290 300 310 320
241  GATGCCCTGGAGGAAAATTCCTTTTGGTGAATTTCTCAGGCACTCAACTCTAAACAGCAGTCAAAACAGAGATCAAGCC
330 340 350 360 370 380 390 400
321  AGGGAATAATGTTCAATAATGAGCATTAATTCGGGATTCATATCTGTTACAGCTTTGAGATGCCAAATGGTGATGGTATCC
410 420 430 440 450 460 470 480
401  AACTCATCTCTGGGTGTAACTTTATACGAAGTATGTACGGCGGTGTTGATTAAGGGTAAATACATATAACCTCTATAG
490 500 510 520 530 540 550 560
481  CAGATCACAAAGCATCAACACTCGACTTGCTGCACTCTTATCCAGCAGGACGAAGAAAAGGAGAGGACTTAAACCTAGA
570 580 590 600 610 620 630 640
561  AGAGCACAGGTTAATCCAGGAAATGGTTGCATCTACTAGAGGGCCATTGTTTCATTCCAAACAAAATTTGACAGGGC
650 660 670 680 690 700 710 720
641  TTATTCAGGAGTTAAAGCCAGGGATACATCGGAGAAAGCCATGAAATATTTGGCCAAAACCAAGTTGTTTCCAT
721  CTGG

```

Plate 6: Poly protein gene partial sequence of CYMV Tirupati isolate

5. Integrated management of dry root rot (*Fusarium*, *Rizoctonia*)

Three seasons of experimentation conducted between 2015 to 2018 revealed that the T₄ (Mancozeb @ 0.2% soil drench followed by application of *Trichoderma reesei*(TCT₁₀)(100g/tree) (10⁷) and *Pseudomonas fluorescens* (100g/plant) (10⁸) with 2kg neem cake 25 kg FYM after 25 days of drenching) treatment recorded lowest per cent of mean leaf rolling intensity, root necrosis and disease incidence of 21.53, 8.97 and 27.78, respectively which was significantly superior over the remaining treatments. Further, it has recorded zero per



cent mortality. Highest mean yield of 51.23 kg/tree was recorded in T₄ which was significantly superior over the remaining treatments. Highest mean cost benefit ratio of 2.37 was recorded in T₄ whereas the control T₅ (farmers practice) recorded 1.60.

Table 1: Effect of different treatments on leaf rolling intensity and incidence of root necrosis due to dry root rot in citrus

Treatments	Leaf rolling intensity (%)				Incidence of root necrosis(%)			
	2016-17	2017-18	2018-19	Mean	2016-17	2017-18	2018-19	Mean
T ₁	35.42 (36.40)	62.50 (52.28)	41.67 (40.04)	46.53 (42.99)	28.34 (32.09)	37.00 (37.35)	16.94 (24.21)	27.43 (31.55)
T ₂	20.84 (27.04)	41.67 (40.12)	37.50 (37.72)	33.33 (35.23)	16.59 (23.95)	20.17 (26.15)	9.58 (17.67)	15.45 (22.91)
T ₃	18.75 (25.56)	39.58 (38.95)	35.42 (36.48)	31.25 (33.96)	17.08 (24.38)	14.92 (22.70)	7.64 (15.70)	13.21 (21.30)
T ₄	12.50 (20.43)	33.33 (35.17)	18.75 (25.56)	21.53 (27.62)	9.83 (18.21)	11.25 (19.57)	5.83 (13.43)	8.97 (7.40)
T ₅	45.84 (42.59)	68.75 (56.27)	43.75 (41.35)	52.78 (46.58)	39.83 (39.11)	50.67 (45.38)	16.25 (23.65)	35.58 (6.58)
CD	4.971	7.981	5.442	3.034	2.962	6.582	5.751	3.445
SE(m)	1.596	2.562	1.747	0.974	0.951	2.113	1.846	1.106
CV	10.496	11.499	9.642	5.225	6.902	13.977	19.500	8.523

Table 2: Effect of different treatments on disease Index and morality due to dry root rot in citrus

Treatments	Disease Index (%)				Mortality (%)			
	2016-17	2017-18	2018-19	Mean	2016-17	2017-18	2018-19	Mean
T ₁	41.67 (40.15)	66.67 (54.80)	54.17 (47.42)	54.17 (47.38)	8.33	25.00	8.33	13.89
T ₂	22.92 (28.51)	54.17 (47.42)	41.67 (40.15)	39.58 (38.97)	0.00	8.33	0.00	2.78
T ₃	25.00 (29.99)	52.08 (46.18)	39.58 (38.95)	38.89 (8.56)	0.00	0.00	0.00	0.00
T ₄	14.59 (22.26)	45.83 (42.59)	22.92 (28.35)	27.78 (1.78)	0.00	0.00	0.00	0.00
T ₅	56.25 (48.61)	72.92 (58.82)	52.08 (46.18)	60.42 (1.04)	25.00	41.67	16.66	27.78
CD	5.907	5.602	7.766	3.908	-	-	-	-
SE(m)	1.896	1.798	2.493	1.254	-	-	-	-
CV	11.185	7.198	12.40	6.039	-	-	-	-

Table 3: Effect of different treatments on yield parameters in dry root rot infected citrus



Treatments	Yield(Kg/tree)				CB ratio			
	2016-17	2017-18	2018-19	Mean	2016-17	2017-18	2018-19	Mean
T ₁	26.25	32.29	30.21	29.58	1.6	1.8	1.7	1.70
T ₂	38.67	47.25	39.00	41.64	2.0	2.3	1.9	2.07
T ₃	38.25	54.83	41.92	45.00	2.0	2.6	2.0	2.20
T ₄	45.58	60.83	47.29	51.23	2.2	2.8	2.1	2.37
T ₅	23.58	29.75	33.54	28.96	1.4	1.6	1.8	1.60
CD	6.347	13.225	11.452	5.661	-	-	-	-
SE(m)	2.037	4.245	3.676	1.991	-	-	-	-
CV	11.821	18.871	19.150	17.559	-	-	-	-

Recommendation: Soil drenching with mancozeb @ 0.2% after 25 days application of *Trichoderma reesei*(TCT₁₀)(100g/tree) (10⁷) and *Pseudomonas fluorescens* (100g/plant) (10⁸) with 2kg neem cake and 25 kg FYM twice in a year during June-July and December-January is effective in management of dry root rot caused by *Fusarium solani*.

6. Assessment of phenology, productivity, insect pests, diseases and of citrus grown under varying climatic conditions (Sweet orange):

Impact of climate on crop phenology and productivity of sweet orange:

- *Ambia* flowering extended up to first week of February, 2018. Hence, crop harvesting was delayed and completed in October, 2018.
- Mrigbahar flowering was very less (10%).
- Hasta bahar flowering (October- November) was regular and the fruits could be harvested during April, 2018.
- More number of vegetative flushes were observed in the spring, summer and autumn.
- Sun scorching, fruit cracking and fruit dropping symptoms noticed during March, 2017 due to high temperatures at fruit development stage.

Weather conditions: To study the trend of recent variation in the climate, the decennial average maximum and minimum temperature (°C), relative humidity, rain fall and evaporation were computed for different months for the period 2007-17 and were compared against the respective average monthly maximum and minimum temperatures of 2018 (Table 47,48,49).

A noticeable rise has occurred in the average maximum temperature of the January, February, March and September months during 2018 as compared to the decennial average maximum temperatures for these months. An increase of 1.16 (March) and 1.24 °C (September) has been observed (Table 1). The upper temperature limit in these months is critical for fruit set and development and also for harvesting. The average minimum temperature was also very low (-5.01°C) during March, 2018 (Table 1). Due to large difference in diurnal temperatures during March severe leaf fall was noticed in citrus orchards.

Table 47. Comparison of decennial average monthly maximum and minimum temperatures with that of present actual monthly temperatures

Month	Decennial			Decennial		
-------	-----------	--	--	-----------	--	--



	Avg. Max Temp(^o C) (2007-17)	2018	Difference (^o C)	Avg. Min Temp(^o C) (2007-17)	2018	Difference (^o C)
January	29.89	29.80	-0.09	17.23	16.10	-1.13
February	32.44	32.10	-0.34	17.99	16.60	-1.39
March	34.44	35.60	1.16	25.51	20.50	-5.01
April	38.43	38.00	-0.43	24.87	25.60	0.73
May	39.37	38.40	-0.97	27.01	26.70	-0.31
June	36.75	36.90	0.15	26.52	26.70	0.18
July	35.16	35.90	0.74	25.83	26.70	0.87
August	34.15	35.10	0.95	24.93	26.20	1.27
September	33.46	34.70	1.24	24.01	24.70	0.69
October	32.66	33.50	0.84	22.74	22.30	-0.44
November	30.13	30.80	0.67	21.38	21.20	-0.18
December	29.03	29.40	0.37	18.79	19.80	1.01

A relative increase in the relative humidity (Morning and evening) has been observed compared to decennial average.

Table 48. Comparison of decennial average monthly maximum and minimum relative humidity with that of present actual monthly relative humidity						
Month	Decennial Avg. RH Morning (%) (2007-17)	2018	Difference	Decennial Avg. RH Evening (%) (2007-17)	2018	Difference
January	86.75	87.90	1.15	50.75	48.40	-2.35
February	83.74	87.10	3.36	41.07	36.00	-5.07
March	80.26	81.40	1.14	35.82	34.50	-1.32
April	73.60	79.20	5.60	33.03	38.20	5.17
May	62.96	76.90	13.94	34.24	39.40	5.16
June	66.75	70.40	3.65	40.33	42.10	1.77
July	70.43	66.60	-3.83	43.80	41.30	-2.50
August	75.77	70.30	-5.47	49.45	44.00	-5.45
September	80.07	81.00	0.93	52.95	48.20	-4.75
October	83.24	85.40	2.16	54.64	50.90	-3.74
November	85.07	88.80	3.73	64.75	55.60	-9.15
December	84.82	85.30	0.48	60.08	58.00	-2.08

The decennial average annual rainfall of this place is 1064.81 mm. The maximum rainfall of 1800 mm was recorded in the year 2015. The months of June to November are the rainy months of the region. However, the observation of past years showed that maximum rainfall was recorded during November month. A large variation has been observed in the amount of rainfall received during different years, but, overall, the total rainfall per annum is decreasing and its pattern is getting erratic.

Table 49. Comparison of decennial monthly mean rainfall with that of present actual monthly rainfall			
Month	Decennial Avg. Rain fall(mm)	2018	Difference



	(2007-17)		
January	5.58	0.00	-5.58
February	7.84	28.40	20.56
March	14.81	12.80	-2.01
April	22.09	2.20	-19.89
May	76.98	84.20	7.22
June	81.48	51.20	-30.28
July	115.28	35.60	-79.68
August	158.58	70.60	-87.98
September	130.99	169.40	38.41
October	155.89	90.00	-65.89
November	203.22	114.80	-88.42
December	92.07	27.40	-64.67
Total	1064.81	686.60	-378.21

A. Impact of climate on Pest and diseases incidence of sweet orange:

- The incidence of citrus leaf miner was moderate from July to August and October to January.
- Severe rust mite infestation was recorded from March to August, 2018.
- Among the other pests thrips infestation was found to be high on fruits during March to August and Ash weevil incidence was high during December to February and July to October.
- Citrus fruit sucking moth incidence was noticed during August to October, 2018

Table 50: Sweet orange pest calendar(2018)		
Pest	Percent damage	Period
Leaf miner	15-20% (moderate)	July to August and October to January
Rust mites	Fruit damage 18-23% (Severe)	March to August
Citrus Hindu mite/Citrus nest webbing mite	60-70 % (severe)	February to September
Thrips	Fruits (10-15%)-High	March to August
Citrus fruit sucking moth	Fruits 35-40%	August to October
Psylla	Foliage 14-26% (Moderate)	January to March
Ash weevils	30- 40% (High)	December to March and July to October

- Canker and greasy spot incidence was high during January, 2018.
- Scab disease incidence was high during Jan- Feb, 2018.
- Twig blight was noticed during October-November, 2018.
- Greasy spot incidence was high during January, 2018.

Table 51: Sweet orange disease calendar(2018)



Month	Canker (PDI)	Greasy spot (PDI)	Scab (PDI)	Twig blight (%)
January 2018	1.50	3.50	1.75	0.00
February 2018	0.50	1.50	1.50	0.00
March 2018	0.50	1.00	0.50	0.00
April 2018	0.00	0.50	0.50	0.00
May 2018	0.00	0.50	0.50	0.00
June 2018	0.50	0.50	0.50	0.00
July 2018	0.25	0.50	0.50	0.00
August 2018	0.00	0.50	0.38	0.13
September 2018	0.00	0.50	0.25	0.25
October,2018	0.50	1.50	0.00	1.50
November,2018	1.50	2.50	0.00	1.50
December,2018	1.50	1.50	0.00	1.50

7. Assessment of phenology, Productivity and insect pests and diseases in citrus grown under varying climatic conditions (Acid lime):

Impact of climate on crop phenology and productivity of acid lime :

- *Ambia* flowering (75%) was extended and it remained continued up to first fortnight of March, 2017. Flower & fruit drop were reported.
- Hasta bahar fruits were harvested during April-May, 2017.
- *Mrig* flowering, 2017 was very poor .
- Due to prolonged *Ambia* flowering, fruit harvesting was continued up to August, 2017.
- Severe leaf fall was noticed due to variations in maximum and minimum temperatures.

Table 52: Meteorological data (2018)

Month	Temp ⁰ (C)		Relative Humidity (%)		Evaporation (mm)	Total Rain fall (mm) & rain days
	Max	Min	Morning	Evening		
Jan.,2018	29.80	16.10	87.90	48.40	4.40	0(0)
Feb,2018	32.10	16.60	87.10	36.00	5.40	28.4(1)
March, 2018	35.60	20.50	81.40	34.50	6.50	12.8(1)
April, 2018	38.00	25.60	79.20	38.20	7.20	2.20(0)
May, 2018	38.40	26.70	76.90	39.40	6.20	84.20(3)
June, 2018	36.90	26.70	70.40	42.10	5.60	51.20(5)
July,2018	35.90	26.70	66.60	41.30	6.40	35.60(2)
Aug,2018	35.10	26.20	70.30	44.00	5.90	70.60(5)
Sep,2018	34.70	24.70	81.00	48.20	5.20	169.40(9)
October, 2018	33.50	22.30	85.40	50.90	5.10	90.00(4)
Nov, 2018	30.80	21.20	88.80	55.60	4.60	114.80(6)
Dec, 2018	29.40	19.80	85.30	58.00	5.10	27.40(2)

A. Impact of climate on Pest and diseases incidence of acid lime:



- Acid lime pest calendar revealed that leaf miner damage was moderate during July to August and citrus butterfly incidence was high during June to August
- Rust mite and thrips damage was high during February – June month and continued till August.
- Among minor pests moderate snow scale damage was noticed on tree trunk region during February- June and July
- Citrus Hindu mite/Citrus nest webbing mite damage was high on leaves from January to September.

Table 53. Acid lime pest calendar (2018)		
Pest	Percent damage	Period
Leaf miner	12-16% (Moderate)	July to August
Citrus butterfly	7-9% (Low)	June to August
Rust mites	Fruits (11-15%High)	February-May/June/August
Thrips	Fruits (12-15% High)	February-May/June/August
Scales	10- 20% (Moderate)	February- June/July
Citrus Hindu mite/Citrus nest webbing mite	Foliage 55-65 % (Severe)	January to September

- Acid lime disease calendar revealed that bacterial canker was severe during January, 2018.
- Twig blight was severe during October, 2018 to December, 2018.
- Greasy spot incidence was noticed all round the year, however it was high during January, 2018.

Table : 54. Acid lime disease calendar(2018)				
Month	Canker (PDI)	Greasy spot (PDI)	Scab (PDI)	Twig blight (%)
January 2018	23.75	10.50	0.00	0.00
February 2018	10.83	5.17	0.00	0.00
March 2018	0.90	1.20	0.00	0.00
April 2018	0.5	0.5	0.00	0.00
May 2018	0.5	0.5	0.00	0.00
June 2018	0.5	0.5	0.00	0.00
July 2018	0.5	0.5	0.00	0.00
August 2018	0.75	0.75	0.00	0.25
September 2018	1.00	1.00	0.00	0.25
October, 2018	4.00	2.00	0.00	1.50
Nov, 2018	6.80	3.30	0.00	1.50
Dec, 2018	7.25	4.00	0.00	1.50

CITRUS RESEARCH STATION, PETLUR

1. Survey and monitoring of important diseases of acid lime in Nellore district.

Greasy spot severity was low and appeared only during the months of December and January. Maximum severity of 15.3% was recorded in Dakkili mandal. Diplodia



gummosis incidence was recorded in moderate to severe form in majority of the gardens leading to drying of branches and in severe case whole plant was dried. 14% of the trees were dried due to dry root rot. Moderate to severe infestation of nematodes were recorded in majority of gardens.

2. Effect of different packaging systems on sour rot and storage life of acid lime fruits.

Among different edible coatings marketable fruit percentage (87.56%) was more in boric acid 1% treated fruits when compared to the control. The physiological loss in weight was minimum (5.6%) with high juice content. The acid lime fruits packed in LDPE covers recorded less percentage of spoiled fruits i.e., 10.7 % when compared to the locally used urea bags (47.8%) and gunny bags (18.3%) with minimum physiological loss in weight and high juice content i.e., 7.9 and 61.4% respectively. (concluded)

3. Development of management schedule for economically important diseases of acid lime.

The trees in IDM scheduled plots are healthy, vigorous and has given higher yields with low incidence of greasy spot and canker. Moreover the diseases like root rot and diplodia gummosis was not observed in the IDM scheduled plots compared to the farmers practice and recorded 2.7 : 1 B:C ratio.

4. Isolation and Identification of endophytic microorganisms from Acid lime roots against soil borne pathogens (Root rot pathogen)

Different endophytes were tested against dry root rot pathogen *Fusarium solani*. Out of 25 isolates two isolates were found effective and recorded minimum growth of pathogen and identification is under progress.

5. Prophylactic application of IDM technology for the management of Dry Root rot in acid lime.

IDM package developed and validated were prophylactically tested by applying the package two times yearly to healthy plants and recorded the per cent root rot and yields. The plant growth and yield was maximum in IDM package given trees with no incidence of root rot compared to control.

6. Integrated Management of *Tylenchulus semipenitrans* (Citrus nematode) in Acid lime growing in Nellore district.

Application of Carbofuron 3G granules twice in the month November and January reduced the nematode population in the soil.

HORTICULTURAL RESEARCH STATION, KOVVUR

BANANA

Survey of emerging disease(s) of banana

Surveys were conducted in East Godavari, West Godavari, Vizianagaram and Visakhapatnam districts of Andhra Pradesh. *Eumusae* leaf spot, Rhizome rot, Fusarium wilt, BBrMV, CMV and BBTV were the major diseases observed in the surveyed districts. New and emerging diseases were not observed during this period. Among the diseases, *Eumusae* leaf spot disease incidence was more in the districts surveyed (Fig: 7) and the average disease incidence recorded was 28.60% in Grand Naine variety followed by bacterial disease *i.e.* Rhizome rot.

The prevalence of bacterial rhizome rot was more in TellaChakkerakeli variety and the average disease incidence recorded was 15.42 per cent. This year, rhizome rot incidence was also observed in KarpuraChakkerakeli variety which was reported to be tolerant. The pathogen is identified as *Erwinia* sps.

Incidence of Fusarium wilt was observed in Amritapani variety (12.35%). Among the viral diseases, BBrMV was found to be the most prevalent disease in the variety K.C.Keli and the average incidence recorded was 7.86 per cent followed by BBTV (2.08%). However, incidence of CMV was also observed during the year. Average incidence of *Eumusae* leaf spot, Rhizome rot and BBrMV during the year was slightly more when compared to last year.



Fig:7 Disease incidence map of banana in Andhra Pradesh (2018-19)

Validation of superior best treatments for the management of *Fusarium* wilt disease

Fresh planting with four treatments of pot culture experiment was initiated with the susceptible variety, Amritapani during September, 2018. The crop is in vegetative stage. Percent Wilt index among the treatments varied from 45.00% to 58.47% and percent disease infection among the treatments varied from 74.07% to 82.50%. All the observations were found non-significant.

Management of *Eumusae* (sigatoka) leaf spot disease of banana

The experiment was initiated with ratoon crop during May, 2018 and treatments were imposed after the onset of disease. A total of six sprays were given at 25 days interval. Crop is at bunch development stage. Among the five treatments studied against *Eumusae* leaf spot of banana, treatment T₂ [Propiconazole (0.1%) + mineral oil (1%) 3 sprays at 25 days interval] recorded significantly lowest disease severity index. The treatment T₂ recorded percent disease index of 8.33% against 17.19% in control. Youngest leaf spotted was also highest and significant in T₂ (10.18).



Diagnosis of banana viruses in germplasm and planting material used in experiments

Of the 124 accessions screened, 7 accessions (SannaChenkadali, Samarai-2, Gross Micheal, Red banana, Jahaji, Gandevi, N Jalipoovan) were found infected with BBrMV and 2 accessions (Amritapani, Manoranjitham) each with BBTV and CMV virus. None of the genotypes was infected with BSV. In field No.7A, two plants (Amritapani) were infected with BBTV. In field No. 10 & 6A, two plants (KarpuraChakkerakeli) were infected with BBrMV. In field No. 11, one plant (Grand naine) was infected with BBrMV. The results were presented below in the table.

Diagnosis of banana germ plasm and planting material for viruses

Field No	Cultivar	Total accessions indexed	Positive samples			
			BBrMV	BBTV	BSV	CMV
7B	Germplasm	127 accessions	7	2	-	2
7A	Amritapani	48 sucker material from Maredumilli	-	2	-	-
6A	KCKeli	30 TC Plants	2	-	-	-
10	KCKeli	38 TC Plants	2	-	-	-
11	Grand naine	25 TC Plants	1	-	-	-

BBrMV- *banana bract mosaic virus*: BBTV- *banana bunchy top virus*: CMV- *cucumber mosaic virus*

Studies on Post-harvest diseases of banana

Anthraxnose, Crown rot and cigar-end rot are the major diseases observed on banana fruits kept for storage. Different causal organisms were obtained from the infected portions of banana fruits and were identified as *Fusarium* sp., *Verticillium theobromae* and *Colletotrichum musae* based on its cultural, spore characters and microscopic examination of the spores.

Integrated Management of Rhizome rot disease of banana

The experiment was initiated with the variety TellaChakkerakeli. The crop is in vegetative stage. Percent disease incidence recorded among the treatments was high and varied from 4.15% to 52.08%. The treatment T₄ (Soil application of MOP @ 65g/pit each at basal, 35, 70, 105 and 140 DAP + N and P as recommended + Soil application of gypsum @ 50g MnSO₄ @ 10g + ZnSO₄ @ 15g + Soil application *Pseudomonas fluorescens* @ 10g/Plant with neem cake as basal + FYM @ 8.3 kg/Plant) recorded significantly lowest disease incidence by the end of 4MAP and 5MAP (27.08% at 4MAP, 37.50% at 5MAP).

JACK

New and emerging diseases of jackfruit

Surveys were conducted in East Godavari and West Godavari districts of Andhra Pradesh. New and emerging diseases were not observed during the period. Fruit rot (Fig:8) was found to be the major disease of Jackfruit in Andhra Pradesh followed by leaf spot. Average disease incidence of fruit rot was 22.6 per cent followed by leaf spot with an average per cent disease index of 7.69%. Jack wilt incidence was observed in traces.



Fig: 8 Disease map of Jack fruit in Andhra Pradesh (2018-19)

Etiology of jackfruit wilt diseases

Rhizospheric soil, root bits of wilt affected jack fruit plants were collected for isolation of the pathogens. Two pathogens were isolated from infected roots of wilt affected jackfruit plants and sub cultured for purity. After purification and microscopic studies, the fungi were identified as *Fusarium* sp. and *Phytophthora* sps. The isolated pathogens were mass multiplied and inoculated to jack seedlings for testing the pathogenicity. However, the isolated *Fusarium* sp. could not produce disease symptoms on inoculated jack seedlings. To confirm the pathogenicity of *Phytophthora* sp, one-month-old jackfruit seedlings were artificially inoculated by the pathogen around the roots. Plants showed the visible symptoms like chlorosis of the foliage, drooping of the leaves, defoliation and wilting after 3-4 weeks in potted seedlings. The pathogen was re-isolated from inoculated plant tissues showing distinctive disease symptoms.

PLANTATION CROPS

COCONUT

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Path.1: Survey and surveillance of coconut diseases

Roving survey:

Surveys were conducted in different mandals of East Godavari, West Godavari, Srikakulam and Visakhapatnam districts of Andhra Pradesh. Major diseases observed in coconut gardens were basal stem rot, stem bleeding and bud rot along with minor incidence of grey leaf spot and leaf blight. It was observed that BSR disease was noticed in all places surveyed. The maximum of 9.97 per cent disease was recorded at Mamidikuduru mandal and lowest incidence



of 2.33 per cent was noticed at Atchutapuram mandal in Vishakhapatnam district. The other important disease, stem bleeding was also recorded during survey. The disease was more severe at Atchutapuram mandal in Vishakhapatnam district (3.70%) and it was lowest at Mamidikudurumandal in East Godavari district (0.60%). Further, highest bud rot disease incidence was observed at Ainavilli mandal recording 1.17% and lowest disease was recorded at Kotturu mandal in Srikakulam district (0.27%) (Table.49).

Table:48. District wise disease scenario of coconut in Andhra Pradesh during 2018-19

S. No	District	Mean Percent disease incidence					
		Basal stem rot		Stem bleeding		Bud rot	
		Sep 18	Feb 19	Sep 18	Feb 19	Sep 18	Feb 19
1	East Godavari	7.92±1.18	7.75±0.85	1.33±0.41	1.28±0.24	0.77±0.22	0.71±0.08
2	West Godavari	7.35±1.31	6.81±0.98	1.83±0.30	1.81±0.20	0.70±0.19	0.73±0.17
3	Srikakulam	5.86±1.72	5.57±1.18	2.61±0.65	2.45±0.63	0.71±0.19	0.62±0.08
4	Visakhapatnam	4.08±1.86	3.88±1.31	1.97±0.70	1.83±0.50	0.72±0.18	0.57±0.10
Over all Mean		6.30±0.86	5.95±0.80	1.94±0.26	1.84 ±0.24	0.73±0.02	0.66±0.04

*Mean ± Standard value

Expt:2 . Fixed plot survey:

Fixed plot survey was taken up for stem bleeding and bud rot diseases at Horticulture Research station, Ambajipeta and for basal stem rot disease (*Ganoderma*) disease in farmer's field at P. Gannavaram village in East Godavari District at quarterly intervals from April 2018 to March 2019. Percent disease incidence of basal stem rot during April 2018 was 33.52% which was increased to 35.80% by the end of March 2019. Percent incidence of stem bleeding disease varied between 2.32 to 2.81% during 2018-19. Bud rot disease incidence was observed from September 2018 to March 2019. 1.89% of bud rot was observed during October 2018 and 1.00%, and 0.50% was recorded during January and March 2019. (Table:50).

Table:50 Fixed plot survey on incidence of coconut diseases in Andhra Pradesh

Month	Disease status		
	Basal Stem Rot (%)	Stem Bleeding (%)	Bud Rot (%)
April 2018	33.52	2.32	0.00
July 2018	33.52	2.32	0.00
October 2018	34.21	2.81	1.89
January 2019	33.21	2.72	1.00
March 2019	35.80	2.79	0.50



Path. 2: Basal stem rot disease

Expt. 1: Characterization and management of basal stem rot disease of coconut

Six isolates of *Ganoderma* spp. representing varied geographical locations were collected and their variations with respect to morphological and cultural characters were documented. The radial growth of isolates was around 90mm in 8 days in almost all the isolates and statistically there was no difference among the isolates with respect to growth. The colony characters of all isolates were white in colour and most of them were cottony growth and a few produced leathery growth.

<i>Ganoderma</i> isolate	Part of collection	Mycelial growth (mm) of <i>Ganoderma</i>				Morphological character
		2 DAI	4 DAI	6 DAI	8 DAI	
Dwarapudi	Root	10.00	40.00	60.00	90.00	Sparse cottony
Peddapatnamlanka	sporophore	10.00	30.00	70.00	90.00	White cottony
kalavalapalli	Root	10.00	30.00	60.00	90.00	Sparse cottony
Kaviti	Root	5.00	30.00	70.00	90.00	Leathery
Pedavegi	sporophore	5.00	40.00	60.00	90.00	White cottony
Ainavelli	Root	5.00	30.00	60.00	90.00	Sparse cottony

Expt.4: Epidemiology and disease forecasting

Impact of other palms and intercrops in coconut on occurrence and spread of disease

The study was initiated in November 2010 to study the impact of other palms and intercrops in coconut on occurrence and spread of basal stem rot disease. Fifty palms in the field with sole coconut and field with coconut + banana were selected in Gannavaram village of East Godavari District. Horizontal and vertical spread of the disease in sole coconut as well as coconut intercropped with banana during the period is being recorded.

In sole coconut plot, the PDI of 33.52% during April 2018 was increased to 35.80% by the end of March 2019. Mean vertical spread in sole coconut crop was recorded as 114.25 cm in April 2018 and as 109.23 cm in March 2019. Over a period of 6 years, the percent disease incidence of 2.0 % (Nov, 2010) in sole coconut was increased to 35.80% (March 2019).

In the new plot selected for coconut and banana, the 19.42% PDI during April 2018 was increased to 24.29% by the end of March 2019. Mean vertical spread of the disease in coconut + banana plot was recorded as 128.32 cm in April 2018 and as 148.55 cm in March 2019.

Expt. 3: Management of coconut basal stemrot disease through biological control agents

Effective bacterial endophytes were isolated from healthy coconut plant materials and one among them was found effective against *Ganoderma*, and the endophyte isolate was kept for dual culture studies against different *Ganoderma* sp. Among all the endophytes tested EP4 isolate



showed 51.11 percent inhibition whereas remaining all isolates showed 90 mm growth after 8 days after inoculation.

Dual culture isolates	Mycelial growth (mm) of <i>Ganoderma</i>			
	2 DAI	4 DAI	6 DAI	8 DAI
<i>Ganoderma</i>	30.00	55.00	85.00	90.00
<i>Ganoderma</i> x EP1	31.67	61.67	85.00	85.00
<i>Ganoderma</i> x EP2	32.33	61.67	90.00	90.00
<i>Ganoderma</i> x EP3	33.33	58.33	90.00	90.00
<i>Ganoderma</i> x EP4	22.12	35.28	42.16	44.00

DAI- Days after inoculation

S. No	Treatment	Mycelial growth (mm) of <i>Ganoderma</i>	Percent inhibition over control
1	G1 × EP	44.00	51.11
2	G2 × EP	40.00	55.56
3	G3 × EP	46.67	48.15
4	G4 × EP	41.67	53.70
5	G5 × EP	43.33	51.85
6	G6 × EP	37.33	58.52
7	G7 × EP	33.33	62.96
8	Control	90.00	0.00

Based on dual culture studies with effective endophytic bacteria against seven *Ganoderma* isolates, observed more than 50% of inhibition compared to control. Hence this endophytic bacterium was selected for field experiment against *Ganoderma* disease.

Expt. 4: Management of coconut basal stem rot disease through fungicides

Under *in vitro* screening of latest systemic fungicides viz., Thifluzamide 24 SC, Mancozeb 50% + Carbendazim 25% WS, Zineb 68% + Hexaconazole 4% WP, Myclobutanil 10% WP, Dodine 65% WP, Pyraclostrobin + Fluxapyroxad 250 SC, Kresoxymethyl 44.3% SC, Isoprothiolone 40% EC against *Ganoderma sp* at different concentrations (100 ppm, 250ppm, 500ppm and recommended concentrations), except Kresoxymethyl 44.3% SC (12.96%), all chemicals showed 100 percent inhibition at recommended concentration.

Based on the mobility test, among all the effective systemic chemicals Zineb 68% + Hexaconazole 4% WP showed good mobility. Hence it was selected for field studies.

For field evaluation of fungicide Zineb 68% + Hexaconazole 4% WP, field selection was done at Peddapatnamlanka village of East Godavari district. An experiment on field evaluation of Zineb 68% + Hexaconazole 4% WP fungicide at different dosages were initiated against basal stem rot disease of coconut at farmer's coconut garden at Peddapatnamlanka village of East Godavari district during the month of December 2019. Pre and Post treatmental data was recorded on disease index. Among all the treatments evaluated, except T₄ (Root feeding of Zineb 68% +



Hexaconazole 4% WP @8g + 100 ml water at three months interval) and T₅ (Root feeding of Hexaconazole @3 ml + 100 ml water at three months interval) none of them showed reduction in disease intensity compared to pre treatmental data at 3 months after treatment.

Treatment Number	Treatment details	Disease index	
		Pre treatmental data	3 MAT
T ₁	Root feeding of Zineb 68% + Hexaconazole 4% WP @ 2g + 100 ml water at three months interval	52.91 (51.47)	54.64 (50.88)
T ₂	Root feeding of Zineb 68% + Hexaconazole 4% WP @ 4g + 100 ml water at three months interval	39.56 (38.75)	43.35 (41.18)
T ₃	Root feeding of Zineb 68% + Hexaconazole 4% WP @6g + 100 ml water at three months interval	45.51 (42.92)	46.51 (43.00)
T ₄	Root feeding of Zineb 68% + Hexaconazole 4% WP @8g + 100 ml water at three months interval	35.67 (29.27)	33.28 (35.23)
T ₅	Root feeding of Hexaconazole @3 ml + 100 ml water at three months interval	37.97 (38.04)	34.56 (36.01)
T ₆	Control	66.01 (60.81)	70.22 (60.19)
	CD (P≤0.05)	15.91	20.30
	SEm±	5.39	6.88

Path. 3: Stem bleeding disease

Expt. 1: Management of stem bleeding disease in coconut

Activity I: Evaluation of Bioagents

Evaluation of different formulations of bio agent, *Trichoderma* was tested against stem bleeding disease of coconut at farmer's field at Mukkamala village. Effect of *Trichoderma harzianum* cake formulation as well as *Trichoderma reesei* paste formulation along with positive control (paste application of Bordeaux mixture) was tested against stem bleeding disease of coconut. In case of cake application the treatment was given only once during the study period. In case of paste application, the paste application was carried out every month. Every month the treated palms were observed for the disease symptom and the percent recovery of the treated palms was observed.

Application of *T. harzianum* cake formulation completely recovered the diseased palms when compared to the paste application of *T. reesei* and Bordeaux mixture against stem bleeding disease of coconut. Disease index of 6.20 at Mukkamala village was brought down to 0.00 per cent within 50 days of cake application. Disease index of 6.59 was reduced to 5.35 in case of paste application of Bordeaux mixture at Mukkamala village and Disease index of 6.90 was reduced to 4.68 in case of paste application of *T. reesei* (Table:52). However, the treatments



differed significantly. The experiment on stem bleeding management will be initiated with our native isolate *T. reesei* in cake formulation.

Table: 52 Field evaluation of cake and paste formulations of *Trichoderma* species against stem bleeding disease of coconut

S. No	Treatment	At Mukkamala	
		D.I (BT)	D.I (50DAT)
1	<i>Trichoderma harzianum</i> cake application	6.20	0.00
2	<i>T. reesei</i> paste application (As swabbing)	6.59	5.35
3	Bordeaux paste application	6.90	4.68
4	Control	8.35	25.61
	SEM	1.12	5.37
	CD (P≤0.05)	3.33	15.45

DAT – Days after treatment

BT- Before treatment

DI- Disease index

Expt. 2: Management of stem bleeding disease in coconut through fungicides

Under *in vitro* screening of latest systemic fungicides viz., Thifluzamide 24 SC, Mancozeb 50% + Carbendazim 25% WS, Zineb 68% + Hexaconazole 4% WP, Myclobutanil 10% WP, Dodine 65% WP, Pyraclostrobin + Fluxapyroxad 250 SC, Kresoxymethyl 44.3% SC, Isoprothiolone 40% EC against *Theilviopsis paradoxa* at different concentrations (100 ppm, 250ppm, 500ppm and recommended concentrations), among all the treatments, Mancozeb 50% + Carbendazim 25% WS showed 100 percent inhibition, Thifluzamide 24 SC and Kresoxymethyl 44.3% SC showed no percentage of inhibition at their recommended concentrations and remaining chemicals were on par with each other with respect to percentage of inhibition at recommended concentration.

An experiment on field evaluation of Mancozeb 50% + Carbendazim 25% WS fungicide at different dosages were initiated against stem bleeding disease of coconut at farmer's coconut garden at Avidi village of East Godavari district during the month of December 2019. Pre and post treatmental data was recorded on disease index of stem bleeding disease of coconut. Among all the treatments tested, the reduction in disease index was observed in all the treatments compared to control.

Table: 53 Evaluations of identified systemic fungicides from *in vitro* studies against stem bleeding disease under field conditions

Trt. No.	Treatment details	Disease index	
		Pre treatmental data	3 MAT
T ₁	Root feeding of Mancozeb 50% + Carbendazim 25% WS @ 2g + 100 ml water at three months interval	35.32 (32.98)	33.21 (35.19)



T ₂	Root feeding of Mancozeb 50% + Carbendazim 25% WS @ 4g + 100 ml water at three months interval	12.13 (20.35)	10.20 (18.63)
T ₃	Root feeding of Mancozeb 50% + Carbendazim 25% WS @6g + 100 ml water at three months interval	19.33 (23.31)	15.41 (23.11)
T ₄	Root feeding of Mancozeb 50% + Carbendazim 25% WS @8g + 100 ml water at three months interval	22.21 (23.97)	17.81 (24.96)
T ₅	Root feeding of Hexaconazole @3 ml + 100 ml water at three months interval	22.68 (23.72)	19.21 (25.99)
T ₆	Control	36.47 (38.35)	38.42 (38.30)
	CD (P≤0.05)	10.10	8.46
	SEm±	3.42	24.96

Path. 5: leaf blight disease of coconut

Expt.9 : Demonstration of integrated disease management on leaf blight

Demonstration of integrated disease management on leaf blight, one acre coconut garden with leaf blight disease was selected in Narsipatnam village of Visakhapatnam district along with the control plot. The following treatments were imposed at appropriate times.

- Removal and destruction of severely affected fronds (once in 3 months)
- Spraying copper oxychloride 0.3% two times at 45 days intervals during summer months
- Root feeding of carbendazim @2 g + 100 ml water at three months interval
- Basal application of *Pseudomonas fluorescens* @ 200g along with 50 kg FYM per year

The average intensity of leaf blight disease was reduced from Pre treatmental (initial) and post treatment observations of leaf blight intensity were recorded in demonstrated treatments and in control treatments *i.e.* 12.24 (initial year) to 3.35 per cent. However, in case of control plot, disease intensity was slightly increased from 11.58 (initial) to 13.20.

Non-Plan

1. Survey and surveillance of diseases of cocoa and their management

Surveys conducted during the year 2018-19, indicated that pod rots, stem canker and leaf spots are the major diseases on cocoa. Among the pod rots, rots caused by *Phytophthora palmivora* and *Botryodiplodia* were predominant. Further, a leaf spot caused by *Pestalotiopsis* sp. was also observed on cocoa during the surveys in East and West Godavari districts of Andhra Pradesh.

Table 54: Percent Incidence of diseases of cocoa:

S. No	Disease	Causal organism	Percent Incidence
1	Pod rot		
A	Fungal	<i>Phytophthora palmivora</i>	9.23
B	Fungal	<i>Botryodiplodia</i> sp.	7.35
2	Stem canker	<i>Phytophthora palmivora</i>	8.56



3	Leaf spot	<i>Pestalotiopsis</i>	Traces
---	-----------	-----------------------	--------

2. Management of *Phytophthora* pod rot and stem canker in cocoa

For the management of stem canker disease of cocoa, the following treatments were imposed on seven cocoa trees per treatment. Application of *Trichoderma virens* cakes, application of *Trichoderma viride* (50g) along with 2kg of neem cake, Copper oxychloride (3g/lit), application of *Pseudomonas fluorescens* (50g) along with 2kg of neem cake were tested against stem canker disease of cocoa. Treatments were given at three month interval except *Trichoderma virens* cake. Cakes were applied only once.

Result revealed that, among the treatments *Trichoderma virens* cake application was found effective followed by Copper oxychloride, *Trichoderma viride* along with neem cake application.

S. No	Treatment	Mean disease spread in cm				
		March 2018	June 2018	September 2018	December 2018	March 2019
1	<i>Trichoderma virens</i> cake application	13.2	12.4	8.5	3.5	2.1
2	<i>Trichoderma viride</i> and neem cake	12.8	12.0	11.5	9.6	7.2
3	Copper oxychloride (3g/lit)	12.5	9.8	8.3	7.4	5.5
4	<i>Pseudomonas fluorescens</i> and neem cake	13.8	12.3	11.2	9.8	8.1
5	Control	10.5	11.3	12.5	13.8	14.2
SEM		1.59	1.60	1.24	0.91	1.01
CD (P≤0.05)		4.72	4.76	3.70	2.69	3.00

SPICES

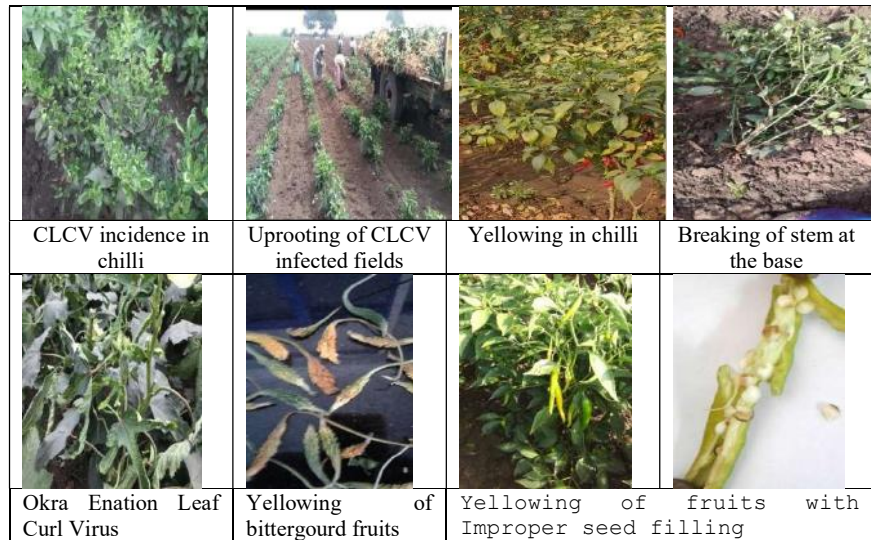
HORTICULTURAL RESEARCH STATION, LAM

DISEASE MANAGEMENT

1. Monitoring emerging diseases of vegetable crops

- During 2018-19, leaf curl virus (Gemini virus) in chilli occurred in an epidemic form in some areas and caused yield loss to an extent of 60-100%.
- In Anantapur district Fusarium wilt was recorded to an extent of 30-40% in chilli.
- Incidence of powdery mildew (15-20%) was also recorded in some pockets of the chilli growing areas which was not a problem earlier in coastal belt of Andhra Pradesh.

- A new problem characterized by breaking of stem at the base of the plant at ground level at flowering and fruit development stage (4-5%) in chilli was recorded along with the existing new problem ie yellowing of plants.(15-20%)
- Yellowing, ripening and drying of immature fruits was recorded to an extent of 10-15% in chilli and bitter gourd.
- In bhendi, 30-35% of okra enation leaf curl virus was recorded.
- In musk melon, ridge gourd and bitter gourd 60-70% of downy mildew, in coccinia and bitter gourd 5-10% of gummy stem blight were recorded.



2. Assessment in yield losses due to major diseases in important vegetable cops

An experiment was conducted to assess yield loss due to leaf curl virus in chilli with Sindhur (CA 960) and tomato with local variety. The results indicated that the plant growth and yield was influenced by leaf curl virus in both the crops. The yield attributing characters viz, number of fruits per plant, fruit weight, fruit length, fruit width was increased with delay in infection. The number of unmarketable fruits was decreased with delay in infection. The yield loss ranged from 53.21 to 100% in chilli and 47.74 to 100% in tomato and the extent of damage was reduced with the delayed infection.

Table 55 Assessment of yield loss due to leaf curl in chilli

Yield attributes	Time of infection (days after transplanting)					Healthy plants
	20	30	40	50	60	
Plant height (Cm)	23.0	30.2	36.6	58.6	75.0	100.4
No.of fruits per plant	0.0	0.0	54	86.6	130	241
No.of unmarketable fruits	-	1.8	19	23	16	18
Fruit weight(g)	-	-	0.95	1.22	1.71	1.98
Fruit width (Cm)	-	1.68	4.7	4.72	5.64	5.82
Fruit length (Cm)	-	0.82	2.14	4.06	6.1	8.98
Yield per plant (kg)	-	-	0.052	0.106	0.223	0.280



Per cent yield loss	100	100	89.09	77.78	53.21	-
---------------------	-----	-----	-------	-------	-------	---

Table 56 Assessment of yield loss due to leaf curl in tomato

Yield attributes	Time of infection (days after transplanting)					Healthy plants
	20	30	40	50	60	
Plant height (Cm)	30.5	57.6	66.0	83.4	90.2	112.6
No.of fruits per plant	-	93	117	157	194	228
No.of unmarketable fruits	-	37	34	25	21	12
Fruit weight(g)	-	6.63	12.61	17.8	21.5	35.2
Fruit width (Cm)		5.3	7.43	9.33	10.75	21.26
Fruit length (Cm)		1.53	2.37	2.67	3.38	5.47
Yield per plant (kg)	-	0.62	1.48	2.80	4.17	7.98
Per cent yield loss	100	92.20	81.50	64.91	47.74	-

3. Disease reaction of chilli germplasm against different diseases

A total of 54 entries were screened against chilli leaf curl virus diseases. Among the entries screened against leaf curl virus, four entries were immune and remaining fifty entries were highly susceptible to CLCV under field conditions

Table 57 Entries showing reaction to chilli leaf curl virus disease

S.No	Grade	No of entries	Details of entries
1	0% (immune)	4	LCA657, LCA 680, LCA 684 and LCA 222
2	<5% (resistant)	--	--
3	6-10% (Moderately resistant)	--	--
4	11-25% (Susceptible)	--	--
5	>25% (highly susceptible)	50	GP105, GP106, GP233, GP234, GP299, GP300, GP71, GP113, GP114, GP89, GP90, GP247, GP248, GP245, GP217, GP218, GP235, GP236, GP209, GP210, GP119, GP200, GP257, GP258, GP249, GP250, GP261, GP251, GP262, GP252, GP133, GP134, GP93, GP94, GP109, GP110, GP267, GP268, GP271, GP272, GP225, GP226, GP266, GP274, GP281, GP282, GP279, CA 960

4. Integrated management of vector borne viruses in chilli

Spraying started after establishment of the seedlings and continued till fruit formation at weekly interval. The data on population of thrips and whiteflies, leaf curl incidence and dry chilli yield was recorded. The results revealed that all the treatments were significantly superior over control. Along with the integrated disease management components, treatments with sole application of Cyzpyr @ 1.8ml/L and the treatment with rotation of insecticides viz. acephate @



1.5g/L, fipronil @ 2ml/l, imidacloprid @ 2ml/15L and Cyzpyr @ 1.2ml/L were at par with each other and recorded lowest leaf curl disease incidence with highest dry chilli yield.

Table 58 Management of chilli leaf curl virus in chilli

Tr.No	Treatment	No.of thrips/leaf	No.of whiteflies / leaf	Leaf curl incidence (%)				Dry chilli yield (Kg/ha)
				Dec,2018	Jan, 2019	Feb, 2019	Mar,2019	
1.	T0 + Spray of Acephate @1.5g/L + Neem oil @ 2ml/L at 7 days interval till fruit formation	3.64 (2.03)	1.75 (2.00)	10.14 (18.53)	18.49 (25.48)	41.72 (39.63)	53.86 (47.24)	1148
2.	T0 + Spray of Fipronil @ 2.0ml/L + Neem oil @ 2ml/L at 7 days interval till fruit formation	2.56 (1.75)	2.05 (1.60)	10.00 (18.44)	18.84 (25.70)	42.28 (40.27)	58.27 (49.78)	1564
3.	T0 + spray of Imidacloprid @ 2 ml/15L + Neem oil @ 2.0ml/L at 7 days interval till fruit formation	3.59 (2.02)	2.18 (1.64)	7.40 (15.79)	15.29 (23.03)	34.57 (35.69)	46.25 (42.88)	1414
4.	T0 + spray of Cyzpyr @ 1.8ml/L at 7 days interval till fruit formation	2.23 (1.65)	1.83 (1.53)	3.91 (11.39)	12.95 (21.13)	23.63 (29.92)	34.51 (35.97)	1998
5.	T0 + spray of Rotation of T1 + T2 + T3 +T4	2.10 (1.61)	2.21 (1.65)	3.44 (10.63)	11.54 (19.82)	22.48 (28.22)	32.64 (34.82)	2081



	sequential application at 7 days interval till fruit formation							
6.	Control	7.25 (2.78)	3.88 (2.09)	21.03 (27.28)	33.64 (35.43)	57.26 (49.19)	86.25 (68.28)	310
	CD(P=0.05)	0.18	0.36	1.02	3.95	4.49	3.41	259
	CV%	9.5	12.6	11.2	13.5	11.2	11.3	14.5

5. IDM package for cucurbit diseases (Ridge gourd)

The experiment was conducted with an objective of controlling major diseases like downy mildew and cucumber mosaic virus in ridge gourd by adopting integrated management practices. Incidence of cucumber mosaic virus and downy mildew was recorded and the results showed that all the treatments were significantly superior to control. Among the treatments, the treatment with seed treatment and soil drenching with seed pro and alternate spraying of (imidacloprid 17.8SL @7.5ml/ 15L + Neem oil 0.2%), tebuconazole 50% + Trifloxystrobin 25% @1g/L, Fosetyl Al @ 0.1% at 10 days interval recorded less CMV incidence with highest yield. The treatment with seed treatment with Carbendazim 12% + mancozeb 63%, soil drenching with 0.1% Captan 70% + Hexaconazole 5% WP and alternate spraying of tebuconazole 50% + Trifloxystrobin 25% @1g/L, (imidacloprid 17.8SL @7.5ml/ 15L + Neem oil 0.2%), Fosetyl Al @ 0.1% at 10 days interval recorded lowest downy mildew incidence.

Table 59 Effect of IDM package on CMV and downy mildew incidence in ridge gourd

Tr.No	Cucumber mosaic virus incidence (PDI)	Downy mildew incidence (PDI)	Yield (Q/ac)
1.	28.68(32.28)	33.48(35.32)	45.30
2.	29.47(32.86)	38.68(38.43)	48.13
3.	24.18(29.45)	25.73(30.46)	51.25
4.	15.50(23.19)	19.73(26.37)	56.35
5.	17.59(24.74)	18.31(28.61)	54.99
6.	27.62(31.68)	28.60(32.31)	49.07
7	59.44(50.46)	47.32(43.47)	30.88
CD(P=0.05)	4.58	5.83	9.4
CV%	8.0	9.8	10.8

6. Identification of causal agent involved in stem splitting and gummy stem blight in cucurbit crops

Fusarium sp was isolated from the bottle gourd affected with gummy stem blight from stem region. The culture was contaminated and needs to be re isolated from the disease sample.



PLANT PHYSIOLOGY, SOIL SCIENCE, AGRONOMY

AGRONOMY

CITRUS RESEARCH STATION, PETLUR

1. Effect of different mulches on growth and yield of acid lime cv. PetluruPulusunimma.

Acid lime tree basins covered with 100 microns transparent polythene mulch recorded maximum number of fruits (2251) and yield per tree (93.81kg) and benefit cost ratio (4.29:1) in PetlurPullusuNimma cultivar.

2. Weed management in acid lime

From the pooled data, the maximum number of fruits per plant, yield per plant and benefit cost ratio was recorded in the treatment with Pre emergence application of Oxyflourfen @ 300g a.i/ha +directed spraying of glyphosate @2.25kg a.i/ha at 30 and 60 days after last ploughing. The least weed density and weed dry weight were also recorded in the same treatment in acid lime cv. Petlurpulusunimma.

3. Performance of Acid Lime under different fertigation Schedule in cv. PetlurPullusu

NIMMA

There was no significant difference among the fertigation treatments in acid lime cv. PetlurPullusuNimma, however maximum number of fruits per tree and yield per tree was recorded in F4 (100% RDN + K applied through drip in the form of Urea and MOP with foliar nutrition of micronutrients).

V.EXTENSION

A. EXTENSION PROGRAMMES ORGANIZED AT UNIVERSITY LEVEL

Research and Extension Council meeting at V.R.Gudem.

Research and Extension Council meeting was held on 05.03.18 at V.R.Gudem. As a part of this, Dr. J. Dilipbabu, Director of Research and Dr. R.V.S.K. Reddy, Director of Extension presented research findings and extension activities carried out for 2017-18 respectively. For this program, University officers, Board members of Dr.YSRHU, Zonal heads, Scientists, DDH's of Horticulture and Farmers have attended.

B. DIAGNOSTIC VISITS

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUEM

Dr.V.Deepthi,Scientist (Agril extension) and Sri G.Shaliraju (Agril Entomology) went to koyyalagudem on 10.04.2018,visited the maize field and banana plantations where 170 ha.cropped area was damaged due to heavy rains and wind.Suggested amelioration measures.



Dr. T. Vijaya Nirmala, Scientist (Veterinary Science), KVK,Venkataramannagudem observed right leg lameness due to open wound at femoral region in Cock reared by Venkataramannagudem farmer on 23.04.2018 and suggested dressing of wound with povidone iodine lotion and treatment with antibiotic powder and Ambiplex liquid orally for 5-7 days.



On 14.04.2018 G.Shali Raju Scientist (Entomology) KVK, Venkataramannagudem Conducted follow up visit to Cluster front line demonstrations on Groundnut var. Dharani at P. Ankampalem village, Jeelugumilli mandal and recorded 18 – 22 pods per plant and suggested to harvest the crop after 7-10 days.

Dr.K.Venkatasubbaiah, Scientist (Horti) conducted demonstration on ripening of mango by using low cost ripening chamber at Vankavarigudem village, Jeelugumilli mandal on 14.04.2018.



On 27.05.2018, Dr.T.Vijaya Nirmala, Scientist (Veterinary Science) observed adult Pomeranian dog which is suffering from dry cough and inappetance and treated with inj. Avil, I/M, inj. Melonex, I/M and oral administration of Corex syrup for 3 days.

Dr. V. Deepthi, Scientist (Agricultural extension), KVK, Venkataramannagudem went to Nachugunta and Venkataramannagudem villages and collected soil samples in paddy fields on 26.05.2018.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science), KVK, Venkataramannagudem has visited the shrimp farm located at Pedakodruprolu on 27.05.2018 and found the dissolved oxygen (DO) problem. Suggested to go for partial harvest and application of probiotics through feed and increase the usage of aerators during daytime also, to reduce the DO problem.

Dr. A. Devivaraprasad Reddy, Scientist (Fishery Sci.),KVK, Venkataramannagudem has visited the fish farm at Kommugudem on 29.05.2018 and analysed the dead common carp & water quality parameters of pond and based on that suggested to apply lime @ 100 kgs; Salt @ 50 kgs; Oxygen tablets @ 5 nos.



Dr.V.Deepthi,Scientist (Agril Ext),KVK, Venkataramannagudem conducted follow up visit to the CFLD redgram fields of Yerrampeta village Koyyalagudem mandal on 26.06.18.

On 28.08.2018, Dr. T.Vijaya Nirmala, Scientist (Veterinary Science) and Dr. A.Devivaraprasad Reddy, Scientist (Fishery Science) were created awareness on ‘Vermi-composting’ to the Sri. B. Rajesh, progressive farmer, Venkataramannagudem about the management of cattle dung as vermicompost, motivated towards establishment of vermi compost unit.



On 01.09.2018, Dr. T.Vijaya Nirmala, Scientist (Veterinary Science) and Dr.V.Deepthi, Scientist (Agriculture Extension) has visited buffalo farm at Settipalli village, Velivenu Mandal and explained to the farmer about the importance of concentrate feed in increasing milk production and demonstrated about balanced feed preparation to dairy cattle and also visited field of Super napier fodder under OFT.



On 04.09.2018, Dr. T.Vijaya Nirmala, Scientist (Veterinary Science) and Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) has



visited 'Quail farm and hatchery unit' at Dippakayalapadu village, Buttaihgudem mandal and suggested brooding management of quail chicks.

Dr. T.Vijaya Nirmala, Scientist (Veterinary Science) and Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) visited poultry hatchery unit at Muddappagudem village, Buttaihgudem mandal on 05.09.2018 and explained about disinfection of incubator machine before setting of poultry eggs in the setter for incubation.



On 01.09.2018, Dr.V.Deepthi, Scientist (Agriculture Extension) and Dr.T.Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem has conducted diagnostic field visit in red gram and vine vegetable crops at settipalli village of velivennumandal and observed spotted pod borer in redgram and fruit fly infestation on vine vegetables for this recommended to spray chlorophyriphos @ 2.5 ml/l. and suggested to install fruit fly pheromone traps @ 2 per acre for regular monitoring of fruit fly.

On 01.09.2018, Dr.V.Deepthi, Scientist (Agriculture Extension) and Dr.T.Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem has visited paddy variety DRR-Dhan -45 field which was 70 days old and crop is good vegetative stage at settipalli village of velivennumandal. Rat burrows are observed in the field for this suggested to Prepare bait material with local food material preferred by the rats: Food material 97g, any edible oil 1g, zinc phosphide 2g and place the poisonous bait material in each burrow.

Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science), and Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) has visited fish farm of M/s. Andhra Sugars Pvt. Ltd, Jangareddygudem on 04.09.2018 and suggested to harvest the aged fishes from the pond. Since the age of the fishes are more than 7 years and hence the mortality occurs.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) stocked one lakh number of fish fingerlings provided by the Department of Fisheries, Govt. of AP in the seasonal waterbodies/farm ponds on 06.09.2018 in the West Rekulagunta, Reddyganapavaram, Acchiayapalem Kolaigudem, Ravvarigudem, K Nagampalem, Jellaigudem, Pandugudem, Bandarlagudem, Kamaihkunta and East Rekulagunta of Buttaigudem and Polavaram Mandals of West Godavari District.



Dr. V. Deepthi, Scientist (Agricultural extension), KVK, Venkataramannagudem went to Nachugunta and Venkataramannagudem villages and collected soil samples in paddy fields on 26.05.2018.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science), KVK, Venkataramannagudem has visited the shrimp farm located at Pedakodruprolu on 27.05.2018 and found the dissolved oxygen (DO) problem. Suggested to go for partial harvest and application of probiotics through feed and increase the usage of aerators during daytime also, to reduce the DO

problem.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science), KVK, VRGudem, has participated in the 'fish seed rearing training program' done by the Department of Fisheries, Govt. of AP. in the Pokonda Reservoir of West Godavari District on 06.09.2018.

Dr.V.Deepthi, scientist (Agril Ext) and Sri G Shali Raju, Scientist (Ento) conducted diagnostic visit in the CFLD redgram fields at yerrampeta village of koyyalagudemmandaland observed *Marucatestulalis* (Spotted pod borer) recommended the farmers to spray chlorophyriphos @ 2.5 ml/l.as foliar spray and installed yellow, blue sticky traps @20 per acre and pheromone traps 4@ per acre.



A follow up visit to poultry hatchery unit at Muddappagudem village, Buttaihgudem mandal was made on 17.09.2018 by Dr. T.Vijaya Nirmala, Scientist (Veterinary Science) and Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) and examined the relative humidity and temperatures in the unit for setting Aseel eggs for hatching.

KVK,Venkataramannagudem scientists have conducted baseline survey in DFI villages namely Pandugudem, Bandarlagudem and Kamaiahkunta villages and collected data regarding the socio-economic status and land use pattern of individual farmer as per the proforma given by the ICAR-ATARI to plan interventions for Doubling Farmers Income (DFI) on 27.09.2018.



On 11.10.2018 Dr.K.Venkata Subbaiah, Scientist (Horticulture) conducted demonstration on spraying of KNO_3 (13-0-45) @ 1% on



acidlime plants var. Balaji as a KVK technical programme at Jajulakunta, Ghantavarigudem and Marampalli villages.

On 6.10.2018 Dr.V.Deepthi Scientist (Agril Extension) and G.Shali Raju Scientist (Entomology), KVK, Venkataramannagudem conducted diagnostic visit to Greengram fields at Gurugumilli village, Buttaigudem Mandal and observed spodoptera damage and suggested to Spray Neem oil @ 5ml/lit or Chloropyrifos @ 2 ml/lit.



On 6.10.2018 G.Shali Raju Scientist (Entomology) and Dr.V.Deepthi Scientist (Agril Extension) and KVK, Venkataramannagudem initiated Front Line Demonstration on Management of RSW (Rugose spiraling whitefly), *Aleurodicus rugioperculatus* in yerrannagudemvillage, D.Tirumala Mandal and demonstrated the Installation of yellow sticky traps and suggested to spray Azadirachtin 10,000 ppm @ 1 ml/lit or Neem oil 0.5% + detergent powder @ 10 g/lit alternating it with water spray at 15 days interval.

On 1.11.2018 Sri.G.Shali Raju, Scientist (Entomology), KVK, Venkataramannagudem initiated OFT on Management of Fall Army Worm *Spodoptera frugiperda* on Maize at Telikicherla village. Three treatment plots i.e. IPM, BIPM and control plots were sown with maize seed along with fodder sorghum as border crop and desmodium as intercrop in IPM and BIPM plots.

On 02.11.2018 Dr.E.Karunasree, Principal Scientist & Head, Sri. G.Shali Raju, Scientist (Entomology), visited Apiary Unit (*Apis cerana*) at Kamaiahkunta village maintained by K. Posirao and suggested to go for division of bee colonies for multiplication of bees. Provided *Apis cerana* bee hive boxes to the beekeeper under Tribal Sub – plan programme.



On 02.11.2018 Dr.E.Karunasree, Principal Scientist & Head, Sri. G.Shali Raju, Scientist (Entomology), Dr.K.Venkata Subbaiah, Scientist (Horticulture) visited ICM demonstration plots of cashew orchard and conducted method demonstration on Application of Bio – fertilisers and Swabbing of cashew trunk with Neem soap @ 5 g/lit after mechanical removal of CSRB larvae against Cashew Stem & Root Borer at Lankapalli Village as a part of FLD on Management of Cashew orchards with ICM Practices in Neglected Cashew orchards.

On 05.11.2018, T. Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem attended a medical case milking buffalo in Vellimillivillagesuffering from fever (103° F), decreased feed intake, watery diarrhoea, decreased milk production and treated with inj. Dicrysticine, I/M, inj.Melonex, I/M, Metranidazole tablets and Neblon powder orally for three days.

Dr. V. Deepthi, Scientist (Agricultural Extension) conducted field day in paddy variety DRR Dhan-45 at Settipeta village on



05.11.18. As part of field day Crop Cutting Experiment was conducted in paddy var. DRR Dhan-45 and recorded 30 bags/ acre yield.



Dr. V. Deepthi, Scientist (Agricultural Extension) and Sri. B. Rupa Devi (Soil Science & Agricultural Chemistry) visited blackgram var TBG-104 fields at cluster frontline demonstration on pulses in dibbagudem village on 15.11.18 and observed incidence of spodoptera and sucking pests and suggested spraying of neem oil @ 5ml/lit, Acephate @ 1.5gm/lit and installation of yellow and blue

sticky traps @ 20/acre.

On 06.12.2018 Sri. G.Shali Raju, Scientist (Ento), KVK, Venkataramannagudem conducted diagnostic visit to coconut field in Nallajerla and observed, infestation of Rugose Spiralling whitefly, rhinoceros beetle and boron deficiency and suggested suitable remedial measures.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) and Dr. T. Vijaya Nirmala, Scientist (Vet. Sci.) has visited the fish farm of Mr. Sita Rami Reddy, Bangarugudem and found the red disease in the carps on 09.01.2019 and recommended application of either 5% Bromine /acre or 400 grams of Potassium permanganate/acre along with either oxy-tetracycline or doxycycline @ 70-80 g per 100 kg of feed.

On 09.01.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and Dr. A.Devivaraprasad Reddy, Scientist (Fishery Science) visited poultry flock of Sri Hemasundar Reddy at Bangarugudem village, Tadepalligudem mandal and observed three weeks old desi chicks showing symptoms of reduced feed intake, depression, increase in mortality, mucoid diarrhoea, ruffled feathers and suggested IBD vaccination at 14 days of age and supportive treatment with 20g of Lixen powder in 100 ml of water for 1500 chicks and 5 ml ambiplex liquid orally for 5 days.

Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and Dr. A.Devivaraprasad Reddy, Scientist (Fishery Science) visited dairy farm of Sri Seetharamireddy, Bangarugudem on 09.01.2019 and observed reduced growth rate, reduced feed intake, soil licking, diarrhoea in buffalo calf and suggested treatment with piperzine @ 5ml/10 Kg.body weight and mineral mixture @30 g orally.



Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and Dr. A.Devivaraprasad Reddy, Scientist (Fishery Science) visited poultry flock of Sri Ramakrishna, Bangarugudem and observed whitish diarrhoea, ruffled feathers, reduced feed intake and suggested treatment with Enrocine liquid@20 ml in 10 liters of water and Famitone liquid@ 5 ml in 10 liters of water orally for 5



days.

Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) and Dr. T. Vijaya Nirmala, Scientist (Vet. Sci.) has visited the fish farm of Mr. Madakam Veeraswamy, Yarraigudem and explained about the importance of feed for the growth of fish and also calculation of feed based on the size of fish.



On 11.01.2019 KVK, Venkataramannagudem initiated FLD on Effect of Urea Molasses Mineral Blocks (UMMB) on production performance of dairy animals in tribal areas under ICAR-TSP at Yarraigudem and Pandugudem villages of Buttaihgudemmandal. In this program, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) explained the importance of Urea Molasses Mineral Blocks (UMMB) as feed to dairy animals in case of green fodder scarcity and also to improve production performance of dairy animals and distributed UMMBs to farmers.

On 23.01.2019 Dr. T. Vijaya Nirmala, Scientist (Veterinary Science), Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) and Sri G. Shali Raju, Scientist (Entomology) visited dairy farm at kurusakannappagudem village, observed tick infestation in four months old buffalo calf and suggested treatment with inj. Ivermectin @ 10mg/50 Kg. b.wt, S/c and external application of butox solution @ 2ml/1 litre of water. On the same day made follow-up visit to aseel birds enterprise at East regulakunta and observed the health condition of birds.



On 24.01.2019 Dr. J. V. Prasad, Principal Scientist, ICAR-ATARI, Zone – X, Hyderabad and Dr. M. Nagesh, Principal Scientist, NBAIR, Bangalore reviewed the OFT trail on Management of Fall Army Worm (FAW) in maize conducted by KVK, Venkataramannagudem at KVK & Kurusakannappagudem village and observed the performance of various treatments imposed against FAW and also reviewed FLD on Farmer field schools (FFS) in production of pesticide residue free vegetables (Brinjal & okra) at Busarajupalli village and various TSP – Activities conducted by KVK, V.R. Gudem during the year 2018 – 19.

On 25.01.2019 G. Shali Raju, Scientist (Entomology) and B. Rupadevi, Research Associate (Soil Science), KVK, Venkataramannagudem conducted diagnostic visit to coconut orchard at Pulla village, Nallajerla Mandal infested with Spiralling whitefly, rhinoceros beetle and boron deficiency and suggested suitable remedial measures.



On 28.01.2019, Sri. Rupa Devi, Research Associate (SS&AC), KVK, Venkataramannagudem conducted training programme on 'Integrated crop management practices for blackgram var.



TBG-104' to Takkelapudi farmers, Dwarakaturumalamandal under cluster front Line demonstrations pulses and distributed critical inputs neem soap and Pursuit chemical.

On 28.01.2019, Dr.T.Vijaya Nirmala, Scientist(Veterinary Science), KVK, VR gudem visited dairy flock at Venkataramannagudem village and observed diarrhoea, inappetance, soil licking symptoms in one month old buffalo calf and suggested treatment with Pul.Neblon @25 g/day, Tab. Dirolin-L@ 2 boli/day and Piperzine hydrate liquid@20 ml orally.



On 31-01-2019, Dr. K. Venkata Subbaiah, Scientist (Horticulture) and Sri. G. Shali raju, Scientist (Entomology) went to tribal villages for monitoring ongoing technical programs in Kollaigudem (Ivy gourd), Busarajupalli (brinjal, chilli), Kamsalakunta (Bush bean) and supplied need based critical inputs to the tribal farmers.

On 31.01.2019 G.Shali Raju, Scientist (Entomology), &Dr.K.Venkata Subbaiah, Scientist (Horticulture), KVK, Venkataramannagudem conducted diagnostic visit in Groundnut fields at Nimmalagudem village under CFLDs on Oilseeds and observed infestation of Leaf miner, Spodptera&



tikka leaf spot and suggested to install pheromone traps @ 4/acre, foliar application of flubendamide @ 0.2 ml/L against spodoptera and leaf miner, spraying of Mancozeb @ g and Carbendazim @ 1 g/L or Hexaconazole @ 2 ml/L or tebuconazole @ 1 ml/L against tikka leaf spot.



2



On 31.01.2019 Sri. G.Shali Raju, Scientist (Entomology), &Dr.K.Venkata Subbaiah, Scientist (Horticulture), KVK, Venkataramannagudem visited OFT trail on Integrated Crop Management in Chilli (varieties – LCA - 616 & CA – 960). LCA – 616 varieties was highly accepted by the farmers in terms of colour, size & pungency and also preferred by the consumers in retail market.

On 01.02.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) visited Karthikeya poultry farm at Tadepalligudem and observed fifteen days old Kadaknath chicks showing symptoms of chicks huddling near heat source, whitish diarrhoea around vent, increase in mortality and suggested treatment with Furatec 200 @ 2 kg/T of feed and 5 ml Ambiplexliquid for 100 birds orally for 7 days.



On 02.02.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) visited Kadaknath poultry farm of Sri Venkata Appa Reddy, Chinthalapudi village and



explained about importance of vaccination in disease prevention of backyard poultry.

Dr. K. Venkata Subbaiah, Scientist (Horticulture) went to tribal villages for monitoring ongoing horticultural technical programs in the tribal villages i.e., Gubbisavarivagudem (Brinjal), Pandirimamidigudem (Bush bean, Bitter gourd, Brinjal), Jeelugumelli (Tomato) and Vankavarigudem (Banana) and also supplied need-based crop inputs to the farmers on 7-02-2019.



On 11.02.2019 Dr. V. Deepthi, Scientist (Agril.Extn.) and Sri. Rupa Devi, Research Associate (SS&AC), KVK, Venkataramannagudem organized a diagnostic visit in black-gram variety TBG-104 cultivated under CFLD-Pulses at Takkalapadu village of Dwarakathirumala mandal. In this programme distributed Critical inputs like pongamia soap, pursuit, acephate, funnel pheromone traps, yellow and blue sticky traps.

On 16-3-2019, Dr. K. Venkata Subbaiah visited commercial vegetable nursery of farmer G. Gangaraju in Gauravaram village started as a small scale enterprise with the technical support of KVK, Venkataramannagudem Dr. Y.S.R. Horticultural University. He is producing more than 3 lakhs seedlings per year based on season and the demand.



On 16.03.2019, Dr. Sreenivasulu, Director of Extension and Director of Research (i/c), Sri Venkateswara Veterinary University, Tirupati visited Livestock instructional farm, KVK, Venkataramannagudem and interacted with Scientist (Veterinary Science) and Scientist (Fishery Science) about the activities of Animal Husbandry and Fisheries at Demonstration units and also at farmer fields.

Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) has taken the monthly sampling of Jayanthi Rohu and Amur Common Carp fish breeds at Mr. Kottam Mohan Rao farm under NFDB Sponsored project on Growth and Performance of Jayanthi Rohu and Amur Common Carp at Pandugudem Village on 19.03.2019.



On 29.03.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem visited Karthikeya poultry farm, Tadepalligudem and observed swelling of eyes, discharges from eyes, lumps of pus in sinuses in three months old kadaknath chicks, tentatively diagnosed as Mycoplasmosis infection and suggested treatment with Tylosinetartarate @110 mg/Kg.b.wt and Famitone liquid @ 5 ml for



100 birds orally for 7 days.

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

On 27.03.17 Sri Bhanumurthy K.C, Scientist (Horticulture) from KrishiVigyan Kendra, Pandirimamidi visited Banana var. Karpurachakkerakeli field of MadduriHaribabugaru, kimmuru village of Addateegala mandal. Crop is infected with Bacterial rhizome rot, suggested the farmer to remove and destroy the severely infected plants and go for application of bleaching powder @ 25g/l or Pseudomonas @ 50 g/l.

On 26.04.18, Dr. A. Srinivas, Senior Scientist & Head, Sri Bhanumurthy K.C, Scientist (Horticulture) and Sri N. Srividya Rani Scientist (Extension) of KVK, pandirimamidi had visited Mango orchard of Progressive farmer Sri. GorripalliApplaswamygaru at Korukonda (M), East Godavari Dist., observed black tip disorder in mango as brick kilns are just beside to orchard. As gases like Sulphur dioxide, Carbon Monoxide, flourides emitted from brick kilns makes fruit black & hard from the tip and suggested the farmer to spray borax (1%) or caustic soda and washing soda positively at pea stage followed by two more sprays at 15 days interval to minimize the disorder.



On 14.06.2018, Dr. S Adarsha, Scientist (Entomology) and P. Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi has visited fruit orchard in which mango, citrus, guava, sapota and intercropping of pine apple being under organic cultivation, observed thrips damage in pumello, fruit cracking in citrus and mango due to boron deficiency. Application of bio-pesticides and bio-fertilizers

such as VAM etc. along with organic manures/compost were recommended to the farmer for correction of micro nutrient deficiencies. Also visited gliricidia nursery for green manuring purpose and suggested him to propagate it by stem cuttings after its establishment.

On 06.07.2018 Dr. S. Adarsha, Scientist (Entomology) diagonised cashew stem and root borer infested trees at cashew orchards of yetipalli village. Observed 40 percent infested trees and demonstrated cashew stem and root borer management. Suggested for removal of infested bark portion and destroy larvae and pupae from the infested part of tree. Spray chlorpyrifos @ 10ml/l water up to 1m height from base of tree and over exposed trunk portion.



On 07.08.18, Sri Bhanumurthy K.C, Scientist (Horticulture) visited Brinjal field (Var. Local green) at Irlapalli village of



Rampachodavarammandal. The crop is at vegetative stage, observed Shoot & fruit borer infestation and suggested the farmer, clipping and destruction of infested branches by shoot and fruit borer one inch below from the infested part.

On 10.08.2018, Dr.S.Adarsha, Scientist (Entomology), from Krishi Vigyan Kendra, Pandirimamidi made a diagnostic visit on identification of *Spodoptera* spp in maize fields and observed infestation of *Spodoptera* spp on Maize crop at vegetative stage in Mixed cropping plots at Pamugandi village, Devipatnammandal of East Godavari District. Around 20 larvae per 3 cents were observed in the maize field. Preliminarily identified as *Spodoptera frugiperda* by Dr.Kalleshwara Swamy, UAHS, Shivamogga. Samples were also sent to IIHR, Bangalore for further confirmation of species.



On 21.08.18, Sri Bhanumurthy K.C, Scientist (Horticulture), KVK, Pandirimamidivisited Bhendi field (Var. A. Anamika) at Irlapalli and Peddhageddadavillages of Rampachodavarammandal. The crop is at vegetative stage, observed yellow vein mosaic virus and suggested the farmers to remove and destroy the infected plants, follow IPM

Practices and if infestation persists go for sprayings with Dimethoate @ 2 ml/l or Acephate @ 1.5 g/l to control white fly which transmits the virus.

23.08.2018 Dr. S. Adarsha, Scientist (Entomology), Sri Vidya Rani.N Scientist (Extension) and Sri P.Rajasekhar Scientist (SS&AC) diagnosed Fruit and Shoot borer & Epilachna beetle infestation in brinjal and thrips infestation, fusarium wilt symptoms in chillies. Suggested for spraying of prophenophos @ 2ml/l for control of Epilachna beetle and Fruit and shoot borer in brinjal, drenching with COC @ 3g/lit, application of *Trichoderma viride* along with FYM in last ploughing and use of IPM practices for control of sucking pests in Chilli



On 04.09.18, Sri Bhanumurthy K.C, Scientist (Horticulture) of KVK. Pandirimamidi visited cashew orchard at D.N.Palem village of Rampachodavarammandal. The orchards are at new flush initiation stage, observed Tea mosquito bug infestation and suggested the farmers to go for schedule sprays of Monocrotophos @ 1.6 ml/l (New flush initiation stage), Chlorpyrifos @ 2.5ml/l (Flowering stage) and Profenophos @ 1ml/l (Fruiting stage) to manage the infestation.

On 05.09.18, Dr.R.V.S.K. Reddy. D.E, Dr.YSRHU, Dr.A.Srinivas, Principal Scientist & Head, Sri Bhanumurthy K.C, Scientist (Horticulture) and Sri. P.Rajasekhar, Scientist (SS&AC) of KVK. Pandirimamidi visited Ridge gourd and Bottle gourd fields at Irlapalli village of Rampachodavaram mandal. The crop is at flowering and fruiting stage, observed micronutrient deficiencies and suggested the



farmers to go for application of micronutrients @ 5 g/l to get the quality fruits.



On 15.09.2018 Miss. Sri Vidya Rani N, Scientist (Extension) and P. Raja Sekhar Scientist (SS&AC), KVK, Pandirimamidi has visited brinjal crop intercropped in mango orchard at Vedurupaka village of Gokavarammandal. During the visit, Scientists observed fruit & shoot borer infestation and suggested to clipping of infested leaf tips and spraying of profenophos @ 1 ml/litre of water and also explained the use of yellow sticky traps in vegetable crops followed by its installation procedure for the control of sucking pest.

On 15.09.2018 Miss. Sri Vidya Rani N, Scientist (Extension) and P. Raja Sekhar Scientist (SS&AC), KVK, Pandirimamidi has visited nutritional kitchen gardens which seed kits were provided to households at Vedurupaka village of Gokavarammandal observed the back yard garden with different vegetables such as Brinjal, Bhendi, Chilli, Ridge gourd, Beans, Leafy vegetables, etc., and interacted with beneficiary farmers regarding no. of harvestings and yields of vegetables, returns on cost basis for their home consumption from kitchen garden.



On 26.09.2018 Dr. S. Adarsha, Scientist (Entomology) and Sri Vidya Rani N Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi diagnosed rice hispa infestation in paddy (var. NLR 3041) fields at 15DAT, damping off in tomato nursery and leaf eating caterpillar and YVMV in bhendi fields. Recommended for spraying of chlorpyrifos @ 2.5ml/l for control of rice hispa, soil drenching with copper oxy chloride @ 3g/l for control of damping off in tomato and IPM practices for YVMV management.

On 24.10.18, Sri Bhanumurthy K.C, Scientist (Horticulture) of KVK, Pandirimamidi visited Marigold field at Gangavaram village of Gangavaram mandal. The crop is at vegetative stage, infected with fusarium wilt and suggested the farmers to remove and destroy the severely infected plants and go for both foliar application and drenching with Saaf @ 2ml/l twice within an interval time of 10-15 days to control the disease.



On 08.11.2018 S. Adarsha Scientist (Entomology) and Srividya Rani N Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi diagnosed BPH infestation in rice fields at pandiriveedi village of Rampachodavaram mandal and recommended for use of pymetrozine 50 WG 0.8g/l twice at 15 days interval for reducing crop control.

On 27.11.18 Sri Bhanumurthy K.C, Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi along with Sri. Mallikarjuna Rao, PHO-ITDA, Chintur visited chilli fields in



villages of Yetapaka, Kunavaram & Chintur mandals. Crop is infected with viral disease (Gemini virus), also observed thrips & mites infestation, midge, wilt and suggested farmers to remove & destroy the virus infected plants immediately to reduce crop damage, proper measures to manage thrips, mites, midge and wilt.



P.Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi has visited Palmarosa variety Trishna field which was at flowering stage in I.Polavaram village of Rampachodavaram mandal on 03.12.2018. The crop was harvested at full bloom stage and being sent for extraction of essential oil in which he got 12 kg of palmarosa oil from fresh

herbage yield of 1.25 tonne per acre in the first cutting of crop under rainfed situation in the agency area. KVK Scientist suggested the farmer to go for fertilizer application after every cutting and foliar spray of micronutrients like ferrous sulphate and manganese sulphate to improve the plant growth, herbage and oil yield.

On 10.12.2018 P. Raja Sekhar Scientist (SS&AC) from KVK, Pandirimamidi has visited Sesame field at Boosigudem village of Rampachodavaram mandal. During the visit, Scientist observed initiation of powdery mildew disease and severe infestation of pod borer and recommended the farmer to spray wettable sulphur @ 3 g/litre and neem oil (10000 ppm) @ 5 ml/litre for the control of powdery mildew and pod borer respectively.



On 07.03.19, Sri Bhanumurthy K.C, Scientist (Horticulture) of KVK. Pandirimamidi visited cashew orchard at Gangavaram village of Gangavaram mandal. The orchards are at flowering and nut formation stage, observed Tea mosquito bug infestation and suggested the farmers to go for spray of and Profenophos @ 1ml/l and Carbendazim @ 1g/l to manage the infestation.

On 29.09.2018 Dr.S.Adarsha, Scientist (Entomology) and Miss N. Sri Vidya Rani, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamididiagnosed fruit fly infestation in ridge gourd and fruit borers damage in chilli fields. Recommended use of fruit fly traps @ 10 per acre and poison bait technique for control of fruit borers



On 05.10.2018 Dr.S.Adarsha Scientist (Entomology), Krishi Vigyan Kendra, Pandirimamidi observed 10 percent stem fly infestation in





Blackgram var. TBG-104 at KVK institutional farmdemonstration plot. Crop is at 30DAS.



On 09.10.2018 Dr. A.Srinivas Principal scientist & Head, S. Adarsha Scientist (Entomology) from Krishi vigyan Kendra, Pandirimamidi and Sri. Nagachari, DPD, ATMA, East Godavari district observed fruit fly damage in ridge gourd and aphid infestation in cow pea fields. Recommended for use of fruit fly traps @ 12 per acre for control of fruit fly and spraying of dimethoate @ 2ml/l for aphid control.

On 23.10.2018 Dr.S.Adarsha, Scientist (Ento.) and Miss Srividya Rani.N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi visited brinjal field and observed sporadic incidence of mealy bug infestation at fruiting stage. Suggested farmer to rogue out and destroy the infested plants and spray profenophos @ 2 ml/litre to reduce further spread. Visited new Oil palm orchard and suggested farmer to go for intercropping and get additional income for the first 3 years and go for recommended dose of fertilizer application.



KRISHI VIGYAN KENDRA, PERIYAVARAM

Activity	No. of programmes	No of farmers	Extension personnel	Total
Diagnostic visit	312	1236	21	1257



On 04.04.2018 Dr. L.Ranjith Kumar, Scientist (Entomology), KrishiVigyan Kendra, Periyavaram visited Okra field infested with Red spider mite at Maratapalli village of Venkatagirimandal suggested the farmer for spraying of Neem oil(10,000 ppm) @ 3m/lit of water followed by Propargite 57% EC @1ml/lit or Fenpyroxymate 5% EC @ 1ml/lit of water at 15 days interval.

On 06.04.2018 Dr. L.Ranjith Kumar, Scientist (Entomology), KrishiVigyan Kendra, Periyavaram visited Groundnut field infested with Leafminer, *Aproaeremamodicella* at Boppapuram village of Venkatagirimandal and suggested the farmer for installation of Delta sticky traps @ 4/acre and spraying of Flubendiamide 480 SC @ 0.2ml/lit of water twiceat 15 days interval.



On 19.04.2018, Dr.P.Manjari, Scientist, Veterinary Science, KrishiVigyan Kendra, Periyavaram visited Buffalo farmers of Boppapuram village of



Venkatagirimandal and observed severe heat stress in lactating Murrah buffaloes suggested to increase ventilation in shed, regular wetting of the buffaloes, feeding of green fodder and were given Area Specific Mineral Mixture to improve health condition and revive productivity.

On 28.04.2018 Mr. D.RameezBasha, Research Associate (Horticulture),KrishiVigyanKendraPeriyavaram has conducted field diagnostic visit of chilli crop at Boppapuramvillage,Venkatagirimandal, identified infested with die back and fruit rot disease and suggested the usage of propicanazole@ 1 ml / litre.



Ms.S.M.Sailaja, Research Associate (Horticulture) KrishiVigyan Kendra, Periyavaram, visited Colacasia fields as a part of OFT at Boppapuram village of Venkatagiri Mandal on 28.04.2018 and found the crop heavily infested with leaf eating caterpillar Spodoptera and suggested the usage of Prophenophos @ 2ml/lit as the crop was in the initial stages.



On 10.05.2018 Dr. L.Ranjith Kumar, Scientist (Entomology), KrishiVigyan Kendra, Periyavaram visited Acid lime orchard affected with dry root rot at Kuppayapalem village of Dakkilimandal suggested the farmer for drenching of Mancozeb (3g/lit) followed by application of *Trichodermaviride* mixture (1 kg of *T.viride* + 100 kg FYM + Neem cake 10 kg)+ Micronutrient spray.

On 03.07.2018 Dr. L.Ranjith Kumar, Scientist (Entomology), KrishiVigyan Kendra, Periyavaram visited Acid lime orchard affected with dry root rot at Pallipadu village of Balayapallimandal on 03.07.2018 and suggested the farmer for drenching of Mancozeb(3g/lit) followed by application of *Trichodermaviride* mixture(1 kg of *T.viride* + 100 kg FYM + Neem cake 10kg)+ Micronutrient spray.



On 19.07.18, Dr.P.Manjari, Scientist, Veterinary Science, KrishiVigyan Kendra, Periyavaram conducted diagnostic visit at Chapalapalle village of Dakkilimandal. A buffalo farmer reported diarrhea in two buffaloes and told that it has been more than 6 months since last deworming. The farmer was recommended Albendazole bolus @ 10 mg/kg body weight single dose.



On 21.07.2018 Dr. RVSK Reddy (Director of Extension), Dr. YSRHU, VRgudem and Dr. L.Ranjith Kumar, Scientist (Entomology), Krishi Vigyan Kendra, Periyavaram visited Periyavaram village and observed the local brinjal variety affected with Fruit and shoot borer (*Leucinodes orbonalis*) and suggested the farmer to adopt IPM practices like nipping of drooped shoots, application of Neem cake @ 250kg/ha, application of Bt formulation and release of *T. chilonis* followed by Installation of Leucin lure WOTA traps @4/acre.



KRISHI VIGYAN KENDRA, VONIPETA



On 01.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Banana fields for diagnosis of pests and diseases incidence at Akulanarayanapalli village of Mydukur mandal. The scientists identified Aphid infestation in Banana. Recommended the application of *Imidachlorprid* @ 0.3 ml/lit or *Acetamiprid* @ 0.2g/lit.

On 02.02.2018 Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) have visited Settivaripalli for diagnosis of pests and diseases in Banana. The scientist has identified powdery mildew infection in Chillies. Recommended carbendazim @ 0.1 % or difenconazole @ 0.05 %.



On 03.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) conducted diagnostic field visit in chillies on pest and disease incidence at Musalnayapalli village. The scientists identified dieback disease in chillies. Recommended the application of propiconazole @ 0.1% or Azoxystrobin @ 0.05% or Tebuconazole @ 0.05%.



On 08.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Sri. J. Yoga Narasimhulu Naidu, Research Associate (Extension) have visited Maize field for diagnosis of pests and diseases at Mudireddipalli Thanda village of Mydukur mandal. The scientist identified Maize pink borer infestation and recommended the application of Chloropyriphos @ 0.25



% or Carbofuran 3G @ 8 Kg/acre in leaf whorls.

On 06.04.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Papaya field for diagnosis at Pothireddipalli village of Mydukur Mandal. The scientists identified calcium deficiency. Recommended foliar spraying of Calcium Sulphate @ 2 %.



On 17.04.2018, Smt. R. Suneetha Research Associate (Home Science) has conducted Follow-up for FLD on hermetic bag storage system in cereals, pulses and millets at Adireddipalli village of Mydukur Mandal. The samples collected from farmers were weighed and analysed for germination percentage.



On 20.04.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited betelvine field for diagnosis at Vonipenta village of Mydukur Mandal. The scientists identified mites damage. Recommended spraying of Sulphur (WP) @ 3gm/lit or dichofol @ 0.5 ml/lit.

On 24.04.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. J. Yoga Narasimhulu Naidu Research Associate (Extension) have visited Banana field at Musalnayanpalle village, Mydukur Mandal. The scientists interacted with the farmer and explained about basal fertilizer management and orchard management practices to be followed in Banana.



On 27.04.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. J. Yoga Narasimhulu Naidu Research Associate (Extension) have visited Chillies field at Adireddipalle village, Mydukur Mandal. The scientists identified Fe and Zn micronutrient deficiency in Chillies. Recommended application of Ferrous sulphate @ 2.5 gm/lt and Zinc sulphate @ 2gm/lt

On 08.05.2018, Dr. V. Nagarjuna, Research Associate, (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Banana field at Vonipenta village, Mydukur Mandal. The scientists are identified the sunburn in Banana field and recommended the



application of 1.5 % urea (15 gm /lit water) spraying on crop foliage for sustaining the hot condition.

On 26.05.2018, Dr. V. Nagarjuna, Research Associate, (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Banana field at Vonipenta village, Mydukur Mandal. The scientists are indentified the leaf eating catterpillar in Banana field and recommended the application of chlorpyriphos @ 0.15% and also suggested the application of 1.5 % urea (15 gm /lit water) on crop foliage for sustaining the hot condition.



On 11.06.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) has visited Torivamula village of Myalavaram mandal. The scientists and Horticulture officer interacted with the farmer and explained best management practices in different horticultural crops.



On 14.06.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited nurseries at G.V. Satram village of Mydukur mandal. The scientists are indentified colar rot disease in papaya at nursery stage and recommended application of Copper oxy chloride @ 3 g /lit to

control the diseases.



On 04.07.2018, Sri. G. Sandeep Naik, Scientist (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Bedadur village of Kondapur mandal for diagnosis of pests and diseases in Sweet orange. The scientists observed the

Gummosis disease caused by *Phytophthora* sp. and *Botrytis* Sp. in Sweet orange and suggested the removal and destruction of infected portion followed by application of Copper oxy chloride @ 3g/ litre or Bordeaux paste.

On 07.07.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Lekallavaripalli village to diagnose problems in guava. The scientists interacted with farmer and explain regarding orchard management in young stage and observed incidence of wilt in guava and suggested removal and destruction of wilted plants followed by application of Carbendazim @ 1g/litre for new plantation.



On 09.07.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Chillies field for diagnosis of pests and diseases at Edamadaka village of duvvur mandal.



The scientist identified upward curling and micronutrient deficiencies. Recommended the application of Imidacloprid @ 0.03% or Dimethoate @ 0.2% + Neemoil @ 0.5% for upward curling and application of micronutrient mixture @ 1kg per acre twice within 15days.



On 10.08.18, Smt. R. Suneetha, Research Associate (Home science), Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta conducted sowing of vegetable seeds in nutritional kitchen garden at KGBV School for girls in Mydukur mandal. The scientist visited the school and observed the germination in different students plots of the Nutritional Kitchen garden.



On 17.8.2018 G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited farmer field in T.Kothapalli village and monitored the application of Carbofuran 3G @160g per 1cent nursery 1 week prior to transplanting and also suggested to follow the clipping of leaf tips and formation of alley ways in East-West direction to minimize the pest problem

in Paddy.

On 23.08.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited turmeric and onion fields at Madirepalli village of Mydukur mandal. The scientist observed the nutritional deficiency in turmeric. Explained about fertilizer management



and importance of micro nutrients in enhancing the crop yield.

On 30.08.2018 Dr. V. Nagarjuna, Research Associate (Soil Science), Krishi Vigyan Kendra, Vonipenta has visited cotton fields at Tanguturu village in Rajupalem mandal. The scientist identified leaf minor infestation in cotton and recommended the imidacloprid @ 1 ml /lit of water for control the disease.



On 31.08.2018 Dr. V. Nagarjuna, Research Associate (Soil Science), and Dr. V. Yugandhar Research Associate (Horticulture) Krishi Vigyan Kendra, Vonipenta have visited in turmeric field at T. Kothapalli in Mydukur mandal. The scientist identified the zinc and iron deficiency in turmeric and recommended the formula for correcting the nutrient deficiency.



On 05.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited citrus fields for diagnosis of pests and diseases at Tippireddypalli village of Mydukur mandal. The scientists observed irregular flowering. The scientists suggested Cycocel



treatment @ 1000 ppm for flower regulation and fruit setting in summer season.

On 06.09.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Onion fields for diagnosis of pests and diseases at Madirepalli village of Mydukur mandal. The scientist observed the leaf spot disease in onion and recommended



the application of chlorothalonil @ 2.5 gm / lit.

On 08.09.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Guava fields for diagnosis of pests and diseases at Thuvvapallevillage of Mydukur mandal. The scientist observed the mealy bug infestation and recommended the application of dimethoate @ 2 ml/lit.

On 11.09.2018, Dr. R.V.S.K Reddy, Director of Extension, Dr. YSRHU, and technical team of KVK, Vonipenta visited Turmeric fields under FLD at T.Kothapalli in Mydukur. The Director of Extension observed the micronutrient deficiency in turmeric field recommended the application of Micronutrient mixture @ 5g/ litre and also interacted with farmers, suggested the ICM practices in turmeric for getting higher yields.



On 12.09.18, Dr. V. Yugandhar, Research Associate (Horticulture), and Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta have visited turmeric fields for diagnosis of pests and diseases and nutrient deficiency at G. V. Satram village of Mydukur mandal. The scientist identified the iron deficiency in turmeric field and also suggested the Ferrous sulphate @ 5 gm/lit to control the iron deficiency.



On 14.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture), from Krishi Vigyan Kendra, Vonipenta have visited paddy fields for diagnosis of pests and diseases at chapadu village in chapadu mandal. The scientist identified the Thrips damage in paddy nursery and recommended Profenofos @ 1.5 ml /lit to control the pest infestation in paddy nursery.



On 15.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture), from Krishi Vigyan Kendra, Vonipenta conducted a Diagnostic field visit in Turmeric fields at Mittamanupallivillage in Mydukur mandal. The scientist identified mite infestation in turmeric field and also suggested the Monocrotophos @ 1.6 ml /lit to control the pest infestation.





On 18.09.2018, G. Sandeep Naik, Scientist (Pl. Path), Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited turmeric fields for diagnosis of pests and diseases at Pappanapallivillage of Mydukur mandal. The scientists observed the micronutrient deficiency in turmeric and recommended the application of micronutrient mixture @ 5 gm / lit.



On 18.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta conducted a followup visit for FLD on ICM practices in turmeric at Kesavapuramvillage in Kasinayana mandal. The scientists identified iron deficiency in turmeric field and suggested the Ferrous sulphate @ 5 gm /lit to overcome the deficiency.

On 24.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Redgram and banana fields for diagnosis of pests and diseases at PeddaBhakarapuramvillage in Duvvur mandal. The scientists identified Zn and K deficiency in red gram and banana fields respectively and suggested the application of Zinc sulphate @ 2 gm / lit and Potassium nitrate or Sulphate of Potash @ 5 g/l to rectify Zn and K deficiency.



On 25.09.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited tomato fields for diagnosis of pests and diseases at Mittamanupallivillage of Mydukur mandal. The scientist observed the serpentine leaf minor damage and recommended the application of Chlorpyrifos @ 2.5 ml/l.



On 26.09.2018, G. Sandeep Naik, Scientist (Pl. Path), Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Turmeric fields for diagnosis of pests and diseases and nutrient deficiency at Settyvaripalli village of Mydukur mandal. The scientist observed Rhizome rot, leaf spot diseases and micronutrient deficiency in turmeric fields and suggested the soil drenching with Ridomil @ 3g/l to the disease infected and surround plants against Rhizome rot, application of Mancozeb @ 2.5 g/l for leaf spot disease and application of micronutrient mixture @ 5 gm/lit twice in 10 days interval.

On 26.09.2018, G. Sandeep Naik, Scientist (Pl. Path), Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr.V. Yugandhar, Research Associate



(Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Tomato fields for diagnosis of pests and diseases at Settyvaripalli village of Mydukur mandal. The scientist observed the tomato spotted wilt virus infection and recommended the removal and destruction of infected plants followed by the application of Dimethoate or Methyl-O-demeton @ 0.2% to control the spread of disease.



On 28.09.2018, G. Sandeep Naik, Scientist (Pl. Path), Dr.V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited banana fields for diagnosis of pests and diseases at Nagasanipallivillage of Khajipeta mandal. The scientist observed Leaf streak virus disease infection and recommended the removal and destruction of infected plants followed by the application of application of Dimethoate or Methyl-O-demeton @ 0.2% to control the spread of disease. Sri U. Nagaraju, HO, Mydukur also participated during the visit.

On 28.09.2018, G. Sandeep Naik, Scientist (Pl. Path), Dr.V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited Paddy fields for diagnosis of pests and diseases at Sunkulugaripallivillage of Mydukur mandal. The scientist observed Leaf folder infestation and recommended the application of Monocrotophos @ 1.6 ml/l.



carbofuran 3G @ 10kg /acre.

On 01.10.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited paddy fields for diagnosis of pests and diseases at Madirepallivillage of Duvvuru mandal. The scientists observed the gallmidge incidence in paddy fields and recommended the application of



On 04.10.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta have visited banana fields for diagnosis of pests and diseases at LingaladinnePallivillage of B.Mathammandal. The scientists observed the Sigatoka leaf spot infestation in banana fields and recommended the application of Chlorothalonil @ 0.2% or Propiconazole @0.1%.



On 04.10.2018, Dr.V.Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has visited Turmeric fields for diagnosis of diseases and nutrient deficiency at kanagudur village of Duvvuru mandal. The scientist observed micronutrient deficiency in turmeric fields and suggested application of micronutrient mixture @ 5 gm/lit twice in 10 days interval.



On 05.10.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited turmeric fields for diagnosis of pests and diseases at Akkulayapalli village of Mydukur Mandal. The scientist observed the incidence of turmeric leaf spot disease and recommended the application of Propiconazole @ 0.1% twice with 15 days interval.



On 06.10.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited turmeric fields for diagnosis of pests and diseases at Mittamanupalli village of Mydukur Mandal. The scientist observed the incidence of Rhizome fly infestation in turmeric and recommended the application of profenophos @ 0.2% or carbofuron 3G

@ 10kg /acre.

On 24.10.2018, and 25.10.2018 G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Maize fields for diagnosis of pests and diseases at Madirepalli and Tangutur villages. The scientist observed fall army worm (*spodoptera frugiperda*) infestation in Maize and suggested the application of thiodicard @ 0.1% or Emamectin benzoate @ 0.04% in leaf whorls.



On 25.10.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Cotton fields for diagnosis of pests and diseases at Tangutur village of Rajupalem Mandal. The scientist observed the incidence of sucking pest complex and recommended the application of Imidacloprid @

0.03% or Acephate @ 0.1% or [Acetamiprid @ 0.15%](#).

On 25.10.18 G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited CFLD pulses Redgram fields cultivating under NFSM - 2018 sponsored by ICAR – ATARI, Zone X, Hyderabad and crop is at budding stage and suggested the application of



Nem oil @ 0.5% to destroy egg stage of Maruka pod borer.

On 26.10.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Guava fields for diagnosis of pests and diseases at Vedurur village of Chapadumandal. The scientist observed the incidence of mealy bug infestation in Guava and recommended the application of Acephate @ 0.1% or Dichlorvos @ 0.1% or Profenophos @ 0.1%.



On 30.10.2018, G. SandeepNaik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has visited Bananafields for diagnosis of pests and diseases at AdireddypallivillageofMydukurmandal. The scientist observed the incidence of fruit fly infestation in Banana and suggested the removal and destruction of infested fruits followed by application of malathion @ 0.2% or erection of fruit fly traps.



On 02.11.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited turmeric fields for diagnosis of pests and diseases at Pappanapallivillage of Mydukur mandal. The scientist observed the incidence of turmeric leaf spot disease and recommended

the application of Propiconazole @ 0.1% twice in 15 days interval.



On 03.11.2018, Dr. R.V.S.K Reddy, Director of Extension, Dr. YSR Horticultural University and technical team of Krishi Vigyan Kendra, Vonipenta have visited Banana OFT fields. During the visit Director of Extension, Dr YSR HU interacted with the farmers and explained about bunch management techniques, fertilizer management to be followed after bunch

emergence and also observed Potassium deficiency in Banana recommended the application of Potassium nitrate @0.5%.



On 03.11.2018, Dr. R.V.S.K Reddy, Director of Extension, Dr. YSR Horticultural University and technical team of Krishi Vigyan Kendra, Vonipenta have visited Turmeric OFT fields. During the visit Director of Extension, Dr YSR HU interacted with the farmers and explained about fertilizer management and INM for better yields in Turmeric and also observed leaf spot disease infection in Turmeric recommended the

application of Mancozeb @0.25% or Chlorothalonil @ 0.25%.

On 09.11.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited tomato fields for diagnosis of pests and diseases at Mittamanupalli village of MydukurMandal. Scientists observed the Powdery mildew disease infection and recommended the application of wettable sulphur @ 0.3% or Kerathane @ 0.1%.



On 09.11.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Guava fields for diagnosis of pests and diseases at Tuvvapalli village of Mydukur mandal. The scientists observed the incidence of mealy bug infestation in Guava and recommended the application of Acephate @0.1% or Dichlorovos @



0.1% or Profenophos @ 0.1% and R.A (Horticulture) explained about pruning management in young stage of Guava to the farmers.

On 14.11.2018, Dr.V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited banana fields for diagnosis of pests and diseases at Musalnayanapallivillage of Mydukur mandal. The scientist observed Leaf streak virus disease infection and recommended the removal and destruction of infected plants followed by the application of Dimethoate or Methyl-O-demeton @ 0.2% to control the spread of disease.



On 20.11.2018, G. Sandeep Naik, Scientist (Pl. Path) and Sri E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited Groundnut fields for diagnosis of pests and diseases at Madirepalli village ofDuvvurMandal. Scientists observed the stemrot disease infection and recommended the application of Tebucoazole @ 0.05%.

On 22.11.18 R.Suneetha,Research Associate (Home Science) from Krishi Vigyan Kendra, Vonipenta has visited kitchen garden at T. Kothapalli village of Mydukur mandal. Planted in step wise green leafy vegetables, vegetables, fruits and creepers etc. Farmer also sharing produce to his neighbors in village.



On 23.11.2018,Dr. V.Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta, have visited in Marigold field at Mitamanupalli village of Mydukur mandal. The scientist demonstrated pinching operation in Marigold and explained fertilizer management also.



On 24.11.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited tomato fields for diagnosis of pests and diseases at Settivaripalli village ofMydukurMandal. Scientists observed the Powdery mildew disease infection and recommended the application of wettable sulphur @ 0.3% or Kerathane @ 0.1%.

On 24.11.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Turmeric fields for diagnosis of diseases and nutrient deficiency at chinnaiahgaripalli village of



Mydukur mandal. The scientist observed Rhizome rot disease in turmeric fields and suggested the soil drenching with Ridomil @ 3g/l to the disease infected and surrounding plants against Rhizome rot.



On 29.11.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited Banana fields and conducted OFT on bunch management in Banana at Settivaripalli village of Mydukur mandal. The scientist demonstrated spraying of Sulphate of Potash @ 0.5% on banana

bunches at 5th day and 15th day after last hand opening after that covering the bunches with bunch covers.



On 29.11.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta, have visited onion fields for diagnosis of pests and diseases at Settivaripalli village of Mydukur mandal. The scientists identified thrips infestation and recommended to spray Dimethoate @ 0.2%

On 06.12.2018, Dr. V. Nagarjuna, Research Associate (Soil science) from Krishi Vigyan Kendra, Vonipenta has visited chilli fields for diagnosis of pests and diseases at Akatavemula village of Peddamudium mandal. Scientist observed the powdery mildew disease and recommended to spray wettable sulphur @ 0.3% or Kerathane @ 0.1% or Myclobutanil @ 0.05%. Sri Jaya Bharath Reddy, HO, Peddamudium also participated during the visit.



On 07.12.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have visited fenugreek fields for diagnosis of pests and diseases at Mudireddypallithanda village of Mydukur Mandal. Scientists observed the Leaf eating caterpillar infestation and suggested to spray Monocrotophos @ 1.6 ml/lit or Quinolphos @ 2 ml/lit to control the pest infestation.

On 10.12.2018, Sri. E Ravi Goud, Research Associate (Agricultural Extension) has conducted survey on “A study on the Impact of Introduction of Neem Coated Urea and 45 Kg bag of Consumption of Fertilizer” as per the instructions given by ICAR- ATARI, Zone –X, Hyderabad. The sample size was 20 from that he concluded that 90% of farmers (18 No) were aware about Neem coated Urea and only 55% of farmers (11 No) were satisfied with the performance of Neem coated Urea.



On 11.12.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud, Research Associate



(Extension) from Krishi Vigyan Kendra, Vonipenta have visited turmeric fields for diagnosis of pests and diseases at Adireddypallivillage of Mydukur mandal. The scientist indentified mite infestation in turmeric field and also suggested to spray Monocorotophos @ 1.6 ml /lit or dimethoate @ 2 ml /lit to control the pest infestation.

On 13.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Banana fields for diagnosis of pests and diseases incidence at Adireddipalli village of Mydukur mandal. The scientists identified Aphid infestation in Banana. Recommended the application of



Dimethoate @ 0.2% or Acephate @ 0.15%.



On 18.12.2018 and 22.12.2018 Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave visited Tomato OFT trial “Introduction of Triple disease resistant hybrid Arka Samrat in Tomato” for followup at T. Kothapalli and Santhinagar villages. During

the visit Scientists observed alternaria leaf spot disease and leafminer infestation. Scientists suggested the farmers to spray Mancozeb @ 0.25% for leaf spot and Chloropyriphos @ 0.25% for leafminer.

On 19.12.2018 Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has visited papaya fields for diagnosis of pests and diseases at Adireddypallivillage of Mydukurmandal.The scientists identified leaf mosaic virus in papaya field and recommended to spray Imidachlorprid @ 0.3 ml/lit or Fipronil



@2 ml/lit for controlling of vectors transmitting viruses.



On 20.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Blackgram (TBG- 104) and Redgram (LRG-52) fields cultivated under CFLD Pulses under NFSM sponsored by ICAR- ATARI, Zone-X, Hyderabad. During the visit Scientist observed Powdery mildew disease in Blackgram and suggested to spray Myclobutanil @ 0.05% and Redgram crop is at flowering to pod formation stage suggested to spray Chlorpyriphos @ 0.25% to control the incidence of Maruca pod borer.

On 20.12.2018,Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave visited to sesamum field for diagnosis of pest and diseases incidence at Tanguturu village of Duvvuru mandal. The scientists observed powdery mildew disease and aphid infestation and suggested to spray Carbendazim @ 0.1% or Myclobutanil @ 0.05% against Powdery mildew and Acetamidrid @ 0.1% against aphid infestation.



On 26.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave visited tomato fields for diagnosis of pests and diseases incidence at Mudireddipalli Thanda village of Mydukur mandal. The scientists identified septoria leaf spot disease and suggested to spray Mancozeb @ 0.25% or Chlorothalonil @ 0.2%.



On 26.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited OFT trial “Management of Rhizome rot disease in turmeric” for followup and observed the incidence of Turmeric rhizome rot disease. Suggested the soil drenching with Ridomil @ 3g/l to the infected and surrounding plants to control the spread of disease.



On 02.01.2019, Dr. V. Nagarjuna, Research Associate (SSAC) and Sri. E. Ravi Goud, Research Associate (Agril. Extension) from Krishi Vigyan Kendra, Vonipenta have conducted follow up visits to FLD – Turmeric at Settyvaripalli village of Mydukur mandal. During the visit collected the biometric observation viz leaf width, leaf length, no of leaf/ plant, secondary leaf per plant and nutrient deficiencies, pest and diseases incidence in 5 X 5 m² area.

On 02.01.2019, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave visited Groundnut and Guava fields for diagnosis of pest and diseases incidence at vedurur village of Chapadu mandal. The scientists observed the stem rot disease in groundnut and suggested to spray Tebuconazole 1 ml /lit for control the stem rot.



On 02.01.2019, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave visited Guava fields for diagnosis of pest and disease incidence at vedurur village of Chapadumandal. The scientists observed the mealy bug and nematode infestation in Guava and recommended the application of Acephate @ 0.1% or Profenophos @ 0.1% for mealybug control

and suggested the removal and destruction infected plants followed by application of Carbofuran 3G @ 30grms/plant before planting of new grafts in the infested pits for gap filling.

On 04.01.2018 Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has visited papaya fields for diagnosis of pests and diseases at Adireddypallivillage of Mydukurmandal. The scientists identified leaf mosaic virus and ring



spot virus in papaya field and recommended to spray Imidachlorprid @ 0.3 ml/lit or Fipronil @ 2 ml/lit for controlling of vectors transmitting viruses.



On 05.01.2019 Dr. V. Nagarjuna, Research Associate, (SSAC) and Sri. E Ravi Goud, Research Associate, (Agril. Extension) from Krishi Vigyan Kendra, Vonipenta have visited chillies fields for diagnosis of pests and diseases incidence at Uppuguntapallivillage of Mydukur mandal. The scientists identified the virus diseases and suggested to spray acephate @ 1.50 gm / lit or Fipronil @ 2 ml/ lit for controlling the insect vector.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

Dr. Ch. Ruth, Assoc. Professor (Plant Pathology), College of Horticulture, Anantharajupeta observed Rhizome rot disease in Banana Grand naine variety in farmer field, Korlakunata village, Obulavaripalli Mandal, YSR Kadapa on 09-05-2018 along with Agricultural Officer Sri. Sreeramulu and suggested to give frequent irrigation and drenching of *Pseudomonas fluorescens* @ 50gm/per L./plant.

Dr. M. Ramaiah, Professor (Ento), College of Horticulture, Anantharajupeta visited, Banda kindapalli Mandal, Bangarupalyam and observed mango garden of farmers namey Madhava Naidu, Lokesh Naidu. He interacted with the farmers about Mango pests and diseases. Also highlighted the importance of natural enemies in controlling the various pests and diseases of different fruits, vegetables and flower crops.

Dr. Ch. Ruth, Professor (Pl. Path) along with PG students, College of Horticulture, Anantharajupeta visited VenkatareddyPalli, Village of Kadapa Dt on 23-01-2019 and observed mango garden of Ramaraju field. In Rumani variety of mango, observed anthracnose, sootymold and sucking pests and suggested Carbendazim 1g. + Neem oil 5ml/L. of water. In Neelum variety, observed Black banded disease and Gummosis at branches and suggested Bordeaux mixture 1% or Copperoxychloride 0.3% spray.

Dr. Ch. Ruth, Professor (Pl. Path) along with ELP students, College of Horticulture, Anantharajupeta visited Obulavaripalli, Village of Kadapa Dt on 28-01-2019 and observed Betel vine and Banana fields. In Betel vine observed foot rot disease and suggested Bordeaux mixture 1% or Redomil 0.2% spray.

Observed rhizome rot disease in Amruthapani variety of banana at B. Kammappalli village on 21.03.2019 along with PG students of Plant Pathology and suggested application of bleaching powder @ 6g/L. of water & *Pseudomonas fluorescence* @ 50g.per plant four times as basal application.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl.	Date	Problems noticed	Village	Scientist participated
-----	------	------------------	---------	------------------------





No.				
1.	1.05.2018	Observed the incidence of leaf blight disease, Rugose spiralling whitefly respectively and suggested its management practices to the farmers.	Rambilli village of Visakhapatnam district and Ravada village of Ranastalam village of Srikakulam district	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
2.	2.05.2018	Recorded the data in philin cyclone affected garden.	Thudem, Bhogapuram, Kindal villages of Vizianagaram district	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
3.	08.05.18	Incidence of Rugose spiralling whitefly and percent parasitisation of <i>Encarsia guadeloupe</i> which were earlier introduced for the biological control of RSW and observed 20-30% of parasitization.	Kalavalapalli village	Dr.N.B.V.Chalapathi Rao Dr.Joseph Rajkumar Principal Scientist (Ent.), CPCRI – Regional center, Kayankulam
4.	30.05.18	Coconut slug caterpillar incidence in coconut plantations	S.Chikkala, Digamarru, Baggewaram, Dagguluru, Lankala Koderu, Mentepudi villages of Veeravasaram mandal of West Godavari district	Sri. G. Krishna Rao, Research Associate (Ent.) & Sri. D. Rakshith Roshan Research Associate (Ent.)
5.	05.06.18	Ganoderma and stem bleeding affected coconut demonstration cum seed production farm under Coconut Development Board.	Vegiwada in West Godavari District	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
6.	12.06.18	Incidence of Ganoderma wilt, stem bleeding disease, Red palm weevil and Rhinoceros beetle damage.	Antarvedipalem, Gondi and Antarvedi villages of East Godavari district	Smt. B.Neeraja and G. Krishna Rao, Research Associate (Ento.)
7.	15.06.18	coconut slug outbrea.	Metlapudi village in Veeravasaram mandal in west Godavari district	Dr.N.B.V.Chalapathi Rao and G. Krishna Rao, Research Associate (Ento.)





8.	03.07.18	low yield and black headed caterpillar incidence.	Aswaraopet, BadradriKothagu dem district, Telangana state	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
9.	09.07.18	Forcollecting data in coconut based cropping system being followed by the West Godavari farmers for documentation.	Vijayarai, Kondarayanipalem, Kondalapaopalem, Kovvagunta villages of West Godavari district	Dr.N.B.V.Chalapathi Rao, Dr. E.Padma& Smt. M. Priyanka, Research Associate (Hort.)
10.	02.08.18	Basal stem rot disease in coconut.	Edarada village of Mamidikuduru mandal of East Godavari district	Dr. E.Padma& Smt. B. Neeraja
11.	27.09.18	Rugose spiralling whitefly infestation	Vakkalanka village, Ambajipeta mandal of East Godavari district	Dr.G.Ramanandam & Smt. B.Neeraja
12.	11.09.18	Ganoderma wilt disease, Rhinoceros beetle and Redpalm weevil in coconut	Nagullanka and Vegivaripalem villages of P.Gannavaram mandal	Smt. B.Neeraja& Sri. D. Rakshith Roshan, Research Associate (Ent.)
13.	20.09.18	Stem bleeding, Ganoderma wilt, Budrot, Grey leafspot and Rugose spiraling whitefly damage, Red Palm weevil and Rhinoceros beetle damage management.	Chinnaigudem, Kuntalagudem&Yernagudem villages, Devarapalli mandal of West Godavari district	Dr.N.B.V.Chalapathi Rao, Smt. B.Neeraja& Sri. D. Rakshith Roshan
14.	8.10.18	Rugose spiralling whitefly	Vakkalanka village, Ambajipeta mandal of East Godavari district	Dr.N.B.V.Chalapathi Rao
15.	08.10.18	Black headed caterpillar damage in coconut	S.Yanam village	Smt. B.Neeraja
16.	12.10.18 to 16.10.18.	VisitedtheTitili cyclone affected areas and suggest mitigation measures to be taken up for revival of coconut and cashew plantations	Srikakulam district	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
17.	20.11.18	Ganoderma sick plot to conduct the field experiment	Pedpatnamlanka village	Smt. B.Neeraja





		under AICRP on palms.		
18.	20.11.18	Rugose spiralling whitefly incidence on coconut.	Vemulapalli village of Dwarapudi	Dr.N.B.V.Chalapathi Rao
19.	22.12.18	Aspart of the three days training programme on cocoa and demonstrated pruning techniques, identification of pests and diseases and its control to the farmers.	Gopalapuram village of Ravulapalem (M)	Dr. G.Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
20.	20.02.19	survey on Rugose spiraling whitefly affected gardens	Pallayyagudem, Vijayarai& Pedavegi	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao

CASHEW RESEAECH STATION, BAPATLA

- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head and Dr. B. Nagendra Reddy, Scientist (Ento) visited cashew plantations at Forest area of Muttayapalem on 16.05.2018, observed severe CSRB infestation and advised them to go for removal of CSRB grubs by chiselling the bark and spraying of Chlorpyriphos 20 EC @ 10ml/l.
- Dr. B. Nagendra Reddy, Scientist (Ento) visited cashew fields at Gurugumilli, Buttayagudem Mandal of West Godavari on 19.05.2018, Method Demonstration was shown to the farmers on removal of cashew stem and root borer by chiselling the bark and spraying of chlorpyriphos 10 ml/lit.
- Dr. B. Nagendra Reddy, Scientist (Ento) visited the cashew farmers fields at Doramamidi and Gurugumilli village Buttayagudem mandal and observed Cashew stem and root borer infested trees and suggested the farmers to chiselling the bark and removal of grub and spraying Chlorpyriphos 20 EC @ 10 ml/l.
- Dr. B. Nagendra Reddy, Scientist (Ento) visited the cashew demo plots under TSP-Cashew sponsored by ICAR- DCR, Puttur at Doramamidi, Gurugumilli and Pandirimamidigudem villages of ButtayagudemMandal, West Godavari District.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head, attended the cashew orchard inspection at KVK, Rastakuntabai for improvement of cashew orchard and establishment of scion block for cashew grafts production on 13.08.2018.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head visited cashew plantation at Pottusubbayapalem, Katarivaripalem for identification of mother plants for collection of Scion sticks.
- Dr. B. Nagendra Reddy, Scientist (Ento) visited the cashew farmers fields at Komaravaram and Pandirimamidigudem villages of Buttayagudem mandal on 06.09.2018 and observed Cashew stem and root borer infested trees and suggested the farmers to chiselling the bark and removal of grub and spraying Chlorpyriphos 20 EC @ 10 ml/l.





- Sri. K. Umamaheswara Rao, Scientist (Hort) & Head, visited HRS, Darsi for giving awareness programme on Geotagging of RKVY assets on 04.09.2018.
- Sri. K. Umamaheswara Rao, Scientist (Hort) & Head, visited the Titly cyclone affected villages in Palasamandal, Srikakulam Dist from 14.10.2018 to 16.10.2018 and advised the mitigation measures for Cashew crop.
- RHWEP Students of Nagendrapuram village, organized Swatcha Bharath at Nagendrapuram on 13.12.2018, Dr. B. Nagendra Reddy Scientist (Ento), CRS, Bapatla, Head Master MPP School and farmers from Nagendrapuram village were participated.
- Sri.Ch.Chinnabbai, Assistant Professor (Ento) and Associate Dean Representative, College of Horticulture, Venkataramannagudem and Dr. B. Nagendra Reddy Scientist (Ento) visited RHWEP villages to inspect the student activities at villages on 14.12.2018.
- Sri. K. Umamaheswara Rao Scientist (Hort) & Head, visited the Cashew orchards at Gopalapuram, West Godavari and advised the farmers on spraying schedule of monocrotophos @ 1.6ml/l at new flush stage on 20.12.2018.
- Dr. B. Nagendra Reddy Scientist (Ento) along with RHWEP students, visited fields of Kukkalavaripalem village, Bapatla Mandal, Guntur Dist and advised the Ridge gourd and Bitter gourd farmers on best management practices on 21.12.2018.
- Dr. B. Nagendra Reddy Scientist (Ento), visited Cashew fields of Gopalapuram village and Mandal, WGDist, observed infestation of Gummosis disease, advised drenching of Fostyl-al fungicide @ 3g/l or Trdimorph @ 2g/l and collected sample for identification of pathogen.
- Organized the RythuSadassu at Bethapudi village of Bapatla mandal, Guntur Dist, on 08.03.2019 under RHWE Programme. Dr. M.L.N. Reddy, Dean of Horticulture, Dr. YSRHU attended as Chief Guest and delivered the message on this occasion. This programme was presided by Dr. K. Dhanumjaya Rao, Principal Scientist (Hort) & Head CRS, Bapatla, Dr. Subba Rao, NABARD Chair Professor, Agricultural College, Bapatla ANGRAU, Sri. Ch. Chinnabbai, Asst. Prof. (Ento.), COH, VR Gudem. Sri. K. Umamaheswara Rao, Scientist (Hort.), Dr. B. Nagendra Reddy, Scientist (Ento), CRS, Bapatla, MPEOs from Chirala and Bapatla mandal also participated. Around 100 No's farmers attended the Rythusadassu and they observed the specimens, charts and models displayed by the RHWEP students and soil health cards were distributed to farmers of respective villages.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. K. Ravindra Kumar Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology) HRS, Kovvur conducted survey in Chrysanthemum cv. Dendijer under poly house conditions at Rangampeta village of East Godavari District on 26.04.2018. Infestation of sucking pest complex, abscission of flowers was observed during the period of survey.
- Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology) HRS, Kovvur conducted diagnostic survey in banana, chilli, crossandra,



guava, tuberose and brinjal fields at Eethakota and Velicheru villages East Godavari District on 16.05.2018.

- R. K. Ravindra Kumar, Scientist (Hort.) visited polyhouse at Vemagiri on 22.05.2018 and interacted with farmer Mr. Seshagiri. Observed the flower bud abscission, leafy vegetative growth from flower bud like structures due to long day length and high temperatures. Also recorded the heavy incidence of thrips and suggested the farmer to spray acetamiprid 20 SP @ 1g/l at 15 days interval along with installation of yellow sticky traps @ 10 per 100 sq.mt polyhouse area.
- Dr.K.Mamata, Senior Scientist (Hort.), Dr.R.Naga Lakshmi, Scientist (Hort.), Dr.K.Ravindra Kumar, Scientist (Hort.) and Dr.Neelima, Horticulture Officer visited polyhouse at Chagallu on 24.05.2018 and interacted with the Chrysanthemum farmer Sri.Sivaramakrishna. Flower bud abscission was observed due to insufficient shortday periods and higher temperatures. Explained the farmer regarding the maintenance of polyhouse, blackout treatment and measures to be taken up for reducing the temperature for off season flowering and higher yields. Also observed white fly, thrips, leaf minor, mealy bug and spodoptera infestation and recommended suitable cultural, physical and chemical control methods.
- Dr. K. Ravindra Kumar, Scientist (Hort.), Shri. Homicherian, Director, DASD, Dr. K. Nirmal Babu, Director & Project Coordinator, AICRP on Spices, Dr. Rema, PS (Hort.), Dr. Rajeev, PS (Ag. Ext.), Dr. Jaya Sree, SS (Ag. Eng.) and Dr. Lizo, SS (Ag. Econ.) from IISR, Calicut, Shri. Mallikharjun, RA visited different turmeric, ginger and pepper fields in Chintapalli and G.K.Veedhi mandals on 08.06.2018 and observed the implementation of improved technologies of AICRP on Chintapallicentre in the fields of tribal farmers. Director, IISR, Calicut and Director, DASD planted clove plants in the newly developed block at HRS, Chintapalli.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Horticultural Research Station, HRS, Kovvur conducted survey for superior clones under AICRP on banana project, “Clonal selection in Banana” at Kothapalem, Nuthakki village in Mangalagiri mandal of Guntur District on 27.6.18. Identified a TellaChhakkerakeli clone with superior performance (8 hands and 160 number of fruits).
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, HRS, Kovvur along with Dr. M. Lokanadham, Scientist (Pl. Path), NRC Banana conducted survey on banana diseases at Pulidindi, Atryyapuram and Uchili on 24.7.18.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head, Dr. K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur, Dr. S. Ramamohan, DDH & PD APMIP, Shri. Ch. Sreenivasulu, ADH-1, Amalapuram and Shri Amarnath, HO, Ainavilli surveyed flood inundated horticulture crops located in Ainavillilanka&Madupalli villages in Ainavilli mandal, Koonalanka, Lanka of Thane lanka in Mummidivaram mandal, Nagullanka, Gannavaramlanka in P.Gannavaram mandals of East Godavari district on 28.08.218.
- Dr. K.Mamatha, Senior Scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.) and Miss. Babita, HO, Kothapeta surveyed the inundated fields located in Kedaralanka, Tatapudi, Narayanalanka and Veedhivarilanka villages in Kapileswarapuram mandal and Gopalapuram village in Ravulapalem mandal of East Godavari district on 28.08.218.





- Dr. R. Naga Lakshmi, Scientist (Hort.) and Sri.Ch.S. Kishore Kumar, Scientist (Pl. Path.) visited Kadiyam nurseries to survey for nematode infestation on 5.8.18 and observed root knot nematode infestation in betel vine.
- Dr. R. Naga Lakshmi, Scientist (Hort.) and Sri. Ch.S. Kishore Kumar, Scientist (Pl. Path.) HRS, Kovvur visited banana and vegetable fields at Malakapalli village of west Godavari district along with the RHWEP students on 6.9.18 and observed Banana bract mosaic, Banana streak virus and Cucumber mosaic diseases in banana and leaf spots in ridge gourd, bitter gourd and suggested remedial measures.
- Sri. Ch.S. Kishore Kumar, Scientist (Pl. Path.) and Dr. R.Naga Lakshmi, Scientist (Hort.) visited nematode infested guava orchard and collected root and soil samples at Madduru Lanka village on 17.9.18.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head, Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. N.B.V. Chalapathi Rao, Principal Scientist (Ento) visited Titli cyclone affected areas in Srikakulam district from 13.10.18 to 16.10.18 and suggested mitigation measures for the revival of the Horticultural crops.
- Dr. K. Mamatha, Senior Scientist (Hort.) and Dr. R. Naga Lakshmi, Scientist (Hort.) visited banana, turmeric and crossandra fields at Vaddiparru, Velcheru and Peravaram villages in East Godavari districts and interacted with the farmers about the tip over disease in T.C.Keli, wilt in crossandra and leaf spot in turmeric on 20.11.2018.
- Sri Ch.S. Kishore Kumar in-charge-AICRP on nematodes along with Dr. P. Rama Devi, (Pl. Path.) Head, HRS, V.R.Gudem identified root knot nematode infestation in medicinal plant *i.e.*, bavanchalu (*Psoralea corylifolia*) at HRS, V.R.Gudem on 29.11.2018.
- Dr. K. Mamatha, Senior Scientist (Hort), Dr R. Naga Lakshmi, Scientist (Hort) and Sri Ch.S. Kishore Kumar, Scientist (Pl. Path) visited cucumber field under polyhouse at Rangampeta near Peddapuram and identified nitrogen, potash and boron deficiencies and suggested ameliorative measures. Also collected nematode infested Chinese potato and Sweet potato tubers from HRS, Peddapuram on 13.2.2019.
- Sri Ch.S. Kishore Kumar, Scientist (Pl. Path) and Dr K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur visited marigold and chrysanthemum fields and observed thrips damage in marigold and phytoplasma disease in chrysanthemum at Kadiyam of East Godavari district on 24.2.2019.
- Sri Ch. S. Kishore Kumar, Scientist (Pl. Path) and M.L.N. Nandini, RA, (Pl. Path)) visited guava orchards at Maddurulanka and identified nematodes infestation in guava and suggested ameliorative measures on 22.3.2019.

HORTICULTURAL RESEARCH STATION, DARSI

- Surveyed the mango gardens in Ulavapadu along with CIAH, Lucknow scientist to identify the problems on 30.07.18 to 03.08.18 in Ulavapadu village and mandal.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM





- Dr.P.RamaDevi,Senior Scientist (PP) and Dr. P. Ashok, Scientist (Hort), HRS, Venkataramannagudem visited coconut, mango and dragon fruit orchards of Prakasaraopalem village and suggested plant protection measures to the farmers on 11.05.2018.
- Dr.P.RamaDevi,Senior Scientist (PP)HRS, Venkataramannagudem visited red sanders field in Prakasaraopalem village and suggested plant protection measures to the farmers on 11.05.2018.
- Dr.P.RamaDevi,Senior Scientist (PP)HRS, Venkataramannagudem as diagnostic team member visited Gannavaram to Nidamanuru stretch on NH-16 to identify the cause for the death of *Ficus benjamina* plants on 8.06.2018.
- Dr.P.Rama Devi, Senior Scientist (PP) HRS, Venkataramannagudem made diagnostic field visit to coconut garden in Telikacharla village on 11.06.2018.
- Dr. P. Ashok, Sr. Scientist (Hort.), HRS, Venkataramannagudem visited dragon fruit fields of Pulipadu village of Gurajala mandal, Guntur dt. with the help of Assistant Director of Horticulture and Horticultural officer of Gurajalamandal on 30.11.2018.
- Dr. P. Ashok, Senior Scientist (Hort.), HRS, Venkataramannagudem visited dragon fruit fields of Madanapalli and surrounding areas on 21.12.2018 .
- Dr.P.Rama Devi, Senior Scientist (PP) HRS, Venkataramannagudem made diagnostic field visit to basil fields in Kukatlapalli and Chinakothapalli villages in Prakasam dt on 22.12.2018

MANGO RESEARCH STATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Agiripalli on 02.04.18
- Dr.G.Sravanth, Scientist (Ento), MRS, Nuzvid visited the guava gardens and identified barkeating caterpillar infestation and suggested suitable remedial measures at Tiruvuru on 02.04.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid visited the mango gardens at Pallagiri on 02.04.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head, MRS, Nuzvid participated in field visit at Yanamandhala on 27.04.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Tukkuluru, Katrenpadu&Musunnuru mandal on 28.04.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Ravanakkapeta on 3.5.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at sunkollu and nearby villages on 5.5.18 identified the mango stem borer infestation.
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at hanumanthunigudem on 7.5.18 for survey and collection of fruit borer.
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid visited mango gardens at venkatayapalem and nearby villages on 10.5.18 for survey and collection of fruit borer.





- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid visited mango gardens at annavaram and nearby villages on 11.5.18 for survey and collection of fruit borer
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit at kondaparva and nearby villages on 16.5.18 regarding fruitfly management
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid visited mango gardens at jayanthi and nearby villages on 17.5.18 for survey and collection of fruit borer.
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to papaya gardens at Mukkellapadu on 17.5.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens At A.Konduru, Kambampadu on 25.5.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Tukkuluru on 26.5.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Edara and nearby villages on 28.5.18
- Dr.R.Rajyalakshmi, Scientist (Hort), MRS, Nuzvid participated in field visit at A.Konduru on 07.06.18 demonstrated the training and pruning practice in mango.
- Dr.R.Rajyalakshmi, Scientist (Hort), MRS, Nuzvid participated in field visit at Vadlamanu and near by villages on 12.06.18 demonstrated the training and pruning practice in mango.
- Dr.R.Rajyalakshmi, Scientist (Hort), MRS, Nuzvid proceeded to diagnostic visit to Guava gardens at Atkur, Ganavaram on 14.06.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Konnamgunta on 19.06.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Vissannapeta on 21.06.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to Guava gardens at Kondaparva, Narsapuram on 21.06.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Galagaludem on 2.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at G.Konduru, Kanchikacharla on 17.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Ramannagudem, Vattigudipadu on 18.7.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Narsapuram on 23.7.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Venkatayapalem&Annavaram on 24.7.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Hanumanthulagudem&Digavalli on 26.7.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Annavaram on 31.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.G.Sravanthi, Scientist (Ento) MRS, Nuzvid. visited mango gardens at Tukkuluru on 7.8.18





- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Mittagudem, Leelanagar on 13.8.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at ChinnaAgripalli, Gollanapudi on 17.8.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Choppametla on 24.8.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid visited mango gardens at Narsapuram on 27.8.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Kondaparva, Ramanakkapeta on 28.8.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Annapunenivarigudem on 31.8.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Kanumuru, Utukuru&Gampalagudem on 2.9.18
- Dr.G.Sravanthi, Scientist (Ento) & Head, MRS, Nuzvid, visited mango gardens at Edara& nearby areas on 7.9.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Simhadhripuram, Gogulampadu on 10.9.18
- Dr.G.Sravanthi, Scientist (Ento) & Head, MRS, Nuzvid, visited mango gardens at Sunkollu& nearby areas on 11.9.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, proceeded to diagnostic visit to mango gardens at Ogiralathanda, Narsipeta&Sidhardhanagar on 12.9.18
- Dr.B.K.M.Lakshmi, Scientist (P.P), Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid, proceeded to diagnostic visit to mango gardens at Kondaparva& nearby areas on 27.9.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Digavalli& nearby areas on 29.9.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Leelanagar, Kondaparva&Visannapeta on 5.10.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to Guava gardens at Mittagudem&Hanumanthunigudem on 24.10.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Marribandham, Sitharamapuram on 27.10.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Gollanapalli, Agripalli on 30.10.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Gogilampadu on 11.11.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Vadlamanu, Gollampalli on 24.11.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid proceeded to diagnostic visit to mango gardens at Reddygudem on 26.11.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to diagnostic visit to Guava gardens at Ramanakkapeta, Digavalli&Hanumanthunigudem on 27.11.18





- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Chekkapalli, Thalavalli, Ramanakkapeta&Musunuru on 28.11.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid, visited Guava gardens, oilpalm, & mango at Tukkuluru on 29.11.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (P.P), MRS, Nuzvid, visited coconuts gardens at Kondaparva, Venkatayapalem&Akkireddygudem on 5.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Agiripalli on 10.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Yalamandala, Edhara on 11.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Tukkuluru on 21.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Gandhinagar, Narsipeta on 22.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (P.P), Dr.G. Sravanthi, Scientist, (Ento.) MRS, Nuzvid, visited mango gardens, oil palm gardens and solar power unit along with Hon'ble Board member Sri.G.Padmanabhanaidugaru at Mukkelapadu, Kondaparva, Morsapudi on 23.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (P.P), Dr.G. Sravanthi, Scientist, (Ento.) MRS, Nuzvid, visited mango gardens at Hanumanthulagudem on 25.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Degavalli on 30.1.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.G.Sravanthi, Scientist (Ento),MRS, Nuzvid, visited mango gardens at Siddharadhanagar on 22.2.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango & guava gardens at Gampalagudem on 23.2.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid, visited mango gardens at Annavaram, Yanamandala on 25.2.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.G.Sravanthi, Scientist (Ento),MRS, Nuzvid, visited mango gardens at Chevituru on 27.2.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Anjaneyapuram on 8.3.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango & guava gardens at Chittapur on 11.3.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Rangannagudem on 16.3.19
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid, visited mango gardens at Koduru on 19.3.19
- Dr.G.Sravanthi, Scientist (Ento),MRS,Nuzvid, proceeded to survey mango gardens at Pothireddypalli, Chakkapalli on 19.3.19





- Dr.G.Sravanthi, Scientist (Ento),MRS,Nuzvid, proceeded to mango gardens to survey, collect insect samples at Ramanakkapeta, Mukkellapadu on 27.3.19
- Dr.G.Sravanthi, Scientist (Ento),MRS,Nuzvid proceeded to conduct fruit borer paid up trial experiment followed by diagnostic visit at Hatiyathanda, Ogiralathanda on 28.3.19
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid proceeded to collect fruit borer samples followed by survey and diagnostic visit at Venkatayapalem, Bathulavarigudem on 30.3.19.

CITRUS RESEARCH STATION, TIRUPATI

- Dr L. Mukunda Lakshmi, Scientist (Horticulture) and Dr D. Srinivasa Reddy, Scientist (Entomology), CRS, Tirupati imposed the treatments under NICRA project at Venkatareddypalli village of Rly. Kodur mandal in Kadapa district on 25-04-2018.
- Dr. D. Srinivasa Reddy Scientist (Ent) & Dr. T.Rajasekharam, Scientist (Pathology) along with department officials, CRS, Tirupati inspected the citrus gardens at Sirnhadripuram and Pulivendula mandal on 04/05/2018.
- Dr. L. Mukunda Lakshmi Scientist (Hort) & Dr. T.Rajasekharam, Scientist (Pathology), CRS, Tirupati inspected the newly planted citrus gardens at Ananthapur on 09/05/2018.
- Dr. L. Mukunda Lakshmi, Scientist & Dr. D. Srinivasa Reddy, Scientist, Citrus Research Station, Tirupati along with Agriculture Officer visited acid lime gardens for conducting of Field day at BhuchinaiduKandrigaon 09/07/2018.
- Dr.K.T.Venkata Ramana, Principal Scientist (Hort.) & Zonal Head, Dr L. Mukunda Lakshmi, Scientist (Horticulture) and Dr. D.Srinivasa Reddy, Scientist (Ento.) CRS, Tirupati visited the R. Rachupalli village of Pullampeta mandal and Venkatareddypalli village of Rly. Kodur mandal in Kadapa district for collection of data under NICRA project on 13-07-2018.
- Dr L. Mukunda Lakshmi, Scientist (Horticulture) and Dr. D.Srinivasa Reddy, Scientist (Ento.) and V.Gopi, Technical Assistant, CRS, Tirupati visited the Venkatareddypalli village of Rly. Kodur mandal in Kadapa district for collection of data under NICRA project on 21-07-2018.
- Dr. K T V Ramana, Principal Scientist (Hort) & Head & Dr. L. Mukunda Lakshmi, Scientist & Dr. D. Srinivasa Reddy, Scientist, Citrus Research Station, Tirupati Visited new Horticulture Research Station, B. Kottakota, Madanapalli and also visited Tomato gardens of Sri M. Raja Reddy at M G Kota village of Nimmanapalli Mandal, Madanapalli and collected plants & fruits of three processing varieties of Tomato (K.TT18, Deepam&Thupham) on 04/07/2018.
- Dr. L. Mukunda Lakshmi, Scientist & Dr. D. Srinivasa Reddy, Scientist, Citrus Research Station, Tirupati along with Agriculture Officer visited acid lime gardens for conducting of Field day at BhuchinaiduKandrigaon 09/07/2018.
- Dr L. Mukunda Lakshmi, Scientist (Horticulture) and Dr. D.Srinivasa Reddy, Scientist (Ento.) and V.Gopi, Technical Assistant, CRS, Tirupati visited the R. Rachupalli village of Pullampeta mandal in Kadapa district for collection of data under NICRA project on 04-08-2018.
- Dr. D. Srinivasa Reddy, Scientist (Ent) and Dr. T. Rajasekharam, Scientist (PP), Citrus Research Station, Tirupati were visited Kadapa District on 28.08.2018 and observed the



incidence of pest and diseases, low fruit-set and yields in Acid lime gardens around vempalle mandal.

- Dr. D.Srinivasa Reddy, Scientist (Ento.), Dr. T. Rajasekharam, Scientist (PP) and Dr. V. Gopi, Technical Assistant, CRS, Tirupati carried out the survey on new insect pests and disease incidence of sweet orange and acid lime crop in Ananthapur District on 14-12-2018. Severe infection of Citrus mosaic virus (50%) was observed on sweet orange in the surveyed gardens.
- Dr. T. Rajasekharam, Scientist (PP), Dr. D. Srinivasa Reddy, Senior Scientist (Ento.) and Dr.V. Gopi, Technical Assistant, Citrus Research Station, Tirupati along with Horticulture Officer visited VenkatareddyPalli, Tadipatri mandal and collected the samples for Screening of viruses in sweet orange mother plants on 14-12-2018
- Dr L. Mukunda Lakshmi, Senior Scientist (Horticulture) and Dr D.Srinivasa Reddy, Senior Scientist (Ento.), CRS, Tirupati imposed the treatments at R. Rachupalli village of Pullampeta in Kadapa district on 20/03/2019.
- Dr L. Mukunda Lakshmi, Senior Scientist (Horticulture) CRS, Tirupati imposed the treatments at VenkatareddyPalli village of Kodur mandal in Kadapa district on 23/03/2019.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

Dr.R.Nagaraju, Senior Scientist (Hort.) & Head HRS, Anantharajupeta & Dr. M. Muthyala Naidu, Senior Scientist (Hort.) & Head, HRS, Darsi along with Officials of UCIL and departments of Horticulture inspected Banana Fields at Pulivendula and Vemula Mandals on 23-06-2018 to asses Crop damage.



Sri. Y. Chandrasekhar, Research Associate, HRS, Anantharajupeta reported root knot nematode infestation in the root samples of Thai guava received from farmer Sri.M. Venkatesh Naidu, Molakalakandriga village, G.D.Nellore (Mandal), Chittoor (Dist) and the plants were died due to nematode infestation. Necessary control measures were suggested to the farmer to control the same.

Dr. K. Krishna Reddy, Principal Scientist & Head, Division of plant pathology, ICAR-IIHR visited HRS, Anantharajupeta and observed viral diseases in AICRP trails on Papaya along with Dr. R. Nagaraju, Senior Scientist (Hort) & Head and Smt. T. Nagalakshmi, Scientist (Pl.Path) on 04-08-18.



Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta visited various mango orchards of Bangarupalem mandal of Chittoor district on 25-08-18 and discussed with the farmers and observed severe leaf webber



problem, suggested suitable remedial measures. Discussed about rejuvenation practices for old orchards and explained necessary pruning practices for current season in mango to improve the yields.

Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta along with local Horticulture Officer Sri. Raghu and MPEO's inspected papaya garden on 30-10-2018 at S.R.Puram, Akepadu revenue village of Kadapa District to know the exact reasons for crop failure.



Dr. M. Lakshminarayana Reddy, Dean of Horticulture, Dr. YSR Horticultural University, Dr. R. Nagaraju, Principal Scientist (Hort) & Head and Smt. T. Nagalakshmi, Scientist (Pl. Path), HRS, Anantharajupeta along with Dr. M. Ramakrishna, Associate Dean and Dr. B. Tanuja Priya, COH, Anantharajupeta, visited papaya fields protected by low cost solar fencing and organic papaya field at Nagavaram village of Chitvel mandal, Kadapa district on 31/10/2018.

Visit to organic Papaya fields - Dr. M. Lakshminarayana Reddy, Dean of Horticulture, Dr. R. Nagaraju, Principal Scientist (Hort) & Head, Smt.T. Nagalakshmi, Scientist (Pl. Path) and Dr. B. Thanuja Priya, Asst.Prof (Hort).



Smt.T.Naga Lakshmi, Scientist (Pl.Pathology) HRS, Anantharajupeta along with local Horticulture MPEO's visited banana field at C Kmmapalle village of Kadapa District on 06-11-2018 and observed severe incidence of sigatoka leaf spot on 7-8 months old tissue culture (G-9) banana. Severe infestation Spodoptera damage caused by *Spodoptera* sp (species yet to be identified) was observed banana gardens in Bayanapalli villages of Kodur Division.

Dr. R. Nagaraju, Principal Scientist (Hort) & Head, surveyed mango fields of P. Kammapalli of Kodur mandal and observed mango flower initiation in different varieties i.e., Baneshan, Bengalora and Mallika and noticed the incidence of mango hopper and flower webber and suggested the farmers with necessary remedial measures.



HORTICULTURAL RESEARCH STATION, MAHANANDI

- Dr. K. Subramanyam, Principal Scientist (PP) & Head visited papaya fields in Dharmavaram (V) of Dhone (M) and observed the leaf curl virus and color rot and suggested the suitable remedial measures.





- Dr. M. Tagore Naik, Scientist (Hort.) visited nearby Banana fields in Mahanandi (M) and observed the Micro nutrient deficiency symptoms (Iron, Zink and Boran) and suggested the suitable remedial measures.
- Dr. M. Tagore Naik, Scientist (Hort.) visited nearby Banana, Turmeric and Jasmine fields in Mahanandi (M) on 09-08-18 and observed the sigatoka leaf spot in Banana, leaf eating caterpillar in Turmeric, bud warm in Jasmine and suggested the suitable control measures to the above problems.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) visited nearby Turmeric, Chiili and Marigold fields in Thammadapalli (V) of Mahanandi (M) along with RHWEP students on 15-09-18 and observed the leaf eating caterpillar in Turmeric, leaf curl virus in Chilli, borer in Marigold and suggested the suitable control measures to the above problems.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) visited nearby Banana, Turmeric, Chiili and Tube rose fields in Bukkapuram and Bollavaram (V) of Mahanandi (M) along with RHWEP students on 22-09-18 and observed the sigatoka leaf spot in Banana, leaf eating caterpillar in Turmeric, leaf curl virus in Chilli, leaf spot in Tube rose and suggested the suitable control measures to the above problems.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) visited forest nursery area near Gajulapalli village on 27-09-18 and found leaf spot in Teak wood, nutrient deficiency in Neem seedlings and gave the suitable remedial measures for above problems.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) took the RHWEP students for exposure visit to nursery, farmer ware house and vermi compost unit at Boilakuntla and Gopavaram villages and explained in details on 10-10-18.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) took the RHWEP students for exposure visit to Bio Control Lab, Regional Agricultural Research Station and National Seed Corporation at Nandyal on 10-10-18.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) visited Boilakuntla nursery area near Gajulapalli village on 20-10-18 and found leaf spot in Teak wood, nutrient deficiency in Neem seedlings and gave the suitable remedial measures for above problems.
- Dr. M. Tagore Naik, Senior Scientist (Hort.) visited Bukkapuram and U.Bollavaram village farmers field on 24-11-18 and found sigatoka leaf spot in Banana, nutrient deficiency in Marigold, leaf blotch and mite incidence in Turmeric and gave the suitable remedial measures for above problems.
- Dr. K. Subramanyam, Principal Scientist (PP) & Head conducted diagnostic survey on 04-01-19 in Ananthapur on various horticultural crops and recorded the incidence of pest and diseases.
- Dr. M. Tagore Naik, Senior Scientist (H) conducted filed visit in Thimmapuram and Bukkapuram villages on 21-01-19 and observed the Drumstick pod fly and Jasmine midge incidence and suggested application Dichlorovas @ 1 ml/lit against pod fly and application of Koragen @ 0.3 ml/lit against midge for controlling above pests.
- Dr. M. Tagore Naik, Senior Scientist (H) visited the Mahanandi mandal farmers fields on 20-02-19 and observed the powdery mildew and bacterial blight in Mango and under sized Banana bunches. Suggested suitable remedial measures to the above problems.

CITRUS RESEARCH STATION, PETLUR



- Scientists of CRS, Petlur conducted diagnostic field visit to acid lime gardens at Chintalatomkur, Kalavayi mandal on 07.06.2018. Scientists visited about 15 farmer's fields and recorded the pest, disease and other problems. Water and soil samples were tested and suggested the application of gypsum. In some gardens severe incidence of root rot and nematodes was noticed and suggested suitable remedial measures.
- Dr.B.Govindarajulu, Principle Scientist & Head, Citrus Research Station, Petlur visited acid lime gardens infected with pink disease near Vengamambapuram village, Balayyapalli mandal, SPSR Nellore dist. on 28.11.2018 and suggested spraying of hexaconazole @ 1ml/l.

C. TRAINING PROGRAMMES CONDUCTED

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUEM

A fifteen day's training programme on 'Food Processing and Preservation' was organized from 02nd April, 2018 to 16th April, 2018. Dr. E. KarunaSree, Course Director, Senior Scientist & Head, KVK, Dr. A.Devivaraprasad Reddy, Course Coordinator, Scientist (Fishery Science), KVK, Dr. K. VenkataSubbaiah, Scientist (Hort.), Sri. G. ShaliRaju, Scientist (Ento.), Dr. T. VijayaNirmala, Scientist (Veterinary Science), Dr. V. Deepthi, Scientist (AgriExtn), were the resource persons for the training program. A total of 29 BSc. students having educational background of Home Science from the Ch.S.D.St. Thesesa's College for Women, Eluru were took part in the training program. The trainees were exposed to theoretical and practical aspects on the food processing and preservation. Dr. R. V. S. K. Reddy, Director of Extension has attended as chief guest for the valedictory program and mentioned about the entrepreneurship development and reduction in wastage of food by employing proper preservation methods and followed by certificates were distributed to the successfully completed participants. In this program, Smt. Sushma, Asst Prof., and Dr. K. V. Padmavathi, HOD, Dept of Home Science, Ch.S.D.St. Thesesa's College for Women, were participated.



A Ten days vocational training programme on 'Nursery, Gardening, organic farming and sustainable agriculture' was organized from 16.04.2018 to 25.04.2018 to BSc. (B.ZC) students from the Ch.S.D.St. Thesesa's College for Women, Eluru were took part in the training program. This training programme coordinated by the Dr.K.VenkataSubbaiah scientist (Hort) and Dr.V.Deepthi scientist (Agril extension) and technical sessions on important aspects of nursery management & sustainable agriculture were taught by the scientists & guest lectures. The final viva- voce examination and record





evaluation were done on 25.04.2018. On the valedictory day chief guest Dr.R.V.S.K.Reddy, Director of Extension, Dr.YSRHU interacted with the trainees, congratulated them and certificates were distributed.

Conducted the fifteen days training programme on “Food Processing and Preservation” from 21.05.2018 to 04.06.2018. Dr.E.KarunaSree, Course Director, Senior Scientist & Head and Scientists of KVK, VR Gudem inaugurated the program. The Scientists of KVK have delivered lectures on vegetables, fruits, milk, meat, fish, millets, honey processing and preservation etc. A total of 31 students from Ch.S.D.St. Theresa’s College for Women, Eluru were trained on various aspects of food processing and preservation.



A Six days vocational training programme on ‘Friends of coconut tree’ was organized from 18.06.18 to 23.06.18. Dr.V.Deepthi, Scientist (Agricultural Extension) and Dr.K.Venkatasubbaiah, Scientist (Horticulture) coordinated the programme and scientists of KVK delivered lectures on various aspects as resource persons for the training programme. Dr.J.DileepBabu, Director of Research and Dr. R.V.S.K.

Reddy, Director of Extension, Dr.YSR Horticultural University attended the valedictory program as chief guests.



A three-day training programme on ‘Fish Seed Production and Rearing’ was organized from 20.06.2018 to 22.06.2018. Dr. R.V.S.K. Reddy, Director of Extension, Dr.YSRHU, Dr. S. Anjali, Joint Director, Sri. Tirupathiah, Asst Director, Dept of Fisheries, Eluru, Dr. E. KarunaSree, Senior Scientist & Head, KVK, Dr. A. Srinivas, Senior Scientist & Head, KVK,

Pandirimamidi were the guests for the training program. Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) coordinated the training program with the help of Dr. T. VijayaNirmala, Dr. V. Deepthi, Dr. K. VenkataSubbaiah, Sri. G. ShaliRaju. The fisherwomen from Pentapadu Village were trained in fish breeding and seed production.

Organized webcasting of PMs Nationwide interaction with farmers programme on 20.6.2018. In this programme 210 farmers were participated.



On 02.10.2018 Gandhi Jayanthi celebration and awards ceremony as a part of Swachhata Hi Seva from 15th

September, 2018 to 02nd October, 2018 was conducted at Tribal Welfare Government Ashram Boys



School (TWGABS), Nuthiramannapalem, Buttiaghudemmandal. In this programme Sri Harindra Prasad, Project Officer, ITDA, K.R.Puram, Dr.R.V.S.K.Reddy Director of Extension, Dr.E.Karunasree, Principal Scientist & Head, Dr.A.Devivaraprasad Reddy, Dr.V.Deepthi and Dr.T.VijayaNirmala, Mr.Ramarao, Head Master and other staff of Nuthiramannapalem and Doramamidi schools participated. The prizes were distributed to the school children who won in the Essay and Drawing competition.

MahilaKisanDiwas program was conducted on 15.10.2018. In this program, Sri.GaniVeeranjanelu, Hon'ble MLA, Unguturu, M. BapiRaju, ZP Chairman, Dr. B. Srinivasulu, Registrar, Dr. YSRHU, Dr. A.Sujatha, DSA, Dr.YSRHU, VRGudem, Smt. GousiaBagum, JDA, Smt. Anjali, JDF, Sri T.SubbaRao, DDH, Dr. Rama Devi, Senior Scientist & Head, HRS, VRGudem, Dr. E. KarunaSree, Principal Scientist & Head, KVK, KVK staff, VRGudem, Undi, RARS, Marteru, officials from the departments of Agriculture, Horticulture, ZBNF, Animal



Husbandry, Fisheries, Sericulture were participated. Exhibition stalls were inaugurated by the Chief Guests and Guests of Honor. Followed by the lighting of lam and prayer. The innovative and best women farmers were felicitated by the dignitaries. In this occasion, Out of fifteen women farmers two of the KVK contact farmers have received the awards. Kitchen garden kits were also

distributed to the participants.

On 06.10.2018 Dr.V.Deepthi Scientist (Agril Extension) and G.ShaliRaju Scientist (Entomology), conducted training programme on Integrated Crop Management in Green gram at Pandirimamidigudem village. Later supplied critical inputs to the farmers under CFLDs on Pulses.



Dr.V.Deepthi, Scientist(Agril Extension) and Miss. B. Rupadevi, Research Associate (Soil science) conducted an off-campus training program on improved management practices in greengram and demonstrated seed treatment of greengram with carbendizam @ 2.5gm/kg and imadachlopride @ 5ml/kg. Initiated Rabi CFLD on green gram var.WGG-42 for the year 2018-19. Seed treatment chemicals, bio fertilizers and pre-emergence herbicide were distributed to the farmers of Santragunta village of Dwarakaturumalamandal on 25.10.2018.

Dr.K.VenkataSubbaiah, Scientist (Horticulture) conducted training program on Guava and water melon cultivation at Kadiyadda village on 30-10-2018. This program conducted by coramandal fertilizers in collaboration with KVK, Venkataramannagudem.



Organized 200 hours (25 days) duration Skill Development Training Program (SDTP) on "Small Poultry Farming" to the farmers in coordination with Agricultural Skill Council of India (ASCI) and ICAR-ATARI, Hyderabad from 01.11.2018 to 11.12.18. The programme was inaugurated by Dr.B.Srinivasulu, Registrar and Dr. R.V.S.K.Reddy, Director of Extension, Dr.YSR Horticultural University and explained



about the importance of the skill training program to the young farmers. The demand for the selected enterprise as backyard poultry rearing and market for the country type poultry birds is increasing. Technical and practical session involving all the aspects of small scale poultry hatching, rearing and marketing skills will be imparted to the participants by the experts invited from various institutions of SVVU, tirupati, KVKs and private agencies.

Dr. V. Deepthi, Scientist (Agricultural Extension) and Sri. B. Rupa Devi (Soil Science & Agricultural Chemistry) conducted mid-season training programme on blackgram var. TBG-104 on 15.11.18 under CFLD on pulses in collaboration with Department of Agriculture at dibbagudem, Jeelugumillimandal.



Conducted world soil day on 5-12-2018. In this program Dr. M.L.N. Reddy, Dean of Horticulture, Dr. D. Srihari, Dean P.G. Studies, Dr. A. Sujatha, Dean of student Affairs and Dr. K. Gopal, Controller of examination and Dr. Gousia Begum, Joint Director of Agriculture attended as guests of honour. Officers from Agriculture and Horticulture departments, 200 farmers participated in the program and expressed

their views on importance of soil health management and also visited the exhibition. Two hundred and fifty soil health cards were prepared and distributed to the farmers and explained about the soil test based fertiliser application for the next season crop.



Conducted mid-season training programme on green gram var. WGG-42 on 05.12.18 to Gurugumilli, Buttaiahgudemmandal under CFLD. After the training programme distributed critical inputs like neem soap, pongamia soap, profenophos and yellow & blue sticky traps under CFLD pulses during the year 2018-19. Dr. V.

Deepthi, Scientist (Agri. Extn.) and Sri. B. Rupa Devi (Soil Science & Agricultural Chemistry) have co-ordinated the programme.

On 11-12-2018 conducted one day training program for farmers on “Energy and Water conservation”. In this program Dr. R.V.S.K. Reddy, Director of extension, Dr. YSRHU attended as chief guest and delivered lecture on energy conservation aspects and other officers were Sri. R. Satish, DISCOM AE, Tadepalligudem (Rural), Sri. Ch. Satyanarayana, AP Micro irrigation Project, Sri. P. Balaji, ADH, Eluru, Sri. G. Venkatasai, Engineer, AP State



Energy Conservation Mission. In this program about 150 farmers have participated. A brochure on energy efficiency in agriculture and allied sectors was compiled and released for distribution to the farmers.





On 11-12-2018 conducted valedictory function for 25 days (200 hours) skill development training programme (SDTP) on ‘Small Poultry Farming’ for rural youth farmers. During this valedictory function, our honourable Vice-Chancellor Sri Chiranjiv Choudhary, IFS and Commissioner of Horticulture and Sericulture and Ex-officio Secretary to Govt. of Andhra Pradesh has

participated as chief guest and appreciated KVK scientists and the trainees for successful completion of the 1st Skill training under ASCI in the university. Dr. B. Srinivasulu, Registrar, Dr. M. L. N. Reddy, Dean of Horticulture, Dr. J. Dilip Babu, Director of Research, Dr. R. V. S. K. Reddy, Director of Extension, Dr. K. Gopal, Controller of Examination, Dr. YSR Horticultural University, Venkataramannagudem were also participated as Guests of Honour and interacted with the farmers. Released the training manual on “Small Poultry Farming”. The Chief guest and Guests of honour have distributed certificates and training kit to the participants.

Sri. G. Shali Raju, Scientist (Entomology) and Dr. K. Venkata Subbaiah, Scientist (Horticulture) have conducted training cum exposure visit to the Farmer field schools (FFS) farmers in production of pesticide residue free vegetables (Brinjal & okra) from Busarajupalli Village and explained about various demonstration units at KVK and University campus later supplied critical inputs: Pheromone traps against fruit bores and Yellow and blue sticky traps against sucking pests.



Inauguration of 25 days Skill Development Training Program (SDTP) on “Beekeeping” to 20 farmers on 05.12.2018 in coordination with Agricultural Skill Council of India (ASCI) and ICAR-ATARI, Hyderabad. The program was scheduled from 05.12.2018 to 29.12.2018 and coordinated by Dr. E. Karunasree, Principal Scientist & Head and Sri. G. Shali Raju, Scientist

(Entomology). Technical and practical sessions involving all the aspects of Scientific Beekeeping and marketing skills to the participants will be imparted by the experts invited from various institutions of Dr. YSRHU, ANGRAU, CBRTI, Pune, SBEC, Vijayarai, NIRD, Hyderabad and private agencies.

Conducted training programme on “Integrated Crop Management practices for green gram var. WGG-42” on 11.12.18 to Pandirimamidigudem farmers, Buttaiahgudemmandal under CFLD. After the training programme distributed critical inputs neem soap, pongamia soap, profenophos and yellow and blue sticky traps under CFLD pulses during the year 2018-19. Dr.





V. Deepthi, Scientist (Agri. Extn.) and Sri. B. Rupa Devi (Soil Science & Agricultural Chemistry) have co-ordinated the programme.

On 2-1-2019 conducted awareness program on creation of FPO for Beekeepers of West Godavari district for easy marketing of produced honey from the Beekeepers. In this program our honourable university officers Dr. R.V.S.K. Reddy, Director extension, Dr. A. Sujatha, Dean of student affairs, Dr. YSR Horticultural university, Sri. T.V. Subbarao, Deputy Director of Horticulture, Scientists from KVK, Venkataramannagudem and progressive farmers have participated.



On 4-1-2019, Miss B. Rupa Devi, Research Associate (Soil science) conducted off campus training program on Integrated crop management in cashew at Pandugudem and Lankalapalli villages. In this program farmers learnt about pest and disease management in cashew and later supplied critical inputs to the farmers under ICM in cashew technical program. In this program more than 50 farmers have participated.

On 19.01.2019 conducted Assessment Test, viva – voice & practical demonstration for the trainees (20 nos) attended 25 days Skill Development Training Programme (SDTP) on “Beekeeping” in coordination with Agri-cultural Skill Council of India (ASCI) and ICAR-ATARI, Hyderabad. Valedictory function was also conducted on the same day in this programme Sri. Chiranjiv Choudhary, IFS, Vice-Chancellor, Dr. YSRHU, Commissioner of Horticulture & Ex-officio Secretary (Horticulture and Sericulture) to Govt. of Andhra Pradesh, Dr. R.V.S.K. Reddy, Director of Extension, Dr. A. Sujatha, Dean of Student Affairs, Dr. M.L.N. Reddy, Dean of Horticulture, Dr. YSRHU, Dr. E. Karunasree, Principal Scientist & Head, KVK, V.R. Gudem were the guests and explained about importance of honeybees as pollinators and FPOs later released practical manual on “Beekeeping as an Microenterprise” by the dignitaries and also distributed certificates to the trainees.



On 29.01.2019 G. Shali Raju, Scientist (Entomology) conducted Training programme on Integrated crop management in sesame at Telikicherla village and explained about pest and disease management



in sesame later supplied critical inputs to the farmers under Cluster front line demonstrations on oilseeds sponsored by ICAR – ATARI, Zone – X, Hyderabad.

On 31.01.2019 G.ShaliRaju, Scientist (Entomology), & Dr.K.VenkataSubbaiah, Scientist (Horticulture), KVK conducted training programme on Brinjal as a part of Farmer field schools (FFS) in production of pesticide residue free vegetables (Brinjal & okra) at Busarajupalli village and explained about fertilization and importance of IPM tools in AESA and also conducted Agro – Ecosystem Analysis (AESA) in Brinjal.



On 18-2-2019, Dr. K.VenkataSubbaiah, Scientist (Horticulture) in collaboration with horticulture department conducted 2 one day training programs in L.B. Cherla and Y.S. Palem of Narasapurammandal on cultivation and IPM practices in vegetables. In this program more than 100 farmers have participated.



On 24-2-2019 conducted PM- web cast on PM-kisansammannidhi program and also training program on “Department of Agro meteorological unit (DAMU)” for creating awareness on climate changes.



Conducted the twenty five day’s training programme on ‘organic grower’ from 25th February 2019 to 21st March, 2019. Dr.P.Ramadevi, Master trainer, senior scientist & Head, HRS, VR Gudem, Dr. E. KarunaSree, Course Director, Principal Scientist & Head, KVK, Dr.V.Deepthi, Course Coordinator, Scientist (Agricultural Extension), KVK. A total 40 rural youth were took part in the training programme. Dr.B.Srinivasulu, Registrar, Dr.YSR Horticultural University participated as chief guest in the inauguration on 25.02.2019 mentioned about the importance of the organic farming in now days. Dr.R.V.S.K. Reddy, Director of Extension explained the various activities involved in organic farming from seed to fruit production. The trainees were exposed to theoretical and practical aspects on the organic farming. In this program, R.Nagalaxmayya, State project manager, SEEDAP, K. Ravindra, District project manager, SEEDAP were attended.

Conducted Scientific Advisory Council (SAC) meeting at KVK, Conference hall on 27-2-2019. In this meeting KVK, Scientific staff presented their technical programs in front of Our honourable Vice-chancellor, Dr. Y.G. Prasad, ATARI, Director, Dr. R.V.S.K. Reddy, Director of Extension, Dr. B.V.K. Bhagwan, Zonal Head, HRS, Kovvur, department officials from agriculture,



horticulture, Fisheries and Animal husbandry, ATMA, ITDA, PHO and other progressive farmers. After the program completion the ATARI director visited the KVK farm and appreciated the KVK staff for development of farm.

A seven days skill training program for rural youth was conducted by on “Post harvest processing and packing of fruits and vegetables” from 6-3-2019 to 12-3-2019. As part of this training program different types of processed products were prepared by trainers like Moringa processed products (Moringa dried leaf, Moringa powder, Moringa chutney, Moringa pickle, Moringa tea powder), mixed fruit jam, tomato ketchup, lemon squash and minimal processed products. our respected university officer Dr. R.V.S.K. Reddy, Director of Extension, Dr. Y.S.R.H.U, along with Sri. T. Venu Krishna, ATMA, PD and ATMA DPD attended to the Valedictory function and delivered their valuable messages and also distributed participation certificates to the participants on 12-3-2019.



On 8-3-2019, Dr. K. VenkataSubbaiah, Scientist (Horticulture) went to training program as a resource person to Vinjara village of Polavarammandal on “Improved practices in mango cultivation” which was conducted by Horticulture department, West Godavari district. In this program more than 20 farmers have participated.

Dr. K. VenkataSubbaiah, Scientist (Horticulture) and Sri. G. Shaliraju went to Gadidhabooru for conducting training program in collaboration with PARD NGO on flower and yield management in cashew and also distributed need based crop inputs to the farmers on 8-3-2019. In this program more than 50 farmers have participated.



Conducted the twenty five day’s training programme on ‘organic grower’ from 25th February 2019 to 21st march, 2019. In this programme trainees exposed to various theoretical and practical aspects related to organic farming. Trainees prepared jivamrutham, ghanajeevamrutham, panchagavyam, bijamrutham and pachimirchi-velluvullidraavanam, umattakasayam, agniastam, bramastram, neemastram, dasaparnakasayam as part of the training programme. Trainees visited organic fields at kornapadu, Guntur and nachugunta as part of the training programme. The programme is coordinated by Dr.P.Ramadevi, Master trainer ,senior scientist & Head, HRS, VR Gudem, , Dr. E. KarunaSree, Course Director, Principal Scientist & Head, KVK, Dr.V.Deepthi, Course Coordinator, Scientist (Agricultural Extension), KVK, VR Gudem.





On 16-3-2019, Dr. K. VenkataSubbaiah conducted one day off campus training program on ICM in cashew at Ankannagudem village of Buttaigudemmandal. In this program KVK staff explained about flower management, Grading in the cashew and also distributed need based crop inputs to the cashew farmers. More than 150 farmers have participated in this program.

Organized 25 days Skill Development Training Program (SDTP) on ‘Organic Farming’ in coordination with Agricultural Skill Council of India (ASCI) and ICAR-ATARI, Hyderabad on 20.03.2019. As a part of this training programme 40 members of trainees were visited Rice research station, maruteru and padala market yard, tadepalligudem. They were visited different rice varieties fields and Integrated farming system in maruteru. In padala market yard, they were knew about marketing schemes and activities and also visited sudharshan cold storage unit.



On 20.03.2019, Sri.G.ShaliRaju, Scientist (Entomology), KVK, Venkataramannagudem attended review meeting of IBDC (Integrated Beekeeping Development Centre) at KrishiBhawan, Department of Agriculture, Cooperation and Farmers welfare, Ministry of Agriculture & Farmers Welfare, Government of India, New Delhi. The review meeting was chaired by Dr.B.N.S.Murthy, Horticulture Commissioner, DAC& FW, Govt of India and Co – chaired by Dr.B.L.Sarswat, Executive Director, NBB, DAC& FW, Govt of India, New Delhi and explained about Status of funds utilization and Progress of work done by IBDC, Dr.YSRHU.



KVK, Venkataramannagudem conducted twenty five day’s training programme on ‘organic grower’ from 25thFebruary 2019 to 21st march, 2019.in this programmes trainees exposed to various theoretical and practical aspects related to organic farming. Trainees prepared jivamrutham, ghanajeevamrutham,



panchagavyam, bijamrutham and pachimirchi-velluvullidraavanam, umattakasayam, agniasttram, bramasttram, neemasttram, dasaparnakasayam as part of the training programme. Trainees visited organic fields at kornapadu, Guntur,sahajaorganics,Vijayawada, organic fields, nachugunta,RARSMareteru and market yard as part of the

training programme. Dr.B.Srinivasulu, Registrar, Dr.YSR Horticultural University participated as chief guest in the valedictory on 21.03.2019 mentioned about the demand for the organic products in now days. In this program, Dr.R.V.S.K. Reddy, Director of Extension, Dr.J.Dilipbabu, Director of Research, Dr D ramesh, Executive Director, SEEDAP, K. Ravindra,



District project manager, SEEDAP were attended. In this programme released book on organic farming i.e on “**sendriyavyavasayavidanalu**” The programme is coordinated by Dr.P.Ramadevi, Master trainer, senior scientist & Head, HRS, VR Gudem, , Dr. E. KarunaSree, Course Director, Principal Scientist & Head, KVK, Dr.V.Deepthi, Course Coordinator, Scientist (Agricultural Extension), KVK, VR Gudem.

Conducted 6 days vocational training program from 18-3-2019 to 23-3-2019 on “Friends of coconut trees” with the support of coconut development board to the 20 coconut farmers. In this program the trainers learnt about climbing of coconut trees with the help of coconut climbing machine and also improved cultivation practices in coconut. Dr. E. KarunaSree, Principal Scientist and Head, KVK Venkataramannagudem attended as chief guest to the valedictory function and delivered her valuable speech to the coconut farmers and also distributed certificates and coconut climbing machines to the participants. Dr. K. VenkataSubbaiah, Scientist (Horticulture) coordinated this training program.



Conducted Skill training of Rural Youth (STRY) on Production of Bio-control agents from 26.03.2019 to 01.04.2019 with the support of Agricultural Technology Management Agency (ATMA), Eluru, West Godavari. In this Programme explained about Importance of Bio-control agents, Predators & Parasitoids, Bacterial, Fungal & viral pathogens & on farm production of Bio-control agents like *Trichoderma viride*, *Pseudomonas fluorescens* & various Entomopathogenic fungi.

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI



127th Birth Anniversary of Dr.B.R.Ambedkar was celebrated in Krishi Vigyan Kendra, Pandirimamidi. Miss Srividya Rani.N, Scientist (Extension) addressed the KVK Staff a few words about Dr.B.R.Ambedkar and said the staff to follow his pathways and bring laurels to the institute.

Krishi Vigyan Kendra, Pandirimamidi organized three days state level training program on Advances in Cocoa Production Technology from 24.04.2018 to 26.04.2018 sponsored by ICAR- DCCD, Kochi. Dr.A.Srinivas, Sr.Scientist & Head, KVK, PMD, invoked the guests. Dr. R.V.S.K.Reddy, Director of Extension, Dr. YSRHU attended as Chief Guest, addressed the farmers to follow IPDM practices, grow Cocoa as an intercrop in Coconut and Oilpalm to get higher returns. Technical sessions were conducted on Cocoa cultivation and nursery management, Pruning and production technology, Emerging pests and IPDM in Cocoa, Soil management, Rodent management, Cocoa marketing, Post harvest technology in Cocoa by Scientists of Dr.YSRHU. Valedictory Session was conducted on 26.04.2018. Sri. K.C.Bhanumurthy, Scientist (Hort.), Programme incharge, explained briefly about 3 days training programme, Chief Guest Satyanarayana garu, PHO-ITDA addressed the farmers to follow the Cocoa management practices in a better way and get good yields and distributed the certificates. In this programme, KVK, Pandirimamidi Scientists



and 50 farmers from Srikakulam, Vijayanagaram, Visakhapatnam, East Godavari & West Godavari districts were participated.



On 05.06.2018, Dr.A.Srinivas, Sr.Scientist& Head, Dr.S.Adarsha, Miss Srividya Rani.N, Sri.P.Raja Sekhar, Scientists from Krishi Vigyan Kendra, Pandirimamidi conducted World Environment Day. As a part of this event Karonda plants were planted in the KVK Pandirimamidi institutional farm. Dr.A.Srinivas discussed on the importance of protection of our environment by growing plants and reducing the use of plastic material. Neeru – chettu programme was also conducted as a part of Navanirmanadeeksha. KVK staff and farm labour participated in this programme

On 07.06.2018 Dr.A.Srinivas, Sr.Scientist and Head conducted training programme on Cage aquaculture management practices to tribal fishermen co-operative societies of Bhupathipalem&Musurumilli reservoirs of Rampachodavaram mandal, agency area of East Godavari district under TSP. Sri.Padmakar, State Co-ordinator from TATA TRUST &Dr.A.Srinivas conducted technical sessions, visited Musurumilli reservoir for site selection and construction of cages. Total 30 society members were participated.



On 20.06.2018 Dr.Adarsha, Scientist (Entomology) and Sri. N.Srividya Rani, Scientist (Extension) KVK, Pandirimamidi conducted on campus pre *kharif* training program on importance of summer ploughing and use of *Trichoderma viride*. Benefits of deep ploughing and use of biopesticides like *Trichoderma viride* and *Pseudomonas fluorescens* in disease control were elucidated to the farmers. Method demonstration on application of *Trichoderma viride* before planting was conducted as a part of program. Sri Praveen kumar, ASI, NGO, Sri Babu Rao, Pragathi NGO and 32 farmers participated in the program.

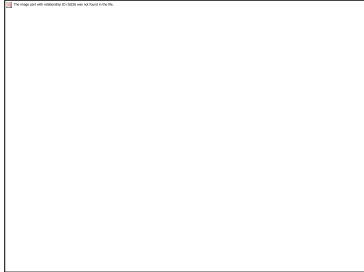


On 29.06.2018 Krishi Vigyan Kendra, Pandirimamidi has conducted training programme on Rejuvenation of Old Cashew Orchards organized by SERP in convergence with ITDA, Velugu-Rampachodavaram and APRIGP. Dr. R.V.S.K. Reddy, Director of Extension, Dr. YSRHU attended as chief guest for the programme and explained the importance of cashew as a commercial crop and its quality aspects for export purpose and also suggested the trainees for effective implementation of scientific interventions in horticulture and allied sectors. Dr. A. Srinivas, Senior Scientist & Head, KVK suggested the trainees to utilize various training programmes given by KVK for improvement of social economic status of tribal farming community. Dr. S. Adarsha, Scientist (Ento.), Sri K.C.Bhanumurthy, Scientist (Horticulture) and Sri P Raja Sekhar, Scientist (SS&AC) conducted technical sessions on production, protection and soil & water conservation followed by practical session on pruning activity in cashew orchard. In this programme, Sri Satyam Naidu, APM-Velugu, Sri Ramanjaneyulu, State Project Manager, SERP, Sri Y. Satyanarayana, PHO-ITDA, Rampachodavaram, Sri Kiran Kumar, Project Executive, SERP and 120 trainees participated.





On 02.07.2018, P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi has conducted an off-campus training programme on Integrated Crop Management in Cashew to FPO and technical staff of ASI, Rampachodavaram at Dokkapalem village of Addateegalamandal. In this, Scientist explained about seasonal crop management practices especially pruning and manuring to be followed in rejuvenation of old cashew orchards followed by method demonstration on pruning and preparation of Bordeaux paste and mixture and its application on cut surface of pruned twigs. In this programme, total 32 trainees participated.



On 12.07.2018, the programme on Interaction of Sri.Narendra Modi, Hon'ble Prime Minister with farmers has been live telecasted at Krishi Vigyan Kendra, Pandirimamidi. In this PM interacted with the SHG members of different KVKs. Dr.A.Srinivas, Sr.Scientist & Head addressed the farmers regarding the activities taken up by KVK, training programmes like tailoring, biscuit making, fish value addition etc. which make the women as good entrepreneurs in starting a business. In this programme Dr.S.Adarsha, Scientist (Entomology), Srividya Rani.N, Scientist (Extension), Sri.P.Raja Sekhar, Scientist (SS&AC) & Sri.K.C.Bhanu Murthy, Scientist (Horticulture) and 52 farmers participated.

On 13.07.2018, Dr. S. Adarsha, Scientist (Entomology) and Sri vidya rani. N Scientist (Extension) conducted off campus training program on Redgram-sorghum intercropping by Pictorial representation at pamugandi village of Devipatnammandal. Scientists explained the conditions and advantages of intercropping by pictorial representation and suitable management practices to be carried out in this cropping system. 26 farmers and Pragati N.G.O Baburao participated the program. As a part of training inputs like Redgram seed and rhizobium and jowar seed were distributed to 10 selected beneficiaries.



On 17.07.2018 Miss Srividya Rani.N, Scientist (Extension) and Sri.P.Raja Sekhar, Scientist (SS & AC) from KVK, Pandirimamidi visited Vedurupaka village, provided vegetable seed kits to the beneficiaries under FLD. Miss Srividya Rani.N, also conducted off campus training programme on Importance of Nutritional Kitchen Garden, how to prepare the beds and how to sow the seeds and benefits regarding backyard kitchen garden etc. In this programme Sri.Botta Rama Krishna, Sarpanch, Vedurupaka, Progressive farmer Sri.Appalaswamy and 28 farmers participated.



On 18.07.2018, P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi has conducted an on-campus training programme on Millet Production Technology to the practicing farmers of Maredumillimandal. In this, Scientist explained about cultivation aspects of major and minor millets and also the advantages of improved practices such as seed treatment, nursery raising, spacing, line sowing, manuring etc. over their traditional practices such as broadcasting, direct seeding, mixed cropping etc. The nursery beds of different millets such as sorghum, finger millet, foxtail millet and Bajra which are at one week days old were demonstrated to the farmers at KVK, Pandirimamidi.



On 19.07.2018 and 21.07.2018, Dr. A. Srinivas, Senior Scientist & Head, P. Raja Sekhar, Scientist (SS&AC) and Miss. N. Sri Vidya Rani, Scientist (Extension), Krishi Vigyan Kendra, Pandirimamidi has conducted an off-campus training programmes on Production Technology of Improved Sorghum Cultivars in Agency Area at D.V.Kota and Amirekula villages of Maredumilli and Rampachodavarammandals. In this, Scientists explained about integrated crop management practices and provided improved sorghum cultivars such as CSV-27 & CSH-16 to 160 tribal farmers on cluster approach under TSP-2018-19. In this Sri Ashok, MAO, Rajavommangi, members of Pragati & Laya NGO's and 78 tribal farmers participated.



On 06.08.2018, 10.08.2018 & 14.08.2018 P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi has conducted a training programme on creating awareness on use of mechanization in Horti/Agriculture to the members of Farmer Producer Groups of Kunduluru village of V.R.Purammandal, I.Polavaram, Bandapalli villages of

Rampachodavarammandal and discussed about their willingness for establishment of custom hiring centres in their villages under TSP-2017-18. In this Scientist has explained about the use of mechanization in horti/agricultural practices for timely operations, drudgery reduction, importance, role and benefit of custom hiring centres for timely providing agricultural implements on low cost hire basis to the farmers. In this, Additional Project Manager, Velugu-TPMU, V.R.Purammandal and farmers of respective villages has participated.

On 24.08.2018 Dr. S. Adarsha, Scientist (Entomology), Sri Vidya Rani, N Scientist (Extension) of Krishi Vigyan Kendra, Pandirimamidi conducted training program on beekeeping, to RHWEP students. Explained and demonstrated all the various types of bees, seasonal activities to be carried out, yield economics and bee pasturage to the students.



On 25.08.2018 Vocational training on Cashew Processing Unit & Vermicompost production technology has been conducted for RHWEP



students by Sri P. Raja Sekhar, Scientist (SS & AC) and Srividya Rani.N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi. As a part of this training the RHWEP students were taken to Cashew processing unit at Kothapalli village of Gokavarammandal. Sri. Sreenivasulu, Incharge of the processing unit showed the machinery used for boiling, drying & then cutting of the cashew and separating of the cashew nut from the fruit. The procedure was briefly explained to the students.



Parthenium awareness week was conducted by Dr.A.Srinivas, Sr.Scientist& Head and KVK scientists at KVK Institutional farm. As a part of this programme Sr.Scientist& Head interacted with KVK Scientists regarding Parthenium eradication, illeffects of Parthenium, Importance and preparation of compost by using parthenium weed etc. Parthenium awareness week has been also conducted at RHWEP villages, adopted villages and school children were also created awareness regarding the need of its eradication.

On 07.09.2018, Dr.A.Srinivas, Principal Scientist & Head, Miss Srividya Rani & Sri.P.Raja Sekhar, Scientists from KVK, Pandirimamidi has arranged a vocational training programme to RHWEP students on Palmyrah processing unit at HRS, Pandirimamidi. Sri.P.C.Vengaiah, Scientist, HRS, PMD explained to the students regarding processing unit, machinery, working procedure and about different value added products which can be prepared by using Palmyrah products. Research station activities conducted at HRS, PMD were explained by Dr.Rajendra Prasad, Scientist (Horticulture).



On 30.09.2018, Dr.A.Srinivas, Principal Scientist & Head, Miss Srividya Rani.N, Sri.P.Raja Sekhar, Scientists from KVK, Pandirimamidi conducted training programme on improved management practices in *kharif* crops like paddy, pulses, chillietc, seasonal practices to be followed in cashew and mango, interacted with farmers regarding action plan for the year *Rabi*-2018. Also discussed with the

farmers of the units to be grounded under DFI such as custom hiring centre, millet unit, leaf plate making unit, poultry, goatery etc.

Two days training programme was organized for the students on 10-10-18 & 11-10-18. Dr.A.Srinivas, Sr.Scientist& Head, Miss N. Sri Vidya Rani, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi has visited Rubber production and processing unit at Devarapalli village of Maredumilli mandal along with RHWEP students. Sri. Surhanth Naik garu and Salmon raju (Farm manager) explained about rubbernursery management, production, tapping and processing units. Practically the students were shown the



rubber plantations, procedure of tapping, latex collection, sheet preparation, drying, smoking & processing of rubber by using hand operated roller and sheet rollers. The detailed marketing aspects were explained to the students based on the quality of the sheets.



On 15.11.2018, Krishi Vigyan Kendra, Pandirimamidi has conducted One day Workshop cum Awareness programme to the farmers on Energy Efficiency and Demand Side Management (DSM) in Agriculture Sector in collaboration with



ATARI and APSECM. In this programme Chief Guests Dr.R.V.S.K Reddy, Director of Extension, Dr.YSRHU, V.R.Gudem and Sri.Manohar Prasad, IAS, Director CDR, inaugurated the energy efficiency related stalls arranged by APMIP, LAYA NGO, TANAGER and NREDCAP etc. The programme started with invitation of guests on to the dias by Dr.A.Srinivas, Principal Scientist & Head, KVK, PMD. Chief guests Dr.R.V.S.K Reddy and Sri.Manohar Prasad, IAS addressed the gathering on Energy Efficiency and water conservation aspects, to protect the natural resources like solar energy, wind energy, water, conserve them and utilize them in an effective way which will make the farmers get good yields. Pocket cards on Cashew grafts & care after planting and Pamphlet on Energy Efficiency and Conservation was released in the meeting by the dignitaries. Dr.Manohar Prasad, Principal Scientist & Head, HRS, Pandirimamidi, Sri.Rammohan, PD, APMIP and DDH Kakinada, Sri.Ramanmurthy, Divisional Engineer,EESL, Smt.P.Padmaja, PD, ATMA, Sri Nagachari, DPD-ATMA, Dr.Rajendra Prasad, Principal, Ag.Polytechnique college, Sri.Pandurango Rao, Development Officer, NREDCAP, Sri.Vamsi Krishna, Field Officer, APSECM addressed the gathering on Conservation of natural resources. Technical session was carried out on Case studies on AGDSM, Soil and Water Conservation schemes, Water conservation measures, Drip and Sprinkler irrigation by Ramanamurthy, Divisional Engineer, Sri.Robert Paul, ADA, Sri.Koteswar Rao Naik, LAYA, NGO, KVK Scientists sri.P.Raja Sekhar and K.C.Bhanu Murthy. KVK, Scientists Dr.S.Adarsha, Miss Srividya Rani.N, NGO volunteers, Horticulture Officer, BTMs, ATMs, 200 farmers from Rampachodavaram, Addategala, Gangavaram , Korukonda mandals of East Godavari District were participated in this programme



On 15.10.2018 Mahila Kisan Diwas programme has been celebrated at Krishi Vigyan Kendra, Pandirimamidi. In this programme Dr.R.V.S.K.Reddy, Director of Extension, Dr.YSRHU, V.R.Gudem interacted with women farmers regarding the activities of KVK which are helping the women farmers to become self sustainable. Chief guest Smt. Vantala Rajeswari, MLA, addressed the farmers that women should be

forward in agriculture and all the activities. The women farmers who are innovative in their farming were felicitated by KVK staff and Sarpanch, Rampachodavaram. In this programme Dr.A.Srinivas, Principal Scientist & Head, Dr.S.Adarsha, Srividya Rani.N, Raja Sekhar, Bhanu Murthy Scientists of KVK, PMD, APD Velugu, Satyam Naidu garu, Smt.Niranjani Devi, Sarpanch, RCVM other dignitaries and 124 farmers were participated.



On 22.11.2018, Krishi Vigyan Kendra, Pandirimamidi conducted Communal Harmony Awareness Week. In this programme Dr.A.Srinivas, Principal Scientist & Head explained that National Foundation for Communal Harmony (NFCH) is observing the Communal Harmony Campaign and Fund Raising Week from 19th to 25th November 2018 and the Flag Day was celebrated today with enthusiasm and fervor. He also stressed that all are equal before the law of justice and should not encourage the terrorism. In this programme Miss Srividya Rani.N, Scientist (Extension), Sri.P.Raja Sekhar, Scientist (SS&AC) and 35 farmers were participated.



Krishi Vigyan Kendra, Pandirimamidi has conducted three days training programme on production and use of organic manures and biofertilizers under RKVY – Dr.YSRHU from 20.11.2018 to 22.11.2018. In the inaugural session Sri.D.Srinivas Reddy ADA, Rampachodavaram participated as Chief Guest and expressed the importance of use of Bio-fertilizers in Agri & Horticultural sector.Sri.P Raja Sekhar,



Scientist (SS&AC) has conducted technical sessions on Importance and Usage of Organic manures & Biofertilizers in Agriculture/Horticulture and practical sessions on method of vermicomposting, azolla production, waste decomposer culture preparation & its application, covered pit method of FYM, Bio-fertilizers application etc. at KVK institutional farm. Trainees were taken to exposure visits to cashew orchards under organic farming at Mulleru and Rajavaram villages and demonstrated the method of neem cake and bio-fertilizer (VAM) application along with FYM followed by an interaction with one progressive farmer of organic farming. In valedictory session on 3rd day 10 Azolla kits and 2 low cost Vermi Beds were distributed to the trainees by Dr. A. Srinivas, Principal Scientist and Head. In this Programme, Miss. Srividya Rani, (Extn.), Dr. S. Adarsha (Ento.), Sri Bhanumurthy. K.C (Horti.), KVK scientists, Sri Praveen (Cluster Manager) & Sri A.V.Ramarao (Cluster Coordinator), TANAGER and Sri 30 tribal farmers from three agency mandals Rampachodavaram, Gangavaram and Addategala were participated.



On 26.11.2018, Krishi Vigyan Kendra has conducted National Constitution day at Krishi Vigyan Kendra, Pandirimamidi. In this Dr.A.Srinivas, Principal Scientist & Head, addressed the KVK staff and farmers on importance of the **Constitution Day (National Law Day)**, also known as **Samvidhan Divas**, is celebrated in India on 26 November every year to commemorate the adoption of Constitution of India . The Prime Minister of India Sri. Narendra

Modi made the declaration on 11 October 2015 while laying the foundation stone of theB.R.Ambedkar memorial in Mumbai. The year of 2015 was the 125th birth anniversary of Ambedkar, who had chaired the drafting committee of the Constituent Assembly and played a pivotal role in the drafting of the constitution. Previously this day was celebrated as Law Day. 26thNovember was chosen to spread the importance of the constitution and to spread thoughts and ideas of Ambedkar. In this programme pledge was also taken and lead by Miss Srividya



Rani.N, Scientist (Extension). KVK, Scientists Sri.K.C.Bhanu Murthy, Sri.P.Raja Sekhar and 15 farmers were participated.



On 26.11.2018, Krishi Vigyan Kendra, Pandirimamidi has started 6 days Vocational training programme (26th November to 1st December) under Rashtriya Krishi Vikas Yojana – Dr.YSRHU. In the Inaugural session Dr.A.Srinivas addressed the trainees about KVK activities and Importance of Bee-keeping in the agency area. Sri.Syam Kumar, Technical Officer, Centre for Development and Research, Rampachodavaram addressed the trainees to learn the skills efficiently in Bee-keeping, try to establish it as a small scale industry. Chief Guest of the session Sri.P.Satya Narayana gaaru, Project Horticulture Officer, ITDA, Rampachodavaram, addressed the trainees that due to honey bee cultivation pollination and yields will be increased in fruit and vegetable crops which helps in increasing the income of the farmer. He also explained the various on-going schemes of ITDA for the development of tribal people in the agency area and ITDA is ready to financially support the trainees in establishing bee-keeping units in future. After Inaugural session Miss Srividya Rani.N, Scientist (Extension) conducted pre-evaluation test, taken class on Introduction of Bee-keeping, Importance of beekeeping in Horticultural crops. In this programme KVK, (Hort) Scientist, Sri.K.C.Bhanu Murthy and 25 farmers from Visakhapatnam, Rajahmundry, Kakinada, Bodlanka, Thelamamidi were participated.

Krishi Vigyan Kendra, Pandirimamidi has conducted World Soil Day on 05.12.2018. Sri Rammohan Rao, DDH & PD, APMIP, Kakinada attended as chief guest and inaugurated the stalls arranged by KVK-Pandirimamidi. The programme was started with Invocation of Guests by Dr.A.Srinivas, Principal Scientist and Head, KVK, Pandirimamidi, Sri Satyanarayana, PHO, ITDA, Rampachodavaram, Sri Veerabhadra Rao, APO, Rubber Board, Rampachodavaram and Sri Surhant Naik, ADO-CRB, Rampachodavaram addressed the importance of soil health for sustainable agriculture to the farming community. Sri P Raja Sekhar, Scientist (SS&AC) delivered guest lecture on Soil Health-Its Importance in relation to plant growth. Soil health cards were issued to 50 farmers of KVK adopted villages of Rampachodavaram, Maredumilli&Gokavaram mandals and released one soil booklet on “SusthiraNelaArogyanikiBhusaaraPareeksha” by KVK, Pandirimamidi. In this programme, KVK, Scientists, Sri Ramesh, HO, Rampachodavaram, NGOs and 274 farmers of Rampachodavaram division have participated.



Krishi Vigyan Kendra, Pandirimamidi organized three days state level training program on Advances in Cashew Production Technology from 03.12.2018 to 05.12.2018 sponsored by RKVY. Dr.A.Srinivas, Principal Scientist & Head & KVK, invoked the guests on the Dias and explained the KVK activities in the agency area for the development of the tribal people. Dr. R.V.S.K.Reddy, Director of Extension, Dr. YSRHU has given welcome address and explained the farmers about Importance of cashew production and its biodiversity. Dr.J.Dilip Babu, Director of Research attended as



Chief Guest, addressed the farmers on cashew production practices and suggested to the farmers to take up new plantation with Cashew grafts BPP-8 & 9 instead of seedlings as our university is ready to provide cashew grafts. Technical sessions were conducted on Cashew cultivation and nursery management, Pruning and production technology, IPDM in Cashew, Soil management, Cashew marketing and formation of FPO, Post harvest technology in Cashew by Scientists of Dr.YSRHU.

Valedictory Session was conducted on 05.12.2018 Dr.A.Srinivas, Principal Scientist & Head invited the Chief Guests on the dias. Sri. Rammohan Rao garu, DDH, East Godavari, has participated as chief guest addressed the farmers to follow the Cashew management practices in a better way and get good yields. Sri.Satyanarayanagaru, PHO-ITDA, Rampachodavaram explained the ITDA schemes & TSP programmes and finally distributed the certificates to participants. In this programme, KVK, Pandirimamidi Scientists, APO-Rubber-ITDA, ADO- Rubber Board and 65 farmers from Srikakulam, Vijayanagaram, Visakhapatnam, East Godavari & West Godavari districts were participated



On 06.12.2018 Dr.B.R.Ambedkar Vardhanthi was conducted at KVK, Pandirimamidi by KVK, Staff and Scientists as remembrance of Dr.B.R.Ambedkar. Dr.A.Srinivas, Principal Scientist & Head, addressed the staff that Dr.B.R.Ambedkar is a great leader, Indian jurist, economist, politician and social reformer who inspired the Dalit Buddhist movement and campaigned against social discrimination towards the untouchables, while also supporting the rights of women and labour. 2 minutes silence was also maintained by the staff. In this programme KVK, Scientists, Staff, Reliance team and MEO of Rampachodavaram were participated.

From 10.12.2018 to 12.12.2018 Krishi Vigyan Kendra, Pandirimamidi organized 3 days training programme on **Millets Value Addition Biscuit and Bakery making Products** to the trainees with the financial support from Rashtriya Krishi Vikas Yojana. During these 3 days training programme demonstrated working mechanism of Biscuit making unit & nutritive value of millets, preparatory methods of value added products from millets



like Biscuits & Bakery products. In inaugural session Dr.A.Srinivas, Principal Scientist & Head addressed the trainees about the importance of millets and millet value added products in the present era which are good for human health and supporting to the tribal farmers under TSP. Sri Nagabushanam, Master Trainers demonstrated the preparation of Biscuits, Curry puffs, Dilpasand with Jowar, Ragi, Korra, Sajja, Wheat etc. Miss Srividya Rani.N, Scientist (Extension) coordinated the programme. Post Evaluation test was conducted to the trainees on awareness on their understanding. Valedictory session was conducted on 12.12.2018. Sri.P.Satyanarayana, PHO, ITDA, Rampachodavaram addressed the trainees that the products prepared by them were very good, said that to continue this after getting the unit and will provide the marketing facilities also. Certificates were provided to the trainees and Pamphlet was released on 'Chirudhanyalatho Viluva Adharitha Padharthala Thayari Vidhanam' in the



valedictory session. In this programme Dr.A.Srinivas, Principal Scientist&Head, Scientists KVK, Pandirimamidi and the trainees from Addateegala, I.Polavaram and Gokavaram were participated.

On 12.12.2018, Krishi Vigyan Kendra, Pandirimamidi organized one day Divisional Level Training program on Advances in Cashew and Mango Production Technology under RKVY, Dr.YSRHU.Dr.A.Srinivas, Principal Scientist & Head & KVK, Pandirimamidi invoked the guests and addressed the farmers about importance of cashew grafts over seedlings, economic importance of cashew and market aspects. Sri. Satyanarayana



garu, PHO-ITDA attended as Chief Guest, explained the farmers on cashew production practices and ITDA-Schemes. Technical sessions were conducted on Cashew, Mango cultivation and nursery management, Pruning and production technology, IPDM, Soil management, marketing, Post harvest technology in Cashew and Mango by Sri. K.C.Bhanumurthy, Scientist (Hort.) and Dr.S.Adarsha, Scientist (Ento.) of KVK, Pandirimamidi. In this programme, Ravi kumar, ITDA-H.O, Technical assistants of Tanager-NGO, 315 farmers from Gangavaram, Addateegala and Rajaommanngi mandals of East Godavari district were participated.

On 13.12.2018, Krishi Vigyan Kendra, Pandirimamidi organized one day training program on Improved cultivation practices in Cashew sponsored by ATMA, Kakinada at Dokkapalem village of AddateegalaMandal.Sri. K.C.Bhanumurthy, Scientist (Hort.) from KVK, Pandirimamidi coordinated the programme and explained about importance of cashew grafts over seedlings, management & cultivation practice. Dr.S.Adarsha, Scientist (Ento.) explained about IPM measures in cashew with special



reference to T-mosquito and stem borer in cashew. Sri. P.Rajasekhar, Scientist (SS&AC) explained the INM practices in cashew and soil health management.. In this programme, Technical assistants of Tanager-NGO, 47 farmers two villages were participated.

On 15.12.2018, Sri.PottiSreeramuluVardhanthi was done at KVK, Pandirimamidi. Dr.A.Srinivas, Principal Scientist and Head, addressed regarding the hunger strike done for the sake of the state to be formed for the telugu speaking people. Two minutes silence was maintained in remembrance of his sacrifice. In this KVK, Scientists Miss Srividya Rani.N, Sri P.Raja Sekhar, Sri.K.C.Bhanu Murthy and KVK Staff participated in the programme.



From 16.12.2018 to 31.12.2018 Krishi Vigyan Kendra, Pandirimamidi conducted SwachhtaPakhwada programme at On campus and off campus premises. As a part of this programme KVK, Scientists conducted pledge regarding the



programme and cleaned the on-campus and off campus premises. Created awareness on cleanliness drive among the staff. Miss Srividya Rani.N Scientist (Extension), Sri P.Raja Sekhar, Scientist (SS &AC) and KVK staff participated.

On 21.01.2019 Dr. A. Srinivas Principal Scientist and head, Dr. S.Adarsha Scientist (Entomology), Sri P. Raja Sekhar Scientist (SS&AC) and Sri Vidya Rani. N, Scientist (Extension) conducted training program on improved management practices in cashew sponsored by ATMA, Kakinada at Neelavaram village of Gangavaram mandal. The Scientists explained about the importance of application of micronutrients and plant protection measures in cashew. Representatives from Tanager NGO and 20 farmers participated in the programme.



On 22.01.2019 Block Technology Managers and Assistant Technology Managers of ATMA, Nellore visited Krishi Vigyan Kendra, Pandirimamidi. In this programme Dr.A.Srinivas, Principal Scientist & Head addressed the staff regarding the activities of KVK, Pandirimamidi and mandates of KVK. Also visited HRS Palmyrah station and knew the activities of HRS, PMD. KVK, Scientists

Dr.S.Adarsha, explained regarding the Bee-Keeping Unit and Miss Srividya Rani.N explained regarding the Biscuit making Unit. KVK, Institutional farm was also visited by the ATMA staff. In this programme Smt. Y.Ananda Kumari, PD, ATMA DPD, ATMA and 25 BTMs and ATMs participated.

70th Republic day was celebrated in Krishi Vigyan Kendra, Pandirimamidi on 26-01-2019. Dr.A.Srinivas, Principal Scientist and Head hosted the national flag and addressed the staff of KVK regarding the significance of celebrating republic day and also acknowledged regarding the rights and responsibilities of each individual towards the development of nation. In this programme Dr.D.Manoahara Prasad, Principal Scientist and Head, Horticultural Research Station, Pandirimamidi, Krishi Vigyan Kendra Scientists, staff participated.



On 06.02.2019, Krishi Vigyan Kendra, Pandirimamidi has conducted Farmers Scientists Interaction meeting at Vedurupaka village of Gokavaram mandal. In this programme Dr.D.Manoahara Prasad, Principal Scientist & Head, KVK, PMD addressed the scientists regarding the activities of KVK and also dealt regarding the pest and disease management in various crops. Chief guest of this programme

Sri.Ramakrishnagaru, Sarpanch, Vedurupaka praised the activities of KVK and said to utilize them effectively. Scientists of KVK, Dr.S.Adarsha, Miss Srividya Rani.N, Sri.P.Raja Sekhar & Sri.K.C.Bhanu Murthy addressed the scientists regarding their doubts on management



practices in various crops. Majorly the topics were dealt on Mango, Cashew, Rice, Soil and water management, waste decomposer technology etc. In this programme a total of 60 farmers were participated.

On 13.02.2019 Dr. S. Adarsha Scientist (Entomology) and Sri. P. Raja sekhar Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi conducted training program on transplanting technique in redgram at Devaram village of Devipatnam mandal sponsored by ATMA, East Godavari district. Trainees were taught about advantages and disadvantages of using this technique in obtaining better yields in rainfed conditions. Smt. P.Bhagyalakshmi (Sarpanch- Devaram village) and 33 farmers participated the program. Pamphlet on 'Natalapaddatilikandisagu' was distributed as part of training program.



On 16.02.19, KVK, Pandirimamidi has conducted divisional level training program on improved cultivation practices of chilli at Kunavaram village of Kunavaram mandal. Dr.D. Manohar Prasad, Principal Scientist and Head invoked the training program and Dr. R.V.S.K. Reddy. D.E, Dr.YSRHU attended as chief guest and addressed the farmers regarding scope and importance of chilli cultivation in agency area. Dr. Sarada, Principal scientist, Lam, Guntur, explained about high yielding varieties, improved cultivation practices of chilli. As a part of this program, a pamphlet on “**Mirapalosamagrasasyarakshana**” was released. In this program, Sri Devanandkumar, ADH, Rajahmundry, Sri Mallikarjun Rao, PHO, ITDA-Chintur, KVK, Scientists, Horticulture MPEOS and 120 farmers were participated.



On 28.02.2019 7th Scientific Advisory Committee meeting was conducted at Krishi Vigyan Kendra, Pandirimamidi. The session was inaugurated by Dr.D.Manohara Prasad, Principal Scientist & Head, KrishiVigyan Kendra, Pandirimamidi presented progressive report of 2018-19& Action Plan for the year 2019-20 and Scientists made individual power point presentation in their respective disciplines. Dr.R.V.S.K Reddy Director of Extension, Dr.YSR Horticultural University, V.R.Gudem acted as chairman, invoked the programme and briefed about Scientific Advisory Committee meeting. Dr.Y.G.Prasad, Director, ICAR-ATARI, Zone-X, Hyderabad attended as Chief guest and addressed on sustainable production and management of pest & diseases of Cashew, promotion of Millets, Pulses in agency area, to scaleup soil analysis for farmers. In this programme Dr.A. Bhaskaran, Principal Scientist (Soil Science), ICAR-ATARI, Hyderabad, Dr.G.Ramanandam, Principal Scientist & Head, HRS, Ambajipet, Sri.Devananda Kumar, AD Horticulture, Rajamahendravaram, PHO-ITDA, APD-Velugu- ITDA, Scientists from HRS- Kovvuru, Pandirimamidi, KVK – Kalavacherla, MAO from Rampachodavaram, HO's, BTMs-ATMA, NGO representatives and SAC representative member (farmers) have attended the meeting and suggested in taking OFTs, FLDs.



Dr. S. Adarsha Scientist (Entomology) Krishi Vigyan Kendra, Pandirimamidi conducted International women’s day on 08.03.2019 at Krishi Vigyan Kendra, Pandirimamidi.



On 13.03.2019 Dr. D. Manohara Prasad, Principal Scientist &Head, Krishi Vigyan Kendra, Pandirimamidi started 25 days training program on ‘Beekeeper (AGR/Q5301)’ sponsored by SEEDAP, Vijayawada under Andhra Yuva Shakthi Scheme.



Dr. B.V.K. Bhagawan Zonal Resaerch Head Coastal Zone- I and Pricipal Scientist (Horti) &Head, Horticultural research station, Kovvur attendedas chief guest for the program and explained the trainees about the importance of beekeeping. Dr. D. Manohara Prasad Principal Scientist &Head, Krishi Vigyan Kendra, Pandirimamidi briefed the present status of beekeeping in Andhra Pradesh. Sri Y. Satyanarayana, PHO, ITDA Rampachodavaram explained about various schemes that can be availed by tribals related to beekeeping through ITDA,Rampachodavaram.Dr. S. Adarsha Sceintist (Entomology), Sri. P. Raja Sekhar, Sceintist (SS&AC) and BhanumurthySceintist (Horticulture)fromKrishi Vigyan Kendra, Pandirimamidi coordinated the program. Smt. Geetha, ITDA Velugu, Sri Prasad, Sri Raju JRP’s, SEEDAP and representatives from Tanager (NGO) and 30 trainees from participated the program.



Total 40 trainees of DAESI programme has visited Krishi Vigyan Kendra, Pandirimamidi as part of training programe on Production Technology of Agricultural Crops and Horticultural Crops organized by ATMA, Kakinada on 25.03.2019. Dr. B.V.K.Bhagawan, Zonal Researc Head, Coastal Zone-I, Dr. YSRHU and Dr. Manohar Prasad, Principal

Scientist & Head, KVK, Pandirimamidi attended as chief guests in inaugural session and briefed about new challenges faced in horticultural crops. Dr.S.Adarsha Scientist (Entomology) and P. Raja Sekhar, Scientist, Krishi Vigyan Kendra, Pandirimamidi participated as technical resource persons on ‘Pest & disease management and nutrient management in cashew and Mango’ respectively.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Farmers’ Training including sponsored training programmes (on campus)

No.of training programmes	Participants								
	Others			SC/ST			Grand Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total





11	140	92	232				140	92	232
----	-----	----	-----	--	--	--	-----	----	-----

Farmers’ Training including sponsored training programmes (off campus)

No.of training programmes	Participants								
	Others			SC/ST			Grand Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
15	233	232	465				233	232	465

Training for rural youth including sponsored training programmes

No.of training programmes	Participants								
	Others			SC/ST			Grand Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	7	1	8	-	7	7	7	8	15



On 06.06.18, an exposure visit cum training programme was conducted on ‘Balanced feeding of Milch animal’ at KrishiVigyan Kendra, Periyavaram for dairy farmers. On this occasion, the farmers were acknowledged about feeding of balanced feed to the cattle for better milk yield and fat%.

Dr. L.Ranjith Kumar, Scientist (Entomology), KrishiVigyan Kendra, Periyavaram Participated as a resource person conducted training on management of insect pest and diseases in Paddy, G’nut, Blackgram including acidlime and other vegetable crops to 50 AEO’s & MPEO’s of Venkatagiri, Naidupeta and Sullurpetamandals organized by Department of Agriculture, Govt. of A.P on 27.07.2018 at veterinary Hospital, Gudur. The meeting was preceded by ADAs of respective mandals along with AD (Soil conservation).



On 17.09.2018, Ch. Sindu, Research Associate (Home Science) conducted training programme on preparation of low cost supplementary food to Anganwadi workers of Chaganam sector at ICDS office, Rapurmandal.



On 28.09.2018, Ms. Ch. Sindu, Research Associate (Home Science) conducted Training Programme on Value addition to Millets at Masidpet village of Rapur Mandal. She demonstrated the preparation Ragi malt, RagiLadoo, Jowarladdo and multi grain flour to the trainees. Sk. Shamshad Begum, CDPO-ICDS along with B. Hymavathi, Supervisor also participated. Total 30 trainees were attended to this programme.



On 29.09.2018, Dr.P.Manjari, Scientist- Veterinary Science, KrishiVigyan Kendra, Periyavaram conducted a lecture for creating awareness among school children regarding the causes and pathogenesis of Rabies disease and its preventive measures including vaccination schedule to be followed in canines and humans.

On 29.11.2018, Ms. Ch. Sindu, Research Associate (Home Science) conducted Training Programme on Value addition of Moringa at Periyavaram village of Venkatagiri Mandal. She demonstrated the preparation of Moringa powder and moringa chutney to the trainees and explained about nutritive values and health benefits of moringa leaves to pregnant and lactating women. Total 15 trainees were attended to this programme.



On 12.12.2018, inauguration ceremony of a seven days training programme on “Poultry Farming” was conducted at Krishi Vigyan Kendra, Periyavaram. The training programme was conducted in collaboration with MANAGE, SAMETI and ATMA, Nellore under Skill Training for Rural Youth scheme.

On 14.12.2018, Ms. Ch. Sindu, Research Associate (Home Science) conducted Training Programme on Value addition of Poultry meat at Krishi Vigyan Kendra, Periyavaram as part of training programme on “Poultry farming to Rural Youth”



On 18.12.2018, valedictory ceremony of a seven days training programme on “Poultry Farming” was conducted at KrishiVigyan Kendra, Periyavaram. The training programme was conducted in collaboration with MANAGE, SAMETI and ATMA, Nellore under



Skill Training for Rural Youth scheme with the aim of entrepreneurial development of the youth regarding poultry rearing.



Ms. S.M.Sailaja, Horticulture Research Associate, KVK, Periyavaram, has conducted a general meeting on cultivational aspects of loose flower crops like Marigold and Crossandra on 7th January 2019 at KVK, Periyavaram. The farmers were informed about the importance of loose flowers and their seasonal cultivational aspects to gain good returns.

On 19-01-2019, Mr. D. Vinod Naik, Research Associate (Agril. Extension), Krishi Vigyan Kendra, Periyavaram conducted Training programme on “ICT Applications in Agriculture” to farmers of different villages near Venkatagiri mandal, nearly 28 farmers attended and got aware of Mobile Apps, WEB Portals, Information KIOSKs. etc., related to Agriculture and allied sectors.



On 02.02.2019, Dr.P.Manjari, Scientist, Veterinary Science, Krishi Vigyan Kendra, Periyavaram conducted on-campus training programme on “Scientific Management of backyard poultry” for poultry farmers. Dr.B.GovindaRajulu, Principal Scientist and Head, Citrus Research Station and Dr.M.Kavitha, In-charge, KVK, Periyavaram also addressed the farmers and distributed 10 nos. of one month old Rajasri poultry birds to 10 farmers as part of animal husbandry On-farm trial.

KRISHI VIGYAN KENDRA, VONIPENTA

On 06.02.2018, Dr. V. Nagarjuna, Research Associate (SS & AC), Smt. R. Suneetha Research Associate (Home Science), Dr. V. Yugandhar, Research Associate (Horticulture) and Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) have visited Thotlapalli village and conducted training programme on Importance of Soil and Water analysis, Soil Health Cards, Recommended application of nutrients, and vermicompost units.



On 07.02.2018, Smt. R. Suneetha Research Associate (Home Science), Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension), Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Chenchaihari gari palli village to conduct training programme of Importance of Farmer Producer Organisations, Soil and Water analysis, Soil Health Card and recommended dosage of fertilizer application.





On 09.02.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) have conducted FLD on enhancing banana bunch yield through application of N, K and S at Sunkulagaripalli and Adireddipalli villages. The scientists emphasized the importance of recommended application of fertilizers. The scientist provided inputs like Potassium Nitrate, Agromin max, Biozyme and Sulphate of Potash to the beneficiary farmers.

On 20.06.2018, Sri G. Sandeep Naik, Scientist (Pl. Path), R. Suneetha, Research Associate (Home Science), Dr V. Nagarjuna Research Associate (SSAC) and Dr V. Yugandhar, Research Associate (Horticulture), KVK Vonipenta organized Hon'ble Prime Minister interaction programme with the farmers. The Hon'ble Prime Minister interacted with different state farmer around country who ever benefitted from Krishi Vigyan Kendras and emphasized on the importance of soil health cards, Mushroom production, Api culture and other Agro-based enterprises for doubling the farmer's income. Later, scientists explained about the utilization of waste decomposer and also demonstrated the preparation of waste decomposer solution with bacterial culture mixed in jaggery solution. During the programme Sri Nagaraju, Horticultural Officer also participated.



On 07.07.18 and 10.07.18 Suneetha. Runjala Research Associate (Home science) organised training programme to pregnant and lactating women regarding nutritional food intake and its impact on fetus in womb and growth during infancy, and also explained to overcome from nutritional deficiencies during lactation.

On 12.07.2018, Dr. M. Ramakrishna, Officer In-charge, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Nagarjuna, Research Associate (Soil Science), Krishi Vigyan Kendra, Vonipenta have conducted training programme on "Cultivation practices in Redgram" under CFLD on Pulses under National Food Security Mission sponsored by ICAR- ATARI, Zone – X, Hyderabad.



On 12.07.18 all KVK staff organized meeting to women farmers through web interaction to self help group and women groups with honorable PM's. KVK Staff Translated the PM's speech regarding women empowerment, women education etc.

On 14.07.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), have conducted Off campus training programme on "Importance of seed treatment" at MadirePalli village of Duvvur mandal. The



scientist explained to farmers on Importance of seed treatment, method of seed treatments, and also explained about best management practices to be followed in turmeric, onion, paddy and pulses.



On 16.07.18, R. Suneetha, Research Associate (Home science) organized training programme on nutritional kitchen garden and its importance to enhance nutritional food security at KVK and distributed nutrition kitchen garden seed kits to women and also explained designs in 36x36 model and canopy wise plantation and creepers at borders.

On 01.08.2018 to 07.08.18, Smt.R.Suneetha, Research Associate (Home Science), Krishi Vigyan Kendra, Vonipenta organized international lactation week at Adireddipalli and Participated as resource person in women development and child welfare department in different locations of Mydukur mandal. (Tuvvapalli, Mudireddipalli Tanda, Mydukuru local AWC's). The scientist explained cholestrum importance, physiology of lactation after delivery, sucking reflex of child immediate birth and nutritional care during lactation *etc.*,



On 02.08.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture), Krishi Vigyan Kendra, Vonipenta have conducted off campus training programme on **“Importance the application of Green manure, Greenleaf manure and organic manure”** at Sitaramapuram village of Chapadu mandal. The scientist

has explained importance in application of Green manure, Greenleaf manure and organic manure” in different horticulture crops.

On 23.08.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has conducted a training programme on **“Pest and disease management in Onion”** to the practicing farmers at Madirepalli village of Mydukur mandal. The scientist explained the cultivation practices, weed management and important pests and diseases and their management to the farmers.



On 04.10.18 Smt. Suneetha Runjala Research Associate (Home science) organized training programme on value addition to millets to women at KVK, vonipenta. She explained importance of millets in every day diets, Millets helps in reducing Obesity, Diabetes Miletus, Cardiovascular diseases and blood pressure. She showed method demonstration on preparation of Ragi cake, sajjavadalu to women. In



this programme women from Adireddipally, Mudireddipally, Mudireddipallytanda were attended.



Krishi Vigyan Kendra, Vonipenta has organized the World Soil Day on 05.12.2018. Dr RVSK Reddy, Director of Extension, Dr YSR Horticultural University has participated as chief guest and addressed the gathering on importance of soil health, soil test based fertilizer application to reduce the cost of cultivation on fertilizers. Sri Madhusudhan Reddy, Project Director, APMIP, Kadapa emphasized on the fertigation and importance of drip irrigation system to minimize the loss of water and fertilizers. Sri K. Prabhakar, Scientist (Agronomy), RARS, Nandyal participated as expert and explained about the importance of soil testing and soil health card, method of soil collection, usage of bio fertilizers to enhance crop yields. During the programme Soil health cards distributed to the beneficiary farmers. Dr. M. Ramakrishna, Officer Incharge, KVK, Vonipenta preceded over the programme. Sri SatyaPrakash, Project Director, ATMA, Kadapa, Sri Nagaraju, DPM, ZBNF, Sri Rajasekhar Reddy, AD Sericulture, Sri Ravindranath Reddy, ADH, Rajampeta and Sri VenkataSubbaiah, ADA, Mydukur and 148 members of farmers were participated.

On 29.12.2018 Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr V. Nagarjuna, Research Associate, (SSAC) from Krishi Vigyan Kendra, Vonipenta have conducted off campus training programme on “Pests and Disease management in Groundnut” at Vedurur village of Chapadu mandal. During the programme Scientist explained about Fertilizer management, IPM practices, Importance on usage of Pheromone traps, preparation of poison bait to control spodoptera and helicoverpa. Sri Poorna Chandra Sekhar, BTM, ATMA, explained about cultivation practices in Paddy.



On 03.01.2019 Sri. G. SandeepNaik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have conducted off training programme on “Pests and Disease management in Chillies” at Nagasanipalli village of Khajipeta mandal. During the programme Scientist explained about fertilizer management, IPM practices and different pest and disease management practices in chillies.



On 30.01.2019, Sri. G. SandeepNaik, Scientist, (Plant Pathology) and Sri E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have conducted on campus training programme on “Precautions to be taken in Usage of Pesticides (Safe Use of Pesticides)” at Krishi Vigyan Kendra, Vonipenta. During the programme Scientist explained about precautions to be taken while purchase of pesticides, during storage, handling, preparation of spray solution, selection of equipments, application of spray solution, after spray operation and usage of protective clothing.





On 06.02.2019 Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta has conducted a training programme on importance of organic manures, types and their production at bhimunipadu village of Duvvur mandal. The scientist explained the type of bulky and concentrated organic manures with plant and animal origin and also explains the importance of manure application for improving the physical, chemical and biological properties of soil.

On 14.02.2019. Dr. V. Yugandhar, Research Associate (Horticulture), Sri G. SandeepNaik, Scientist, (Plant Pathology) and Sri E. Ravi Goud, Research Associate (Extension) from Krishi Vigyan Kendra, Vonipenta have conducted off campus training programme on “Integrated crop management in Chillies” at SetivariPalli Village of Mydukurmandal. During the programme Scientist explained about nursery management, varieties, fertilizer and water management, flower and fruit drop management different pest and disease management and other cultural practices followed for getting good quality and higher yields in chillies.



On 08.03.2019, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have conducted a training programme on “Nutrient diagnosis and management in Horticultural crops” at Aravetipalli village in Kondapuram mandal sponsored by Agricultural Technology Management Agency (ATMA), Kadapa, YSR Dist. During the training programme scientist explained the nutrient role, deficient symptoms and their management in different crops. Sri Sukumar Reddy, Horticultural Officer, Kondapuram mandal, Sri. Ravi Kumar Reddy, BTM, ATMA, Muddanur sub division and MPEO’s were participated in the training programme.



On 08.03.2019, Krishi Vigyan Kendra, Vonipenta organized International Womens day at KVK. In this session scientist spoke about women’s day theme 2019- “Think equal Build smart, Innovate for change to achieve gender equality”. Conducted games to women and interacted with SHG groups to sustain themselves with small enterprises. In this programme women from Cherlopalli, Pappannapalli, Mureddipalli Thanda and Tippireddipalli were participated. Smt R. Suneetha, Research Associate (Home Science) coordinated this programme.

On 20.03.2019 Sri. G. Sandeep Naik, Scientist (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have conducted a training programme on “Nursery management in Horticultural crops” at KVK, Vonipenta, sponsored by Agricultural Technology Management Agency (ATMA), YSR Dist. During the training



programme scientist explained the Nursery management practices in vegetables, fruit crops, flowers and other Horticultural crops. Scientist (Pl. Path) explained about pest and disease management in chillies. Sri. Purnachandrasekhar, BTM, ATMA, addressed the farmers to raise the seedlings of vegetables like tomato, chillies and flowers to minimize the cost of cultivation on purchase of seedlings.



On 22.03.2019 Dr. V. Nagarjuna, Research Associate (SSAC) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have conducted off training programme on “Nutrient Diagnosis and management in horticultural crops” at Kotha Nellore village of Khajipeta mandal sponsored by Agricultural Technology Management Agency (ATMA), YSR

Dist. During the programme Scientist explained the different nutrient deficiency symptoms and their management.

On 23.03.2019 Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has conducted a training programme on “Nursery management in Horticultural crops” at Nandipalli village of Badvel mandal, sponsored by Agricultural Technology Management Agency (ATMA), YSR Dist. During the training programme scientist



explained the Nursery management practices in vegetables, fruit crops, flowers and other Horticultural crops. Sri C. Rama Krishna, Horticultural Officer, Badvel mandal also participated in the training programme.

On 23.03.2019 Smt. R. Suneetha, Research Associate (Home science) from Krishi Vigyan Kendra, Vonipenta has conducted off training programme on “Health, Nutrition, Hygiene and Sanitation” to pregnant and lactating women at Adireddipally and mini community health center and Angan Wadi center at Mydukur. During the programme scientist explained the different nutritional



deficiencies from gestation to geriatric age of women. Special nutrition need during pregnancy and lactation period and its impact during fetus growth and gives healthy life in infancy and childhood. She also explained precautions to avoiding sunstroke during summer season. Menstrual hygiene and sanitation also explained to protect themselves from survival cancer and other infections.



On 27.03.2019, Dr. V. Yugandhar, Research Associate (Horticulture) and Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta have conducted a training programme on “Nursery management in Horticultural crops” at Anjanaya Kotalla village in Khajipet mandal sponsored by Agricultural Technology Management Agency (ATMA),

Kadapa, YSR Dist. During the training programme scientist explained the Nursery management





practices in vegetables, fruit crops, flowers and other Horticultural crops. Sri. Sunil, BTM, ATMA, Khajipet sub division are participated in the training programme.

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Dr.K.UmaJyothi, Associate Dean; Dr.D.R.SalomiSuneetha, Professor; Dr.K.Uma Krishna, Professor; Dr.N.Emmanuel, Associate Professor; Dr.C.P.Viji, Assistant Professor, Sri Ch.Chinnabbai, Assistant Professor and Sri B.Chennakesavulu, Assistant Professor have involved as Chairman/member of various committees in the organization of two days state level seminar on Awareness, motivation and technology transfer for development of bee keeping in Andhra Pradesh organized by Dr.YSRHU, VRGudem at KVK, VRGudem on 27-10-2018 and 28-10-2018.

COLLEGE OF HORTICULTURE, ANANTHARAJPETA

- Dr. M. Raja Naik, Asst. Professor (Horticulture), COH, Anantharajupeta as a resource person, attended a training program on “Diploma in Agricultural Extension Services for Input dealers (DAESI)” discussed the production technology of heliconia, red zinger, bird of paradise and ornamental banana under low cost shade net houses on 15-04-2018 at Tirupati.
- Dr. C. Madhumathi. Professor (Horticulture), COH, Anantharajupeta as a resource person, attended a training program on “Diploma in Agricultural Extension Services for Input dealers (DAESI)” discussed the “Scope & Importance of Horticulture” to fertilizer dealers at farmers hostel, RARS, Tirupati on 28-04-2018.
- Dr. M. Raja Naik, Asst. Professor (Horticulture), COH, Anantharajupeta as a resource person, attended a training program on “Diploma in Agricultural Extension Services for Input dealers (DAESI)” and discussed with the dealer cum farmers about landscaping, propagation, development of various ornamental plants, their purpose and maintenance at nursery on 12-05-2018 at RARS, Tirupati.
- Dr. M. Raja Naik, Assistant Professor (Horticulture), College of Horticulture, Anantharajupeta attended the training program to the farmers as a resource person. Discussed and interacted with the farmers about “Low cost production technology of orchids and anthurium under protected structures” on 11-7-2018 at Regional Horticultural Training Institute, Kadapa.
- Dr. C. Madhumathi, Professor (Horticulture), COH, Anantharajupeta attended as a resource person in the training program on “Production technology & tissue culture banana” for MEO’s of department of Horticulture, organized by RHTI, Kadapa on 18-09-2018.
- Dr. M. Raja Naik, Associate Professor (Horticulture), College of Horticulture, Anantharajupeta has attended as resource person for training programme to the farmers on “Rejuvenation, pruning technology and management aspects before, during flowering and fruiting in mango” organised by Regional Horticultural Training Institute (RHTI), Dept. of Horticulture at Rythu Bazar, Chittoor on 4-11-2018.





- Dr. M. Raja Naik, Associate Professor (Horticulture), College of Horticulture, Anantharajupeta has attended as resource person for training programme to the farmers on “Protected cultivation of chrysanthemum and marigold under shade net house ” organized by Dept. of Horticulture at Chittoor on 23-11-2018.
- Dr. K. Swarajya Lakshmi prof (H) attended “Diploma in Agricultural Extension Services for Input Dealers (DAESI)” program as a resource person and explained about cultivation practices of flower crops viz Roses, Gerbera, Carnation, Tube rose, Gladiolus, Cut chrysanthemums, Heliconias, Red Ginger and filler crops on 06-01-2019. Interacted with farmers and clarified their doubts. She also explained about cultivation practices of Mango.
- Smt. G. Sarada, Asst. Professor (Ento.) has attended a training program to farmers on production technology of sweet orange and acid lime on 23-02-2019 at Regional Horticultural Training Institute (RHTI), Kadapa as resource person and imparted “Pest and Disease management techniques in sweet orange and acid lime’ to the farmers.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl. No.	Date	Training programme	Topic of the training programme	Scientist participated
1.	05.07.18	A farmers meetat Horticultural Research Station, Ambajipeta	Awarenesson use of bio control agents and its role in management of pests and diseases	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
2.	02.11.18	An exhibition cum RythuSadassu at Mukkamala	Fieldproblems in cultivation of various Horticultural crops	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
3.	20.12.18 to 22.12.18	Threedays training programme on cocoa at Horticultural Research Station, Ambajipeta	Trainingon latest production, protection technologies and marketing strategies of cocoa cultivation	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
4.	2.01.19	OnedayDistrict level workshopat Horticultural Research Station, Ambajipeta	Scientific coconut cultivation Technologies/value Addition in coconut	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
5.	24.01.19	One day district level seminar on cocoa at Tetagunta village of Tuni (M)	Productionand protection technologies of cocoa	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
6.	28.01.19 to	FOCTtrainingprogrammeat Horticultural Research Station,	Training on “Harvesting of	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi





	02.02.19	Ambajipeta	coconuts using climbing machines”	Rao& Smt. B. Neeraja
7.	25.02.19 to 2.03.19	FOCT training programme at Horticultural Research Station, Ambajipeta	Training on “Harvesting of coconuts using climbing machines”	Dr. G. Ramanandam, Dr.N.B.V.Chalapathi Rao& Smt. B. Neeraja
8.	8.02.19, 12.02.19, 14.02.19, 15.02.19, 21.02.19, 22.02.19, 23.02.19, 25.02.19, 27.02.19, 28.02.19 & 01.03.19	One day skill training programme at Horticultural Research Station, Ambajipeta	Mass production of <i>Isaria fumosarosea</i> for the control of Rugose spiralling whitefly	Smt. B. Neeraja, Dr.N.B.V.Chalapathi Rao&Dr. G. Ramanandam

CASHEW RESEARCH STATION, BAPATLA

- Training programme on cashew apple value addition was conducted for unemployed women of Karlapalem, cashew apple products like Cashew apple RTS, Syrup and Jam preparation were shown to the SHG sponsored by DCCD, Cochin on 24.04.2018
- Organized the District level seminar on cashew at Rastakuntabai, Parvathipuram on 25.04.2018 sponsored by DCCD, Cochin
- Organized training programme on cashew apple utilization for unemployed women, sponsored by DCCD, Cochin on 02.05.2018. Dr.Preethi Sagar, Teaching Associate has given the practical training programme.
- Organized District level farmers training programme on Cashew at Velugu office, Koyyuru, Visakhapatnam District., Andhra Pradesh on 25.03.2019 sponsored by Directorate of Cashewnut and Cocoa Development (DCCD), Cochin Kerala, Dr. K. Dhanumjaya Rao, Principal Scientist (Hort) & Head, Sri. K. Umamaheswara Rao, Scientist (Hort.), Dr. B. Nagendra Reddy, Scientist (Ento) Cashew Research Station, Bapatla, Dr. G. Narasimha Murthy, Senior Scientist (Hort) & Head, ARS, Anakapalli and Smt. Bindu Horticultural officer Gulugonda Visakhapatnam Dist. attended the programme. Around 150 No's farmers attended the training Programme.
- Organized the three days farmers training programme on “Advanced Cashew Production Technology” at TTDC, Etcherla and Pathapatnam villages of Srikakulam District from 26.03.2019 to 28.03.2019 sponsored by Directorate of Cashewnut and Cocoa Development, Kochi, Kerala. Dr. K. Dhanumjaya Rao, Principal Scientist (Hort) & Head, Sri K. Umamaheswara Rao Scientist (Hort.) and Dr. B. Nagendra Reddy, Scientist (Ento) delivered the different topics on Cashew Production Technology, Crop Protection and Post-Harvest Management



- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head, organized the training programme on Cashew at Miliyaputti, Srikakulam Dist. on 08.05.2018 sponsored by Directorate of Cashew Research (DCR), Puttur under Tribal Sub Plan. Sri S.A. Balasubramanyam, ADH Tekkali and Smt B. Uma Bharani, H.O. Miliyaputti attend the training programme.
- Dr. B. Nagendra Reddy, Scientist (Ento) organized one District level Training programme on Advanced production technology of cashew at Gurugumilli village, ButtayagudemMandal, West Godavari on 19.05.2018, sponsored by Directorate of Cashew Research (DCR), Puttur under Tribal Sub Plan. Sri Y. Anthoni Project Director, PARD NGO, Sri. M. Vijaya Kumar Project Manager, PARD NGO, Sri. R. Yacob Project Coordinator, PARD NGO and K. Raju MPEO Buttayagudem, Department of Horticulture attended the programme and Horticulture consultants and 100 tribal farmers were attended the programme, they were explained about cashew production technology and pest and disease management in cashew.
- Organized Awareness Programme on Cashew production technology at Gurugumilli (v), Buttayagudem (Mn) of West Godavari Dist on 04.10.2018 and distributed the cheques for inputs to the beneficiaries under Tribal Sub Plan. Representation from PARD an NGO taken active part.



Farmers training programmes organized by Cashew Research Station, Bapatla

HORTICULTURAL RESEARCH STATION, KOVVUR

A one-day training programme on 'Nematode Problems in Horticultural crops, Nurseries and their Management' was organized jointly by HRS, Kovvur, AICRP (Nematodes), ICAR- IARI, New Delhi and Department of Horticulture, Andhra Pradesh at GirijalaKrishnaprasadKalyanaMandapam, Kadiyam, Rajahmundry on 08.06. 2018. The workshop was attended by nearly 180 participants comprising of progressive farmers and nurserymen from Kadiyam and Kadiyapulanka. The resource persons were Dr. Raman K. Walia, Project Coordinator, AICRP Nematodes; Dr. J. DilipBabu, Director of Research, DrYSRHU, Venkataramannagudem; Dr. K. Poornima, Head, Department of Nematology, TNAU,





Coimbatore; Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Horticultural Research Station (HRS), Kovvur; Dr. A. Snehalatha Rani, Scientist (Plant Pathology), HRS, Kovvur; Dr. NBV ChalapathiRao, Senior Scientist (Entomology), HRS, Ambajipeta; and Dr. K Kranti KVVS, Scientist, AICRP Nematodes, IARI, New Delhi. Dr. K. Mamatha, Senior Scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.), HRS, Kovvur, Shri.MarganiSatyanarayana, MPP, Kadiyammandal, East Godavari District; Shri.PallaSubrahmanyam, President, Indian Nurserymen Association, Kadiyam; Shri.PullaSatyanarayana, President, Kadiyam Nurserymen Association, Kadiyam and Shri.BoppanaVenkataRao, REAC member, Dr.YSRHU, Venkataramannagudem participated in the programme.

CITRUS RESEARCH STATION, PETLUR

Sl. No	Date	Training programme	Place	No. of farmers attended	Organized by	Name of the scientist
1	13-2-2019	Improved practices in acid lime cultivation	Nellore	50	ATMA, Nellore	Dr. M.G.BalaHussaini, Senior scientist (Hort.)
2	22-02-2019	Cultivation of Horticultural crops	KVK, Periyavaram	50	ATMA, Venkatagiri	Dr. M.G.BalaHussaini, Senior scientist (Hort.)

- Dr.B.GovindaRajulu, Principal Scientist & Head, CRS, Petlur, participated in RythuSadassuprogramme of RHWEP students. Farmers from different villages like Vallivedu, Venkatagiri, Periyavaram and Busapalem had attended this programme and RHWEP students arranged exhibition on different Horticultural crop production practices on 30.10.2018 at Vallivedu (V), Venkatagiri (M), SPSR Nellore (Dist).
- KisanDiwas On 23.12.2018, Dr. B.Govindarajulu, Principle Scientist & Head, CRS Petlur, participated in ADA,Venkatagiri and farmers from different villages assembled to celebrate KISAN DIWAS at KVK, Periyavaram. Mr. D.VinodNaik, Research Associate (Agril. Extension), KVK- Periyavaram coordinated the programme.
- on 07.02.2019. Dr. B. Govindarajulu, Principle Scientist& Head CRS, Petlur has demonstrated the mass multiplication of TrichodermaViride and also demonstrated Bordeaux mixture and Bordeaux paste preparation and Dr. P.Pratap, Scientist (Agronomy), CRS, Petlur explained about the varieties of mango, acidlime to the RHWEP students. Other technical activities carried out at CRS, Petlur.
- On 13.02.2019, District level workshop on citrus wasconducted at CRS, Petlur by ATMA, Nellore. Dr B. GovindaRajulu, Principal Scientist (Pl. Path.) & Head, CRS,Petlur, Smt. AnandaKumari, Project Director, ATMA,Nellore, Sri. ChelikamSankar Reddy, REC Member, Dr.YSRHU, Sri. Koti Reddy, SFAC Member, Sri P. RajeswaraRao AMC Chairman, Venkatagiri, Sri. Subhani, ProjectDirector, APMIP,





Nellore have participated. Discussed about crop production plant protection of acid lime. The scientists of CRS, Petlur, KVK, Periyavaram and officials from Department of Horticulture and Agriculture. Nearly 250 farmers attended from different mandals of Nelloredistrict. Field visit and technical session were conducted for the benefit of the acid lime growers of SPSR Nellore dist.

- On 02.02.2019, Training programme on “Scientific Management of backyard poultry” for poultry farmers. Dr.B.GovindaRajulu, Principal Scientist & Head, CRS, Petlur addressed the farmers and distributed 10 nos. of one month old Rajasri poultry birds to 10 farmers as part of animal husbandry On-farm trial.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli 2 days district level seminar on Integrated crop management in spices crops was conducted with the financial assistance from CSS-MIDH implemented through DASD, Kozhikode, Kerala at Horticultural Research Station, Chintapalli on 30th-31st March 2019.

HORTICULTURAL RESEARCH STATION, MAHANANDI

- Horticultural Research Station, Mahanandi organized training programme on “Cultivation of Turmeric and Chilli” at Reddypalli (V) of Rudravaram (M), Kurnool (Dt.) on 17-05-2018. Principal Scientist (Pl.Path) & Head, Scientist (Hort.), Research Associate (Ento.) HRS, Mahanandi, Asst. Director of Horticulture-I, Kurnool, Horticulture Officer, Allagadda, MPEO’s and 150 farmers attended the training programme. During the meeting various aspects related to cultivation of Turmeric and Chilli were discussed. Different varieties of Turmeric were displayed during the meeting.
- Horticultural Research Station, Mahanandi organized training programme on “Cultivation of Turmeric and Chilli” at Vempenta (V) of Nandikotkur (M), Kurnool (Dt.) on 07-08-2018. Principal Scientist (Pl.Path) & Head, Scientist (Hort.), Research Associate (Ento.) HRS, Mahanandi, Horticulture Officer, Nandikotkur, MPEO’s and 130 farmers attended the training programme. During the meeting various aspects related to cultivation of Turmeric and Chilli were discussed. Different varieties of Turmeric were displayed during the meeting.

MANGO RESEARCH STATION, NUZVID

Dr.R.Rajyalakshmi, Sr.Scientist(Hort), Dr.B.K.M.Lakshmi, Scientist(P.P), Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid imparted training to executives of coromandal international limited, Vijayawada on Mango crop best management practices at Mango Research Station, Nuzvid on 15.12.2018.

POST HARVEST TECHNOLOGY RESEARCH STATION, V.R.GUDEM

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is demonstrated the functioning of processing machinery, ripening chambers and value added products at integrated pack house unit to **students of B.Sc. (Hons) Horticulture (53 No.) from Sri Krishna**





devaraya College of Horticultural Sciences, Ananthapuramu District visited on 16.05.2018.

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of processing machinery at integrated pack house unit to **B.Sc. Agriculture students (62 No.) from J .C. Diwakar Reddy College of Agriculture, Ananthapuramu** District visited on 22.05.2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of processing machinery, ripening chambers and value added products at integrated pack house unit to **SatishNagaraji, Manager Digital Agriculture (M&E and tools) from ICRISAT, Hyderabad** visited on 30.05.2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is demonstrated the functioning of processing machinery, ripening chambers and value added products at integrated pack house unit to **students of B.Sc. Agriculture (53 No.) from College of Agriculture, Rajamahendravaram, East Godavari** District visited on 14-06-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of guava grading machinery to **Sri. M. Ravi Teja, Guava Farmer from Ramannagudem, Tadepalligudem, West Godavari** district visited on 26-07-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is demonstrated the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **P. Rini, Horticulture Officer, along with farmers (No.54) from Rajanagaram, East Godavari** visited on 08-08-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **Dr.K. AtchuraRaju, Scientist (TOT), DATTC, from Ghantasala, Krishna** District visited on 28-8-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is demonstrated the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **Horticulture IInd B.Sc students (No. 47) from College of Horticulture, Parvathipuram, Vizianagaram** District visited on 28-08-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is demonstrated the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **Horticulture 2nd year B.Sc students (No. 86) from College of Horticulture, Anantharajupetapeta, Kadapa** district visited on 03-09-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of grading and sorting machinery at integrated pack house unit to **Dr. SrikanthBabu, Project coordinator, World vegetable centre, Hyderabad** visited on 14-9-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **G.RamaRajuGaru, formerly T.T.D board chairmen, Bhimavaram, West Godavari** District visited on 23-10-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of processing machinery, ripening chambers and value added products at integrated pack



house unit to **farmers (25 no.) from Kandukuru, Prakasam District** visited on 25-10-2018.

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explained the functioning of processing machinery, ripening chambers and value added products at integrated pack house unit to **O. Naga Raju, entrepreneur from TadikalaPudi, Kamavarapukota, West Godavari District** visited on 30-10-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated the functioning of processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **farmers (30 no.) from Kambham, Prakasam district** visited on 03-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **Dr.K.ShankaraRao, DM&HO West Godavari district** visited on 12-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **Deepthi, Horticulture Officer along with farmers (40 no.) from Pamarru and Giddaluru, Prakasam district** visited on 14-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit and value added products prepared at fruit and vegetable processing unit to **A. Siva, Horticulture Officer along with farmers (50 no.) from Nathavaram, Visakhapatnam district** visited on 17-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained value added products prepared at fruit and vegetable processing unit to **Ch.V.V.Satyanarayana, Head master, ZP High School, along with teaching staff (24 no.) from Tadepalligudem, West Godavari district** visited on 18-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **R.Hema, Horticulture Officer along with farmers (37 no.) from Agiripalli, Krishna district** visited on 20-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **farmers (40 no.) from Visakhapatnam district** visited on 28-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit and value added products prepared at fruit and vegetable processing unit to **G.Ramesh, Horticulture Officer along with farmers (50 no.) from Korukonda, East Godavari district** visited on 30-11-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **M.Bhargav, Entrepreneur from Tanuku, West Godavari District,** visited on 05-12-2018.





- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit and value added products prepared at fruit and vegetable processing unit to **Dr. G. Kranthi Rekha, Assistant Professor along with M.Sc Horticulture, P.G Students (3 No.) from College of Horticulture, Venkataramannagudem** visited on 07-12-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **N.Sujatha, Horticulture Officer along with farmers (40 No.) from Pithapuram East Godavari District** visited on 12-12-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained about functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit and value added products prepared at fruit and vegetable processing unit to **team from Japan Students** visited on 13-12-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head explained about functioning of cold storage chambers and pre – cooling chamber at integrated pack house unit to **Malavika, M.Sc Horticulture, student on her exposure visit programme from Bangalore** visited on 02-01-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained the functioning of processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **Diploma Students (39 No.) from S. K. P. P. Horticultural Polytechnic, Ramachandrapuram, East Godavari District** visited on 04-01-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained about the functioning of processing machineries and value added products prepared at fruit and vegetable processing unit to **Dr. Krishna, Professor, and his team from Central Food Technological Research Institute (CSIR-CFTRI), Mysore, Karnataka** visited on 22-01-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated the functioning of processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **G.P.Ranga Rao, entrepreneur from Unguturu, West Godavari District** visited on 05-02-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained the functioning of processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **B.Amani, MPEO (Horticulture) along with farmers (25 No.) from Srikakulam District** visited on 08-02-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **M.Anusha, Horticulture Officer, along with farmers (52 No.) from Rajamahendravaram, East Godavari District** visited on 13-02-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **MBA Students (62 No.) of Venkateswara Institute of**



Science and Technology college from Venkataramannagudem, West Godavari District visited on 19-02-2019.

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, demonstrated about the preparation of value added products from fruit and vegetable at Post harvest technology research station to the **students (56 No.) of Narayana English Medium School from Niladripuram, West Godavari District** visited on 20-02-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained about the functioning of machineries at fruit and vegetable processing unit and value added products made at Post harvest technology research station to **Students (20 No.) of S.V.K.P & Dr. K. S Raju Arts & Science from Penugonda, West Godavari District** visited on 27-02-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained the value added products of fruits and vegetables prepared at Postharvest technology research station and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **Sri. B.D Gohil, IAS, Gujarat, Chief Election Observer for Eluru** visited on 19-03-2019.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explained fruit sorting and grading machinery and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **farmers (62 No.) from Koyyalagudem, West Godavari District** visited on 19-03-2019.

D. TRAINING PROGRAMMES PARTICIPATED

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

V Deepthi, Scientist (Agril extension) and Sri G Shali Raju, Scientist (Agril Entomology) attended ZREAC meeting at Regional Agricultural Research Station, Maruteru conducted by ANGRAU on 24.04.2018 and discussed about the seasonal and crop conditions prevailing in KVK operational areas in the district.

On 02.05.2018 Scientists of KVK, Venkataramannagudem Attended Kisan Kalyan karyasala programme at Gopannapalem, Chintalapudi, Bhimadole, ITDA, K.R.puram and Bhimavaram divisions organized by ATMA, W.G.District. In this programme Scientists explained about various activities of KVK, V.R.Gudem, released publication on Doubling of Farmers income, interacted with the farmers during Farmer – Scientist interaction session, later facilitated innovative farmers of respective divisions.



Dr.E.Karunasree, Senior Scientist & Head, KVK, Venkataramannagudem has participated Advocacy meeting of MSSRF on Need and Scope for Farming system for Nutrition in Andhra Pradesh on 21st May, 2018 at the Gateway Hotel, M.G.Road, Vijayawada.

Dr. E. Karunasree, Senior Scientist & Head, Dr. K. Venkata Subbaiah, Scientist (Horti), Sri. G. Shali Raju, Scientist (Ento), Dr. V. Deepthi, Scientist (Agri Extn), Dr. A. Devivaraprasad



Reddy, Scientist (Fishery Sci.), and Dr. T. Vijaya Nirmala, Scientist (Vet. Sci.) of KVK, Venkataramannagudem has attended and presented the Action Plan for the year 2018-19 during the Annual Action Plan meeting of KVKs, A.P. at RARS, Guntur on 21.05.2018 and 22.05.2018.



KVK, Venkataramannagudem conducted World Honey bee day in collaboration with Department of Horticulture & Agricultural Technology Management Agency (ATMA) on 20.05.2018 at TTDC, Meeting Hall, Vatlur. In this programme Sri.Mohammad Hasim Shariff Addl.Joint Collector, W.G.District attended as chief guest. Dr.J.Dilip Babu, Director of Research, Dr.R.V.S.K.Reddy, Director of Extension and Dr.A.Sujatha, Dean of Student Affairs, Dr.Y.S.R.HorticulturalUniversity, Venkataramannagudem attended as guests of honour and explained about importance of honey bees in pollination of crops, various bee keeping related activities carried out by KVKs of Dr.YSRHU and released publication on Importance of honey bees in horticultural crops for enhancing higher yield. Later Dr.A.Sujatha, Dean of Student Affairs delivered a lecture on Key factors in Apiculture - Bee Pasturage and plant protection measures, Sri G. Shali Raju, Scientist (Ento.), KVK, V.R.Gudem delivered a lecture on Bee keeping for the Beginners & Bee keeping as an income generating enterprise and also arranged exhibiton stall on Apiculture.

Dr. K. Venkata Subbaiah, Scientist (Hort), KVK, Venkataramannagudem attend as a resource person to training program on improved vegetable cultivation at gopalapuram on 19.06.18.



On 29.06.2018 G.Shali Raju Scientist (Entomology) KVK, V.R.Gudem attended Training and Visit (T & V) monthly workshop for the month of June, 2018 for W.G District at Andhra Pradesh Rice Research Institute & Regional Agricultural Station (APRRI & RARS), Maruteru. In this programme discussed about various issues pertaining to conclude *Rabi*, 2017-18 results and recommended varieties for ensuring Kharif, 2018.

The Annual Zonal Work Shop of KVKs in ICAR-ATARI, Zone – X was held from 20th to 22nd September, 2018 at CRIDA Campus, Hyderabad. Heads of KVKs, VR Gudem, Pandirimamidi, Periyavaram and Vonipenta have participated and presented the work done for the year 2017-18. Dr. R.V.S.K. Reddy Director of Extension chaired three technical sessions and reviewed the KVKs work done and given suggestions. The new building constructed as ATARI-Annexe was also inaugurated by Dr. Trilochan Mohapatra, Hon'ble Secretary DARE and DG ICAR, New Delhi on 21st September. Posters and products were displayed by all the KVKs. KVK Pandirimamidi has won the best poster award and KVK Venktaramannagudem has received best TSP KVK in the Zone.



Dr.T. Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem attended three days “Training of trainers Programme” as Master trainer for Small poultry farmer job role from 25.09.2018 to 27.09.2018 organised by



Agriculture Skill Council of India in collaboration with ICAR-ATARI and PJTSAU, Hyderabad, Telangana state.

Dr. A. Devivaraprasad Reddy, Scientist, KVK, Venkataramannagudem and Mr. K. Mohan Rao, Progressive farmer, Buttaigudem Mandal, has participated in the Agriculture Conclave on 05.10.2018 as a part of the India International Science Festival (IISF), 5-8 October 2018 at Indira Gandhi Pratishthan, Lucknow.



Dr. E. Karuna Sree, Principal Scientist & Head, Dr. A. Devivaraprasad Reddy, Scientist and Dr. T. Vijaya Nirmala, Scientist has visited Agricultural Museum, Directorate of Extension, Indira Gandhi Agricultural University, Raipur, VNR Nurseries, Raipur, KVK, Jagdalpur, Baster, KVK, Dhandewada. The above staff of KVK VRgudem has visited the national awardee KVKs.

On 4.10.2018 G.Shali Raju Scientist (Entomology), KVK, Venkataramannagudem attended polampilustondi programme as a resource person at Pentapadu village organised by Department of Agriculture. In this programme explained about importance & use of organic manures and bio-fertilisers and Pest & Disease management in Paddy.



Dr. A. Devivaraprasad Reddy, Scientist (Fishery Science) brought the Amur Common Carp fish seed from Fisheries Research Information Center (Inland), KVAFSU, Hesaraghatta, Karnataka for conducting the NFDB sponsored program on Growth and performance of improved fish varieties i.e. Jayanthi rohu and amur common carp and was released in the KVK Instructional farm and also farmer ponds on 27.10.2018.

On 06.12.2018 Sri. G.Shali Raju, Scientist (Ento), KVK, Venkataramannagudem attended Training programme on Rugose Spiralling whitefly management by using bio control agents at Kalvalapalli village organised by Department of Horticulture, HRS, Ambajipet and NBAIR, Bangaluru.



On 08.01.2018 & 09.01.2018 Dr. A. Sujatha, Dean of Student Affairs, Dr. YSRHU and G. Shali Raju, Scientist (Ento), KVK, Venkataramannagudem visited Integrated Beekeeping Development Centre (IBDC) at Tamil Naidu Agricultural University (TNAU), Coimbatore to get preview and exposure to establish the IBDC/ COE on Beekeeping at Dr. YSRHU.



On 14.02.2019 G.Shali Raju, Scientist (Entomology), KVK, Venkataramannagudem attended one day skill training programme on mass production of *Isariafumosorosea* at HRS, Ambajipeta



Dr. A.Devivaraprasad Reddy, Scientist (Fishery Science) has participated in the Aqua Tech Expo on 17.02.2019 conducted by the Aqua Tech group at C.N.R. Gardens A/c, Eluru Road, Kaikaluru, Krishna District, Andhra Pradesh on 16.02.2019 and 17.02.2018.

On 21.02.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) attended as resource person to the training program on Kadaknathbirds importance and its rearing as backyard poultry at Bhimadolu village organised by ATMA, Eluru. In this program, Assistant Director (Animal Husbandry), AD (Agriculture) and Agriculture Officer (AO), Bhimadolu were participated.



On 11.03.2019, Dr.T.Vijaya Nirmala, Scientist (Veterinary Science), KVK, Venkataramannagudem attended as a resource person to the training on importance and rearing of Kadaknath birds at Kurellagudem village, Bhimadol mandal organised by Department of Agriculture and ATMA, Bhimadol.

On 16.03.2019, Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) attended as resource person to the training program on Cultivation of fodder crops and preservation methods organised by Buffalo Research Station, SVVU, Venkataramannagudem and explained about improved fodder varieties and its cultivation to different soil conditions and irrigation facilities.



KRISHI VIGYAN KENDA, PANDIRIMAMIDI



On 29.03.2018 Sri K.C.Bhanu Murthy, Scientist (Horticulture) and Miss SrividyaRani.N, Scientist (Extension) from KrishiVigyan Kendra, Pandirimamidi attended valedictory session of Entrepreneurship Awareness Camp organized by ITDA-Chintur and Andhra Pradesh State Skill Development Corporation at Youth Training Centre, Yetapaka. Beneficiaries for the training programme to be conducted by

KVK for the un-employed youth have been finalized and the scientists for presented with mementoes by Sri.Prashanth, President, APSSDC the closing session. In this programme Sri Abhishikth Kishore attended as chief guest and motivated the tribal youth to take up the activities for their self-employment.



From 24.03.2018 to 25.03.2018 Dr. S.Adarsha Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi



participated in two days National level seminar on **Awareness, motivation and technology transfer for development of Scientific beekeeping in the country** organised by Dabur India Ltd. in collaboration with Dr. YSRHU, Venkataramannagudem sponsored by National bee board, Govt. of India. An exhibition was arranged at the seminar for explaining the beekeeping activities of Dr.YSRHU Krishi Vigyan Kendras Venkataramannagudem and Pandirimamidi. Sri Chiranjiv Choudary, IFS., Commissioner of Horticulture & VC of Dr.YSRHU addressed about the importance of beekeeping in various crops as chief guest in this program. Dr. RVSK Reddy, Director of Extension, Dr. YSRHU, Dr. J. Dilip Babu, Director of Research, Dr. YSRHU, Dr. A. Sujatha, DSA, Dr. YSRHU, Dr. B. L. Sarswat, Executive Director, NBB, Dr. JLN Sastry, DRDC, Dabur India Ltd., and successful beekeeper Sri Narasimha Rao attended as guests for this program. Conservation of wild bees, scientific approach in handling wild bees, current problems faced in beekeeping were discussed at the seminar.

On 13.04.2017 Dr. A. Srinivas, Scientist & Head, and Scientists from Krishi Vigyan Kendra, Pandirimamidi attended ZREAC meeting of Coastal Zone organized by Dr. YSR Horticultural University under the chairmanship of Dr. BVK Bhagavan, Zonal Research Head, Coastal zone-1. In this programme Sri Peela Govindarao Rao, MLA, Anakapalli & Board member



attended as chief guest and addressed the farmers, scientists and department officials regarding farming situations in Vishakhapatnam district and further actions to be taken with the help of line departments and allied sectors. Dr. Ramana Reddy ADR, RARS, Anakapalli, Dr. L. Naram Naidu Zonal Research Head, Coastal zone-2, Smt. Shailaja ADH, Vishakhapatnam, Smt. Anuradha ADH, Naraseepatnam, and Karunanidhi REC member attended as guest of honour for this program. Dr. J. Dilip Babu, Director of Research, Dr. YSRHU and Dr. R. V. S. K. Reddy, Director of Extension, Dr. YSRHU addressed the scientists about research and extension gaps in 2017-18 and to fulfill them in 2018-19 & interacted with the farmers on various horticultural crops. All the HRS and KVKs of coastal zone presented their work done report for the year 2017-18.

KRISHI VIGYAN KENDRA, VONIPENTA



On 02.05.2018, Dr. A. Srinivas, Sr. Scientist & Head, Sri. K. C. Bhanu Murthy, Scientist (Horticulture), Dr. S. Adarsha, Scientist (Entomology), Srividya Rani. N, Scientist (Extension) and Sri. P. Raja Sekhar, Scientist (SS&AC) from KVK, Pandirimamidi attended Kisan Kalyan Karyashala programme organised by ATMA at KVK-Pandirimamidi, Rampachodavaram, Addategala, Korukonda and Jaggampeta mandals. Scientists interacted with the farmers regarding the activities of KVK, Pest and disease management in different crops and improved management practices, IFS models for doubling the farmers income



On 14.05.2018, Dr. A. Srinivas, Sr. Scientist and Head, KVK, Pandirimamidi attended Cashew Promotion Mela organized by SERP Govt of AP & ASI-NGO at Rampachodavaram and delivered guest



speech on Cashew management practices and marketing. Smt.Rajeshwarigaru MLA, Sri Babu Rao Naidu, IAS, MD, GCC, Sri Ramanjaneyulu DD-SERP, Govt. of AP, Sri Punith MD-ASI, Sri Seetamsetti Venkateshwarlu EX-MLA, Dept and ITDA officials were attended. More than 1000 tribal Cashew farmers participated from 4 agency mandals

On 16.05.2018, Dr.A.Srinivas, Sr.Scientist & Head and Scientists attended Pre Action Plan meeting at Krishi Vigyan Kendra, V.R.Gudem. Scientists presented their work done for the year 2017-18 and action plan for the year 2018-19. Dr.R.V.S.K.Reddy, Director of Extension chaired the session and suggested changes to be made in the presentations.



On 17.05.2018 Dr. V.Damodar Naidu, Vice Chancellor, ANGRAU visited Krishi Vigyan Kendra, and HRS, Pandiriamamidi. Interacted with scientists of KVK & HRS, regarding the activities and trainings taken up by them, visited demonstration units of KVK & HRS, Palmyra processing unit and appreciated the activities taken by KVK and HRS for the farming community.

From 21.05.2018 to 22.05.2018, Dr.A.Srinivas, Sr.Scientist and Head, Dr.S.Adarsha, Miss Srividya Rani.N, Sri.P.Raja Sekhar and Sri.K.C.Bhanu Murthy, Scientists from KVK, Pandiriamamidi attended Annual Action Plan workshop at LAM-Guntur organized by Director, ICAR-ATARI, Zone-X, Hyd and ANGRAU. Presented the work done for the year 2017-18 & action plan for the year 2018-19 and suitable suggestions were



taken by the officials regarding the implementation of the Action Plan 2018-19. The workshop has inaugurated by Dr.V.Damodar Naidu, VC-ANGRAU and given suggestions for implementation of technical programmes. In this programme Dr.Y.G.Prasad, Director-ICAR-ATARI a Dr.R.V.S.K.Reddy, Director of Extension, Dr.J.Dilip Babu, Director of Extension, Dr.Bhaghavan, PS & Zonal Research Head, Zone-II & Dr. K.T.Venkataramana, PS & Zonal Research Head, Royalaseema Zone from Dr.YSRHU, Dr.P.Rambabu, DE, ANGRAU, ADR's, Zonal Research heads, Programme Co-ordinators, Scientists from KVK's from AP participated.



Dr. A.Srinivas, Senior Scientist & Head and Dr. S.Adarsha, Scientist (Entomology) from Krishi Vigyan Kendra, Pandiriamamidi attended the World Honey Bee Day Program conducted on 24.05.2018 by ITDA and NABARD, East Godavari District at Youth Training Centre, Maredumilli. Sri. Vinod Kumar, IAS, Sub-Collector, Rampachodavaram attended as chief

guest for this program and explained the importance of the Honey Bee Keeping in the agency area and requested Krishi Vigyan Kendra, Pandiriamamidi for technical support as already in the process. Krishi Vigyan Kendra, Pandiriamamidi exhibited a stall on beekeeping activities for creating awareness among the tribal people and tribal's were enlightened about the scope of beekeeping in agency area. Dr.A.Srinivas, Sr.Scientist & Head has explained the process of grounding the units & Dr. Adarsha, Scientist (Ento) has conducted technical session on Honey bee keeping. In this programme Sri.K.V.S. Prasad, AGM, NABARD, Kakinada, Sri.B.V.Subramanyam, District manager, Lead bank, Sri. Satyam Naidu, APD, Velugu, Krupa



nandam GCC, Manager-ITDA, Srinivasa Rao, Small, micro and medium enterprises development institute, MRO & MPDO- Maredumilli, other department officers and 150 tribal people attended the program.



On 25.05.2018, Dr.A.Srinivas, Sr.Scientist and Head, Dr.S.Adarsha, Scientist (Entomology), Miss Srividya Rani.N, Scientist (Extension), Sri.P.Raja Sekhar, Scientist (SS&AC) from KVK, Pandirimamidi attended the Sokulagudem village of Rampachodavaram mandal agency area of East Godavari district as a part of House Hold Survey/village adaption for selecting as **Doubling Farmers Income** village. In this survey Dr. A. Srinivas addressed the farmers regarding role of the KVK, ongoing activities and discussed with the farmers regarding the adoption of villages & all the scientists were collected the information of 50 households and said that the tribal farmers are going to implement the activities of KVK to double the farmers income. In this programme Vice-President SuntruChinnaya, Anganwadi Teacher, SHG members and 70 farmers were participated.



On 04.06.2018, Dr.A.Srinivas, Sr.Scientist& Head, KVK, Pandirimamidi attended Nava NirmanaDeekshaprogramme at Gram Panchayat office, Rampachodavaram. Dr.A.Srinivas, addressed the farmers regarding the activities of KVK, Pandirimamidi, the Horticultural and agricultural activities taken up by KVK and how they are helping the farming community. In this programme Smt.Niranjani Devi, Sarpanch, Rampachodavaram, Sri.Ramoji, MRO, RCVM and 78 farmers were participated.



On 28.06.2018, Miss Srividya Rani.N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi, attended Eruvaka programme organised by Department of Agriculture at B.V.Kota village of Rampachodavarammandal. Interacted with the farmers regarding the KVK activities & training programmes organized by KVK. In this programme Smt.Vanthala Rajeswari, MLA, Rampachodavaram attended as chief guest, interacted with the farmers regarding the importance and initiation of *Kharif* crops. Sri.A.Srinivas, ADA, RCVM, ZPTC and MPTC members, Sri.Prabhakar, AO, RCVM, ATMA, BTMs, ATMs and 76 farmers attended the programme.



On 18.07.2018 Dr.A.Srinivas, Sr.Scientist& Head from Krishi Vigyan Kendra, Pandirimamidi addressed a group of members from Lee Kuan Yew school of Public Policy Asia Competitiveness Institute-Singapore who visited ITDA-Rampachodavaram to know the tribal development activities in the agency area also visited Cage Aquaculture at Bhupatipalem Reservoir, interacted with Tribal Fishermen. Dr.A.Srinivas, Sr.Scientist& Head, explained KVK activities conducted with ITDA-Cage culture, Honey bee units, Cashew grafting, Rubber Processing, Value addition, other income generating activities & presented a brief note to the members. The Singapore members were appreciated KVK activities and expressed that they will support to strengthen the activities in future.



On 21.07.2018 & 22.07.2018 Dr. S. Adarsha, Scientist (Entomology), Krishi Vigyan Kendra, Pandirimamidi attended seven days 'Training program on Scientific beekeeping' as resource person to deliver lectures **on Pesticide Poisoning to Honey Bees, their Management & Production and Collection of Quality Beehive Products** at BCT-KVK, Vishakhapatnam. Practical session on comb foundation sheet preparation and its use in multiplication of colonies was dealt. Sri. J. Narasimha Rao, President Apiary and beekeepers Co-operative society LTD., Ponnur and Dr. Nagendra Prasad, Scientist (Plant protection), BCT-KVK, Vizag and 10 farmers participated in the program.



On 01.08.2018, Krishi Vigyan Kendra, Pandirimamidi in convergence with TATA Trust released Fish spawn variety Catla and Rohu in I.Polavaram, Bandapalli, Usirijonnala & Tamarapalli villages covering of 33 individual farmer ponds & total 1.63 crores fish spawn were stocked. Dr. A. Srinivas, Sr. Scientist & Head, Krishi Vigyan Kendra, Pandirimamidi explained the nursery management practices like feed and water management & pond manuring etc. Sri. Padmakar, State Co-ordinator, TATA Trust has explained the role of TATA Trust & on-going programmes. In this programme village Sarpanches and 33 farmers were participated.



On 02.08.2018, Dr. R. V. S. K. Reddy, Director of Extension, Dr. YSRHU, V. R. Gudem has visited the beekeeping units at Rampa village of Rampachodavarammandal established under SCA-TSP, ITDA, Rampachodavaram. Director of Extension has suggested for division of colonies for further multiplication. Dr. A. Srinivas, Sr. Scientist & Head, Dr. S. Adarsha, Scientist (Entomology), Miss Srividya Rani. N, Scientist (Extension) participated in the visit.

On 02.08.2018, Dr. R. V. S. K. Reddy, Director of Extension, Dr. YSRHU, V. R. Gudem, laid foundation stone for store room under small nursery sponsored by Commissioner of Horticulture, AP. under MIDH & Fruit and Vegetable processing unit. Provided Black gram seed var. TBG-104 under CFLD, Pulses to D. V. Kota farmers of Maredumillimandal. Under TSP, Backyard Poultry – Aseel birds were provided to Sokulagudem and I. Polavaram villages of Rampachodavarammandal of East Godavari district. In this Dr. A. Srinivas, Sr. Scientist & Head, Scientists from KVK, Pandirimamidi, 10 tribal women SHG members and 10 farmers were participated.



On 07.08.2018, Dr. A. Srinivas, Sr. Scientist & Head & Miss Srividya Rani. N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi had visited the Vedurupakala village of RHWEP Students. The students have represented the Resource map of Vedurupaka village under the guidance of KVK, Pandirimamidi Scientists. They have shown the resources available in their village



like School, bus stand, post office, water resources like tank, borewells, fields etc to know the major resources available, the resources which are lacking and knew the importance of the available resources. In this farmers from the respective village also participated and assisted in representing the Resource map.



On 09.08.2018 Krishi Vigyan Kendra, Pandirimamidi Scientists participated and exhibited a stall at Rampachodavaram High School on the occasion of International Tribal Day of World's Indigenous People organised by ITDA, Rampachodavaram. In the stall exhibited all the on-going activities of Krishi Vigyan Kendra like Cashew grafts, Honey Bee Unit, Cage Culture, Poultry, Goat and other activities. In this programme Sri.N.Chinarajappa, Deputy CM, Andhra Pradesh, Smt.Vanthala Rajeswari, MLA, Rampachodavaram, Sri. Reddy Subramanayam, Sri Babu Ramesh, Director, AP Tourism Board, Sri.SeethamSettiVenkateswarlu, Ex-MLA, Ramapachodavaram, Sri.Vinod Kumar, Sub-Collector & Project Officer, ITDA(In - charge), Rampachodavaram and other dignitaries also visited the stall and interacted with KVK, Scientists regarding various activities undertaken by KVK in the agency area. In this programme 753 tribal farmers were participated.



On 15.08.2018. 72nd Independence Day was celebrated in Krishi Vigyan Kendra, Pandirimamidi. Dr.A.Srinivas, Sr.Scientist & Head hosted the national flag and addressed the staff of KVK regarding the significance of celebrating Independence Day and also acknowledged regarding the rights and responsibilities of each individual towards the development of nation. In this programme Krishi Vigyan Kendra Scientists and staff were participated.

On 16.08.2018 and 18.08.2018, the RHWEP students have represented the Resource map and Village map of R.Errampalem village and Vedurupaka village under the guidance of Miss Srividya Rani.N, Scientist (Extension), KVK, Pandirimamidi. They have shown the resources available in their village like School, bus stand, post office, water resources like tank, borewells, fields etc and also the village map.



On 17.08.2018, Sri.P. Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi attended National Workshop on Millets organised by Indian Institute of Millet Research (IIMR), Hyderabad. Krishi Vigyan Kendra, Pandirimamidi has been selected as one of the cooperating centre by IIMR, Hyderabad to implement Cluster Frontline Demonstrations on millets especially Sorghum cultivation in the HAT zone of East Godavari district of AP. Sorghum seed was provided by IIMR in order to implement CFLDs on improved sorghum cultivars CSV-27 & CSH-16 in 500 acres under TSP-2018-19. The guidelines to implement CFLDs and Rabi action plan for 2018-19 were discussed by Dr. R.R. Chapke, Principal Scientist, IIMR, Hyderabad.



On 23.08.2018, RHWEP students from College of Horticulture, V.R.Gudem have represented the Village map and Venn diagram of R.Errampalem village under the guidance of Miss Srividya Rani.N, Scientist (Extension), Dr.Adarsha, Scientist (Entomology) & Sri.P.Raja Sekhar, Scientist (SS&AC), KVK, Pandirimamidi. They have shown the aspects regarding the details like houses, fields and road ways in village map and the resources were represented in the Venn diagram based on need, importance and distance from the village.



On 05.09.2018 Dr. R.V.S.K Reddy, Director of Extension, Dr. YSRHU, Dr. A. Srinivas, Principal Scientist & Head and KVK Scientists, Pandirimamidi has visited lemon grass variety Krishna and Palmrosa fields at I.Polavaram village of Rampachodavarammandal and interacted with farmer regarding the purpose and outcome of this intervention which is supported by CIMAP, Hyderabad on trial basis and suggested the farmer to follow the package of practices for its cultivation with technical support from KVK, Pandirimamidi.

From 17.09.2018 to 20.09.2018 Miss Srividya Rani.N, Scientist (Extension), KVK, PMD and Dr.V.Deepthi, Scientist (Extension), KVK, V.R.Gudem attended training programme in “e-extension in agriculture & allied activities” organized at MANAGE, Hyderabad. In this programme learnt regarding National e-governance plan, Internet of things, m-kisan portal, National informatics centre, mobile apps available for the farmers, how to develop mobile apps, how Digital India is helping the farmers in making the innovations in agriculture understandable, e-NAM, Kisan call centres etc. Some of the exercises like corner game and discussions were also done regarding ICT’s and its usefulness, role, promotion and challenges in e-extension. In the valedictory session Smt.V.Usha Rani, IAS, Director General, MANAGE, Dr.Bhaskar, Principal Scientist, IT, MANAGE distributed the certificates to the participants and taken feedback regarding the training.



From 20.09.2018 to 22.09.2018 Dr.A.Srinivas, Principal Scientist & Head from Krishi Vigyan Kendra, Pandirimamidi attended Annual Zonal Workshop at ATARI, Hyderabad. In this programme Dr.A.Srinivas presented work done for the year 2017-18, presented poster on cashew grafting technology, received Best Poster Award and CD was released on Cashew Grafting & Nursery Management by DG, DDG, ADG- ICAR, Govt of India in the presence of Director – ICAR, ATARI, Zone-X, Hyd, VCs of ANGRAU, PJTSAU & TANUVAS. Heads from all the KVKs of Zone-X attended and presented their work done for the year 2017-18.

On 27.09.18, Sri Bhanumurthy K.C, Scientist (Horticulture) and P.Rajasekhar, Scientist (SS& AC) of KVK, Pandirimamidi attended as resource person on improved management practices in cashew organized by SERP foundation at Gangavaram village and addressed the farmers on production practices, management of T-mosquito



bug, CSRB and importance of waste decomposer, its usage. In this programme, Sri. Ganesh, DCO, SERP foundation and 42 farmers participated.



From 15th September Swachhta Hi Sewa programme has been conducted by KVK, Pandirimamidi Scientists in on campus premises and off campus premises. Cleaning near the nursery, poultry shed, goat shed, farmers hostel etc has been done. Cleaning in public places like Veterinary hospitals, door to door campaigns in Maredumilli mandal, rallies in R.Errampalem by school students and by farmers in I.Polavaram, awareness and usage of waste decomposer technology, Elocution competitions on “Importance of cleanliness in their lifestyle” has been conducted for students and prizes were distributed. In this programme main focus was on awareness and importance of cleanliness in the present day era. RHWEP students, Polytechnique students, school students, farmers and other staff participated.

On 01.10.2018, Role play has been conducted by RHWEP students at Vedurupaka village of Gokavaram mandal on **Importance of Organic farming** under guidance of Miss Srividya Rani.N, Scientist (Extension), Krishi Vigyan Kendra, Pandirimamidi. In this they played roles of the farmers and Scientists, interpreted the action to the farmers in an understandable way to minimize the usage of pesticides, go for organic farming, use of IPM practices in crop protection and safety measures to be followed while spraying pesticides. In this programme RHWEP students and 25 farmers were participated.



On 03.10.2018 Miss Srividya Rani.N, Scientist (Extension) and Sri.P.Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi has taken the RHWEP students to All India Radio, Visakhapatnam as a part of vocational training on mass media services in RHWEP programme. In this programme the RHWEP students were briefed with the agricultural and allied programmes broadcasted through radio, how they are recorded and the timings etc., studio visit was also conducted. As a part of this students were shared their views on different topics related to agriculture, horticulture and allied activities which are useful to farmers and participated in group discussion on topics such as Swachhta hi sewa and pollution awareness & control. In this Programme Executive – All India Radio Station, Sri.Prashanthkumar lead the session for the students.



On 05.10.2018 RHWEP students under guidance of Miss Srividya Rani.N, Scientist (Extension), KVK, Pandirimamidi conducted Swachhta hi sewa activities in their village, met DWCRA, SHG members & interacted with them regarding their activities taken up in the village and how they are conducting meetings etc. Information centre was also kept in the village and making the farmer aware of the pest and disease infestation in the crops and suggest suitable recommendations which are seasonal based. In this school students, farmers and SHG members participated.





On 05.10.2018 RHWEP students under guidance of Miss Srividya Rani.N& Sri P.Raja Sekhar, Scientists of KVK, Pandirimamidi conducted Role play on Importance of cleanliness and maintenance of surroundings tidy under the theme of Swachhta Hi Sewa programme. In this RHWEP students presented it in the form of an act and pledge was also done by the farmers regarding Swachhta. Farmers and students participated in the activity.



On 15.10.2018, Custom Hiring centre was inaugurated at I.Polavaram village of Rampachodavaram mandal by SmtVantala Rajeswari, MLA, Rampachodavaram constituency and Dr.R.V.S.K. Reddy, Director of Extension, Dr.YSRHU, V.R.Gudem. This helps the farmers to use sprayers, weeders on rent basis with minimum charges which is helpful to the farmers as all the people cannot purchase on their own.

The custom hiring centre was also provided to Bandapalli village of Rampachodavarm mandal and Kunduluru village of Chintur mandal. Biscuit unit was also provided to I.Polavaram women farmers for standing and doing on their own. In this programme Dr.A.Srinivas, Principl scientist & Head, Dr.S.Adarsha, Srividya Rani.N, Raja Sekhar, Bhanu Murthy Scientists of KVK, PMD and farmers from I.Polavaram, Bandapalli and Kunduluru villages were participated.



On 16.10.2018, Dr.S.Adarsha, Scientist (Ento.) & Miss Srividya Rani.N, Scientist (Extension) rom Krishi Vigyan Kendra, Pandirimamidi had attended Mahila Kisan Diwas programme organized by Tanager company under ASI-NGO. Chief Guest Smt. Vanthala Rajeswari, MLA, Rampachodavaram attended the programme, addressed the gathering on importance of strength of women to the present society. Dr.S.Adarsha addressed the gathering regarding how to improve their status and generate livelihood income through value addition of cashew and millets etc. ZPTC, MPTC members and innovative women farmers were felicitated by Tanager members.

On 25.10.2018, Krishi Vigyan Kendra, Pandirimamidi has taken up new cashew plantation with BPP-8 and BPP-9 varieties in 10 acres at Doubling Farmer's Income (DFI) village i.e. I.Polavaram village of Rampachodavaram mandal. Sri Bhanumurthy K.C, Scientist (Hort.) coordinated the plantation program, explained the farmers about planting method and its aftercare.



From 27.10.2018 to 28.10.2018 Dr. A.Srinivas, Principal Scientist & Head and Dr. S.Adarsha, Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi participated and exhibited a stall on beekeeping activities of Dr. YSRHU in **Two days state level seminar on Awareness, Motivation & Technology Transfer for development of Beekeeping in Andhra Pradesh** organized by

Dr. YSR Horticultural University, V.R.Gudem and National Bee Board, Ministry of Agriculture and farmers welfare, Govt. of India.Padmasri Dr. Bibek Debroy, Chairman Economic advisory council to Prime minister (EAC-PM), Sri Chiranjivchoudhary, IFS Commissioner of



Horticulture & Vice chancellor, Dr.YSRHU, Dr. B.L Saraswath, Executive Director, NBB, Sri.K.Rajeswara Rao, Advisor EAC-PM, Beekeeping Development committee, inaugurated the program. University officers of Dr.YSRHUScientific staff of Dr.YSRHU and farmers from different districts participated in the program. On 28.10.2018 Dr. S. Adarsha Scientist (Entomology), KVK, Pandirimamidi gave a lecture on ‘‘Production and collection of quality bee hive products’’.



On 30.10.2018, Integrity Pledge was taken at Krishi Vigyan Kendra, Pandirimamidi on the occasion of Vigilance awareness week from 29th October 2018 to 3rd November 2018. The pledge was taken by KVK staff and RHWEP students under the concept My Vision-Corruption Free India. Since corruption has been one of the major obstacles to economic, Political and social progress of our country, we should realize that as an organization, we need to lead from the front in eradicating corruption and in maintaining highest standards of integrity, transparency and good governance in all aspects of our operations and in our working environment. In this programme Dr.A. Srinivas, Principal Scientist & Head, Miss Srividya Rani, Sri P.Rajasekhar, and RHWEP students participated in the programme.



On 09.11.2018 S.Adarsha Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi participated in polampilusthondi programme and created awareness on fall army worm in maize. Field visits were made and damage level of fall army worm in maize at vegetative stage of the crop was observed. Possible pest management practices that can be practiced in the starting stage to reduce the crop damage were explained.

On 13.11.2018 S. Adarsha, Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi attended as resource person for ‘**Awareness program on fall army worm in maize**’ organised by Department of Agriculture at Pudipally and Indukurupeta villages. Explained about the various stages of maize that is effected by maize, other host crops and possible management practices that can followed to reduce the damage. Praveen kumar, A.O, Devipatnam, Mahalaxmi, MPEO and farmers from Devaram, Indukurupeta and Pudipally villages participated the program.



P. Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi attended as resource person to an interactive workshop on Farmers Producer Organisations at ITDA, Chintur from 28.11.2018 to 29.11.2018. First day, Scientist has explained about the farmer’s oriented activities such as skill training programmes, KVK demonstrations on various crop production technologies etc. and agro-techniques for mitigating water stress condition of crops during drought under completely rainfed situation. Second day, conducted farmer-scientist interaction on pest and disease management and nutrient management in cotton and chilli. In this programme, Sri Mallikarjun





Rao, PHO, ITDA, Chintur, Sri Satyanarayana, APD, Velugu-TPMU, ITDA, Chintur, Sri Srinivas, MAO, Chintur other department officials and 85 farmers has attended.

On 27.12.2019 Dr.S.Adarsha, Scientist (Entomology) Krishi Vigyan Kendra, Pandirimamidi attended as resource person for delivering lectures on ‘Production and collection of quality bee hive products’ and ‘Pesticide poisoning to honey bees and their management’ in Skill development training program on “Beekeeping” at Krishi Vigyan Kendra, V.R. Gudem. Practical session on introduction of new queen to queenless colony was also conducted.



On 22.01.2019, Smt.Kothapalli Geetha, Member of Parliament, Araku Constituency visited Krishi Vigyan Kendra, Pandirimamidi. Dr. A.Srinivas, Principal Scientist & Head briefed the activities of KVK. M.P interacted with the farmers regarding the problems faced by them and said that the activities done by KVK for the tribals are good. More focus on organic vegetable cultivation, employment generation, providing rubber processing units should be done by KVK. She also visited the stalls arranged by KVK, Scientists regarding Bee-keeping, Soil testing laboratory, Cashew grafts, literature, cage culture, custom hiring centre, Goatery units. etc. in this programme KVK, Scientists Dr.S.Adarsha, Srividya Rani.N, P.Raja Sekhar and 65 farmers attended.

On 31.01.2019, P. Raja Sekhar, Scientist (SS&AC) and K.C.Bhanumurthy, Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi has visited banana orchards at Thimmapuram village of Addateegala mandal. During the visit scientists demonstrated the method of soil sampling and collected 10 composite soil samples from 10 acres of banana crop in the village and also explained the importance of soil testing for use of right quantity of fertilizers and correction of other nutrients if any.



On 24.02.2019, the programme on Pradhan Mantri Kisan Samman Nidhi has been live telecasted at Krishi Vigyan Kendra, Pandirimamidi. Dr.D.Manohara Prasad, Principal Scientist& Head addressed the farmers regarding the activities taken up by KVK skill oriented traning programmes. Sri Devanad Kumar, Assistant Director of Horticulture, Rajamahendravaram& Sri Satyanarayana, Project Horticulture Officer, ITDA – Rampachodavaram addressed the farmers regarding the scope of Pradhana Mantri Kisan Samman Nidhi scheme. In this programme Dr.S.Adarsha, Scientist (Entomology), Sri.P.Raja Sekhar, Scientist (SS&AC) & Sri K.Prabhakar, MAO-Rampachodavaram, and 85 farmers participated.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Name of Staff	Title	Dates	Duration	Organized by
---------------	-------	-------	----------	--------------





Dr.P.Manjari	Climate change led abiotic and biotic stress in farm animals and amelioration with nutritional and physiological approaches	01.11.2018-21.11.2018	21 days	ICAR-NIANP
--------------	---	-----------------------	---------	------------

On 11.12.2018 Dr.L.Ranjith Kumar, Scientist (Entomology), Krishi Vigyan Kendra, Periyavaram attended as a resource person in farmers training programme on “Integrated pest and disease management in Chilli & Paddy ”



KRISHI VIGYAN KENDRA, VONIPENTA

On 14.04.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) have attended Farm Innovators Meet-2018 organized by ATARI at CRIDA campus, Hyderabad. In this event Farm Innovators of different states viz., Andhra Pradesh, Tamil Nadu, Telangana, Pondicherry were attended and presented their Innovation/New practice in the farm. On behalf of KVK Vonipenta, Dr. YSRHU, Sandeep Naik along with farmer S. Venkataramaiah of Adireddipalli village of Mydukur Mandal participated



in the Farm Innovators Meet-2018 and presented both poster and Power point presentation on the innovative practice of ‘**Organic Cultivation of Papaya with Turmeric Intercropping**’. The event was chaired by dignitaries Dr. A.K. Singh (DDG), ICAR, Dr. Y.G. Prasad, Director (ATARI, Zone-X), Dr. Raji Reddy, Director of Extension, PJTSAU. The event was successfully ended with appreciation awards given to the Farm Innovators who participated in the event.



On 02.05.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), Dr. V. Nagarjuna, Research Associate (Soil Science), Dr. J. Yoga Narasimhulu Naidu Research Associate (Extension) and Dr. V. Yugandhar, Research Associate (Horticulture) have attended the Kisan Kalyan Karyashala programme under Grama Swaraj Abhiyan conducted by ATMA and Department of Agriculture at Mydukur, Badvel, Porumamilla and Proddatur Agricultural subdivisions of

Kadapa district respectively. The scientist explained the importance of summer ploughing, seed treatment, soil sampling, soil test based fertilizer application and best management practices to be followed in agricultural and horticultural crops for doubling farmers income by 2022.

On 29.05.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), attended District Farmers Advisory Committee (DFAC) meeting at Kadapa organized by ATMA. During this meeting Scientist presented the action plan proposed under ATMA for the year 2018-19. In this meeting Sri J. Murali Krishna, PD, ATMA, Dr Karuna Sagar PS& Head, ARS, Utukur, Dr. K. Ankaiah Kumar, PC, KVK, Utukur, Dr Veeraiah, PC, DAATTC, Utukur, DPD, ATMA, BTT Convenors and Farmer representatives participated.

On 02.06.2018, on the occasion of Nava Nirmana Deeksha programme organized at Krishi Vigyan Kendra, Vonipenta. Dr. R.V.S.K Reddy, Director of Extension, Dr. YSRHU attended as chief guest and pledge was done. In this programme Dr. E. Karuna Sree, Senior Scientist and Head, VR Gudem and Technical team of KVK, Vonipenta were participated.





On 04.06.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), Dr.V. Nagarjuna and Smt R. Suneetha, Research Associate (Home science) have attended the Navanirmanadeekshaprogramme organized by Dept of Agriculture Mudireddypalli and Nandyalampet villages of Mydukur mandal. The scientist explained the importance of best management practices to be followed in Agricultural and Horticultural crops, woman empowerment and food nutritional security.

On 21.06.2018, Dr. M. Ramakrishna, Officer In-charge and Sri. G. Sandeep Naik, Scientist, (Plant Pathology), KVK, Vonipenta have attended in Krishi Kalayan Abhiyan programme at Upparapalli village of Railway Kodur mandal organized by KVK, Utukur in collaboration with ATMA, Kadapa dist. The Officer Incharge explained about the best management practices in Papaya and banana crops. The Scientist explained about the importance of Apiary, Mushroom production in doubling the farmers income in addition to cultivation of crops. Later, participated farmer - scientist interaction. During this programme Sri J. Murali Krishna, JDA and PD, ATMA, Sri Prasad, DDH, Scientific staff from KVK and DAATTC, Utukur, ADH, ADA and all mandal level officers participated.



On 22.06.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) has attended in Krishi Kalayan Abhiyan organized by KVK, Utukur in collaboration with ATMA, Kadapa dist at Kolavali village in Muddanur mandal. The scientist explained the preparation and importance of waste decomposer and NADEP composting, followed by participated in farmer – scientist interaction.



On 27.06.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) has attended in Krishi Kalayan Abhiyan organized by KVK, Utukur in collaboration with ATMA, Kadapa dist at Buchupalli village in Thondur mandal. The scientist explained the production of vermicompost, importance of application of fertilizers and fertigation schedules in various crops and participated in farmer- scientist interaction.

On 28.06.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) has attended the Eruvakapournami Conducted by Dept of Agriculture at Dumpalagattu village of Khajipeta mandal. Sri Putta Sudhakar Yadav, Chairman, TTD attended as chief guest and performed the Bhumi pooja. The scientist explained the importance of seed treatment, soil test based fertilizer application and other best management practices in Horticultural crops to be followed. During this programme Sri Venkata Subbaiah, ADA, Mydukur, AO's, HO and MPEO's were participated.



On 2.07.2018, Dr. V. Yugandhar, Research Associate (Horticulture) has attended in Krishi Kalayan Abhiyan programme organized by KVK, Utukur in collaboration with ATMA, Kadapa dist at Nagisetipalli village in B.Matam mandal. The scientist explained about the best management practices in banana and turmeric crops and importance of kitchen garden, followed by participated in farmer



– scientist interaction.

On 03.07.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) has attended in Krishi Kalayan Abhiyan organized by KVK, Utukur in collaboration with ATMA, Kadapa dist at Ponnathota village in Jammalamadugu mandal. The scientist explained the preparation and importance of waste decomposer and NADEP composting, followed by participated in farmer – scientist interaction.



On 04.07.2018, Sri. G. Sandeep Naik, Scientist (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have visited Bedadurvillage of Kondapur mandal for diagnosis of pests and diseases in Sweet orange. The scientists observed the Gummosis disease caused by *Phytophthora* sp. and *Botrytis* Sp. in Sweet orange and suggested the removal and destruction of infected portion followed by application of Copper oxy chloride @ 3g/ litre or Bordeaux paste.

On 9.07.2018, Dr. V. Yugandhar, Research Associate (Horticulture) has attended in Krishi Kalayan Abhiyan organized by KVK, Utukur in collaboration with ATMA, Kadapa dist at Nanganurpalli village in Proddaturmandal. The scientist explained about the best management practices in chillies and brinjal crops and importance of kitchen garden, followed by participated in farmer – scientist interaction.



On 11.07.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), KVK, Vonipenta have attended in Krishi Kalayan Abhiyan programme at Rajupalm village of Badvelmandal organized by KVK, Utukur in collaboration with ATMA, Kadapa dist. The Scientist explained about the importance of Apiary, Mushroom production in doubling the farmers income in addition to cultivation of crops. Later, participated farmer - scientist interaction.

On 21.07.18, 23.07.18, 25.07.18 and 26.07.18 G. Sandeep Naik, Scientist (Pl.Path), Dr.V.Yugandhar, Research Associate (Horticulture) and Dr.V. Nagarjuna Research Associate (SSAC) have participated in training programme as Resource Person on honey bee keeping at Utukur, organized by Dr.YSR Horticultural University. Explained regarding honey bee keeping and income generation and its byproducts of Bee hive in cosmetics, wax, preparation *etc.*, and also showed hands on experience to the farmers through exposure visit to Agricultural college, Tirupati and also visited Ratna honey bee processing unit at Palamaneru.



On 30.07.18, G. Sandeep Naik, Scientist (Plant pathology) attended the Annual Action workshop on CFLD and Seed hubs under NSFM for KVKs of Andhra Pradesh organized by ICAR ATARI, Hyderabad at KVK, Reddipalli, Anantapur. The scientist presented the work progress on CFLD Pulses Kharif season and action plan for CFLD Pulses and Oilseeds for Rabi and summer season respectively.





On 17.07.2018, Dr. V. Yugandhar, Research Associate (Horticulture) has attended in Krishi Kalayan Abhiyan programme organized by KVK, Utukur in collaboration with ATMA, Kadapa district at Ganganapalli village of Kasinayana mandal. The scientist explained about the best management practices in banana and turmeric crops and importance of kitchen garden, followed by participated in farmer – scientist interaction

On 03.08.18, G. Sandeep Naik, Scientist (Plant pathology), Krishi Vigyan Kendra, Vonipenta attended the meeting on “**District level convergence meeting Farmer Producer Organizations as viable business enterprise**” organized by NABARAD at Kadapa. Scientist explained about KVK mandated activities and also importance of value addition for getting good market price to the farm produce. During this programme Sri YVS Prasad, DDH, and Bank managers from different banks also participated.



On 03.08.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture), Krishi Vigyan Kendra, Vonipenta have attended as technical resource persons in a training programme on “**Importance of micro irrigation and fertigation**” organized by APMIP, Kadapa at Mudimalla village of Duvvur mandal. The scientist explained the importance of fertigation for increasing the efficient utilization of water and fertilizer, methods of fertigation and also fertigation schedules to be followed in different horticultural crops. Followed by demonstrated method of fertigation and also acid cleaning.



On 09.08.2018 Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture), Krishi Vigyan Kendra, Vonipenta have visited Pomegranate and Banana fields for diagnosis of pests and diseases at Akulanarayanapalli village of Kasinayana mandal. The scientists explained the importance of pruning in Pomegranate and thrips management in tomato and recommended the spraying of dimethoate @ 2ml / lt to control the thrips damage in tomato.



control the thrips damage in tomato.



On 13.08.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a training programme on “Live hood enterprises development programme for SHGs” conducted by DPCC NGO at G.V. Satram. The scientist explained the importance of soil and water analysis, integrated nutrient management, soil test based fertilizer application and micronutrient management in horticultural crops.

On 14.08.2018, Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a training programme on “Live hood enterprises development programme for SHGs” conducted by DPCC NGO at G.V. Satram village of Mydukur mandal. The scientist explained the nursery management in shed net and precaution to be taken while



transplanting the seedlings in main field.



On 14.08.18, G. Sandeep Naik, Scientist (Plant pathology), Krishi Vigyan Kendra, Vonipenta attended as technical resource person in training programme on “Kitchen Garden” at Kadapa organized by AP Greening and Beautification corporation. Scientist explained about the importance of Kitchen garden, nursery preparation, planting, water management, pest and disease management and about terrace gardening and precautions to be taken while beginning of terrace gardening. During this programme Sri YVS Prasad, DDH, Sri D.Madhusudhana Reddy, PD, APMIP also participated.



On 18.08.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a farmer training programme on “**Importance of micro irrigation, fertigation and its maintenance**” organized by APMIP, Kadapaat Vonipenta village of Mydukur mandal. The scientist explained the importance of fertigation for increasing the efficient utilization of water and fertilizer, methods of fertigation and also fertigation schedules to be followed in different horticultural crops.

On 15.09.2018 to 29.09.2018 G. Sandeep Naik, Scientist (Pl. Path), Dr. V. Nagarjuna, Research Associate (Soil Science), Dr. V. Yugandhar, Research Associate (Horticulture) and Smt. R. Suneetha Research Associate (Home science) from Krishi Vigyan Kendra, Vonipenta have conducted the “Swachhata Hi Seva” programme under “Swacha Bharath Mission” at different villages in Mydukur mandal. The scientists emphasized on the importance of cleanliness for healthy life and also participated in cleaning of school premises. The scientist conducted a rally in ZP High School, Duvvur for creating awareness about Swachhata Hi Seva programme.



On 20.09.2018, Dr. V. Nagarjuna, Research Associate (Soil Science), Dr. V. Yugandhar, Research Associate (Horticulture) and Smt. R. Suneetha Research Associate (Home science) Krishi Vigyan Kendra, Vonipenta have conducted training programme on “Cultivation practices in Blackgram” under CFLD on Pulses under National Food Security Mission sponsored by ICAR- ATARI, Zone – X, Hyderabad. Later, Scientist conducted method demonstration on seed treatment with imidacloprid @ 5 ml per kg seed to control sucking pest complex. The scientists provided critical inputs to the beneficiary farmers at KVK, Vonipenta.

On 22.09.2018, Dr. V. Nagarjuna, Research Associate (Soil Science), KVK, Vonipenta has attended the DFAC meeting at KVK, Uttukur organized by ATMA, Kadapa. The Project director, ATMA discussed about budget allocation for the year of 2018-19 and the scientist explained the proposed demonstrations and training programmes under ATMA by KVK, Vonipenta.





On 28.09.18, Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by Department of Horticulture at Ponnampallivillage in Mylavaram mandal. The scientist explained the integrated nutrient management in horticulture crops. Conducted a diagnostic field visit in papaya field and identified the papaya ring spot and mosaic diseases and recommended the application of Dimethoate or Methyl demeton @ 2 gm /lit for controlling insect vector.

On 29.10.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a training programme on “Live hood enterpreneur development programme (LEDP) for SHGs” organized by DPCC NGO at G.V. Satram. The scientist explained the about pest management practices, kitchen gardening, marketing, opportunities to woman in agriculture. Sri Srinivasa Rao, AGM, NABARD, Kadapa also participated.



On 02.11.18, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by Department of Horticulture at Narjampalli village of Mylavaram mandal. The scientist explained the about fertilizer management, INM, pests and disease management in chilli. Sri Jaya Bharath Reddy, Horticulture Officer, Mylavaram also participated.

On 14.11.18, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by ATMA at Sunkulagaripallivillage in Mydukur mandal. The scientist explained the pests and disease management in Turmeric, Tomato and viral disease management in chillies. Sri Chandra Sekhar, BTM, ATMA, Mydukur also participated.



On 16.11.18, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by ATMA at Bhadripallivillage in Chapadu mandal. The scientist explained the pests and disease management in Turmeric and Paddy. Sri V.L Satya Prakash, PD, ATMA AND Sri Michale Rajeev, DPD, ATMA also participated.

On 26.11.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) from Krishi Vigyan Kendra, Vonipenta has attended in Krishi Kalyan Abhiyan programme (Phase-II) organized by KVK, Utukur in collaboration with Dept of Agriculture and allied sectors. During the programme Scientist interacted with the farmers and explained importance of integrated nutrient management in cereals.





participated.

On 29.11.2018, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by APMIP, Kadapa at GV Satram village of Mydukur mandal. The scientist explained about the best management practices in tomato, fertilizer management, INM, Integrated Pest Management in chilli. Sri Ravi Chandra Babu, APD, APMIP, Kadapa and Sri Nagaraju, Horticulture Officer, Mydukur also participated.



On 06.12.18, Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has attended as a technical resource person in training programme conducted by ATMA at Bayanpalli village in Duvvur mandal. The scientist explained the integrated crop management practices in Turmeric and Banana. Sri Chandra Sekhar, BTM, ATMA, Mydukur also participated.



07.12.2018, Dr V Nagarjuna, Research Associate (SSAC) and Smt R. Suneetha, Research Associate (Home Science) have attended as a resource person in Krishi Kalayan Abhiyan programme –II organized by KVK, Utukur in collaboration with ATMA, Kadapa Dist at kondasunkesula village in peddamudiyam mandal. The scientist explains the importance of soil health card, balanced fertiliser application and INM in paddy, Bengal gram and cotton crops. Research Associate (Home Science) explained about value addition, mushroom cultivation and kitchen garden.



On 11.12.2018, Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta has attended in Krishi Kalyan Abhiyan programme –II organized by Dept of Horticulture. During the programme Scientist interacted with the farmers and explained importance of kitchen gardening and best management practices in turmeric followed by distributed the planting material to the beneficiaries.

On 12.12.2018, Sri E Ravi Goud, Research Associate (Agril. Extension) has attended in Krishi Kalayan Abhiyan programme organized by KVK, Utukur in collaboration with ATMA, Kadapa Dist at suddhapalli village of peddamudiyam mandal. The scientist explained about the objectives of the program and ways to double the farmer's income like FPOs, IFS, using of mobile apps to get current information regarding market prices, followed by participated in farmer – scientist interaction session.





On 19.12.2018, Sri G. Sandeep Naik, Scientist, (Plant pathology) from Krishi Vigyan Kendra, Vonipentahas attended in Krishi Kalayan Abhiyan- II programme organized by KVK, Utukur in collaboration with ATMA, Kadapa Dist at Thorrivemulaand Tallamarpuramvillages. During the programme Scientist explained about IPM practices in Chillies, Pests and disease management in Paddy and Maize.

From 27.12.2018 to 29.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipentahave attended as resource person in farmers training programme organised by National Horticultural Research and Development Foundation, Kurnool organised three days training programme on “Modern seed production technology of Okra and Cowpea crops” NHRDF at Mydhukur. Scientist (Pl. Path) explained about pests and disease management in Okra and cowpea, IPM practices and Research Associate (Horticulture) explained about cultivation practices of Okra and Cowpea. Dr Suresh Dagade, Deputy Director, NHRDF and Sri Nagaraju, Horticultural Officer, Mydukur also participated in the programme.



On 27.12.2018 Sri. G. Sandeep Naik, Scientist, (Plant Pathology) from Krishi Vigyan Kendra, Vonipentahasattended as resource person in farmers training programme organised by Department of Agriculture, Mydukur. During the programme Scientist emphasized on Importance of Biocontrol agents in Agricultural and Horticultural crops, Type of biocontrol agents, method and time of application and precautions to be taken while application of biocontrol agents. Sri Venkata Subbaiah, ADA, Mydukur, MAO, Mydukur also attended in the programme.

On 31.12.2018 Dr V. Nagarjuna, Research Associate, (SSAC)from Krishi Vigyan Kendra, Vonipenta have Attended a training programme conducted by Department of Horticultureat Tangutur villageof Rajupalem mandal.During the programme Scientist explained the fertilizer management, INM component, Importance on usage of Biofertiliser and micronutrient management. Sri Poorna Chandra Sekhar, BTM, ATMA, explained about cultivation practices in Paddy.



On 08.01.2019Dr. V. Nagarjuna, Research Associate, (SSAC)from Krishi Vigyan Kendra, Vonipenta has conducted off training programme on “Correction of micronutrient deficiency in agricultural and horticultural crops” at Annavaram village of Chapadumandal.During the programme Scientist explained about importance and role of micronutrient in plants, method of application, type of fertilizer and dosage of fertilizer for correcting the nutrient deficiency.



On 10-01-2018, Smt R. Sunitha, Research Associate (Home science) and Sri E. Ravi Goud, Research Associate, (Agril. Extension) from Krishi Vigyan Kendra, Vonipenta has conducted off campus training



programme on value addition on tomato by making of tomato ketchup, jam and jelly at vonipenta village of mydukur mandal. During the programme scientist explained about importance and entrepreneurial aspects of tomato ketchup and motivated SHGs to initiate small enterprise on value addition of tomato.

On 07.03.2019, Sri. G. Sandeep Naik, Scientist (Plant Pathology) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a farmers training programme organised by National Horticultural Research and Development Foundation, Kurnool at Udyana Bhavan, Kurnool on “Strategic of onion, Bhendi and solanaceous vegetables plant health management to double up farmer’s income in Andhra Pradesh”. In this programme scientist explained about pests and disease management in onion, Bhendi and solanaceous vegetables and strategies to doubling the farmer’s income.



On 16.03.2019, Dr. V. Nagarjuna, Research Associate (SSAC) from Krishi Vigyan Kendra, Vonipenta has attended as a resource person in farmers training programme organized by KVK, Utukuron “Vermicompost production”. The scientist explained method of vermicomposting, nutrient status and importance of vermi composting technology in recycling of crop residues.

On 20.03.2019, Dr. V. Nagarjuna, Research Associate (SSAC) from Krishi Vigyan Kendra, Vonipenta has attended as resource person in farmers training programme organized by DAATT Centre, Utukuron soil test based fertilizer application in paddy. The scientist explained the importance of soil testing, method of soil sample collection, importance of soil test based fertilizer application in paddy.



On 25.03.2019, Dr. V. Nagarjuna, Research Associate (SSAC) from Krishi Vigyan Kendra, Vonipenta has attended as resource person in farmers training programme organized by DPCC (NGO) at G.V. Satram in Mydukur mandal on “Lively hood entrepreneurship development for rural woman”. The scientist explained the importance of soil testing and integrated nutrient management in horticultural crops.

On 26.03.2019, G. Sandeep Naik, Scientist (Pl. Path) from Krishi Vigyan Kendra, Vonipenta has attended as technical resource person in a training programme on “Live hood enterprenuer development programme (LEDP) for SHGs” organized by DPCC NGO at G.V. Satram village of Mydukur mandal. The scientist explained about pest management practices, kitchen gardening, marketing, opportunities to woman in agriculture. Sri Srinivasa Rao, AGM, NABARD, Kadapa and Sri Raghunatha Reddy, CEO, APGB, Kadapa also participated.





COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

- Dr.K.Sesha Kiran, Asst Prof (Plant Pathology), College of Horticulture, V.R.Gudem successfully completed the Science Academies Summer Research Fellowship program (SRFP, 2018) for eight weeks from 01-10-2018 to 26-11-2018 at Agro-processing and Technology Division, CSIR-NIIST, Thiruvananthapuram. He worked on "Role of Rice Endophytic bacteria in the Biological control of Fusarial wilt pathogens" and has participated in Interactive sessions of Dr. Shekhar Mande, DG and Secretary, CSIR, New Delhi during the fellowship period.
- Dr.K.Usha Kumari, Assistant Professor has participated in 21 days training programme (ICAR-sponsored winter school) on “ New vistas in seed production, processing, seed enhancement and marketing” held at Seed Center, TNAU, Coimbatore from 14th November to 4th December, 2018.
- Dr.P.Subbaramamma, Assistant Professor has participated in ICAR short course on ‘Non-destructive high throughput Phenotyping for gene discovery and development of climate resilient crops’ held at IARI, New Delhi from 14-03-2019 to 23-03-2019.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- Dr. M. Raja Naik, Associate Professor (Horticulture), COH, Anantharajupeta has participated in 10 days ICAR sponsored short course on “New dimensions in management of soil health through organic production system in Horticulture crops” held at College of Horticulture, UHS Campus, GKVK, Bengaluru from 10-09-2018 to 19-09-2018.
- Dr. V. Vijaya Bhaskar, Professor (Horti), Dr. K.M.Yuvaraj, Professor (Horti), Dr. V.N.P. Sivarama Krishna, Assoc. Professor (Horti), has participated in 8th Indian Horticulture Congress held from 17th -21st January, 2019 held at Indira Gandhi Krishi Vigyana Kendra, Raipur, Chattisgarh, organized by Horticulture Society of India.
- Dr. VNP Shivaramakrishna, Assoc. Prof (Hort) farmer’s exposure visit to NOFRI, Gangtok from 7th to 13th Oct 2018 accompanied by Mr Renuka Prasad Horticulture Officer along with 25 farmers belongs to Koduru and Chitvel Mandals. Farmer's exposure visit to National Organic Farming Research Institute, Tadong, Gangtok, Sikkim state.
- Ch. Ruth, Prof. (Pl.Path.) participated in 5th National Asian PGPR Conference for Sustainable and organic Agriculture with a theme on “Eco-friendly Bio-innovations for integrated Crop Management, Soil Health & Environment” on 23rd - 25th February, 2019 at Acharya Nagarjuna University, Guntur.
- Dr. M. Ramakrishna, Associate Dean, College of Horticulture, ANantharajupeta has attend “National conference for post graduate students on novel approaches for doubling farmer income through sustainable agricultural production systems” on 19-20 March, 2019 organized by S.V. Agricultural College, Tirupati.





COLLEGE OF HORTICULTURE, PARVATHIPURAM

- Dr. B.Prasanna Kumar, Associate Dean, College of Horticulture, Parvathipuram has attend a training programme on “Improved production technologies in Cashew” at KVK, RK Bai, Vizainagaram on 27.03.2018.

HORTICULTURAL POLYTECHNIC, KALIKIRI

- Dr.C.N.Byanna, Principal and A.Kumar Swamy, Sr.Asst., attended Orientation Training Programme on admission and fee management process conducted at Dr.YSRHU, VR. Gudem on 11-09-2018.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl. No.	Date	Training programme	Venue	Scientist participated
1.	24.04.18	3 days training programme on “Advanced production technologies in cocoa cultivation	KVK, Pandirimamidi	Dr. G. Ramanandam & Dr.N.B.V.Chalapathi Rao
2.	26.04.18	Three days State Level Training Programme on cocoa cultivation sponsored by DCCD at atNidigatla village near Rajahmundry	KVK, Pandirimamidi	Dr.N.B.V.Chalapathi Rao
3.	27.04.18	Awareness cum training programme on Rugose spiralling White fly	Kadiyam village of East Godavari	Dr.N.B.V.Chalapathi Rao,
4.	2.05.18	Kisan Kalyan Karyasala as a part of Gram Swarajya Abhiyan with focus on the strategies for Doubling farmers income by 2022	AMC, Ambajipeta	Smt.E. Padma
5.	2.05.18	Kisan Kalyan Karyasala as a part of Gram Swarajya Abhiyan with focus on the strategies for Doubling farmers income by 2022	Ambedkar Bhavan, Amalapuram	Smt. B.Neeraja
6.	6.05.18.	Workshop on Mechanization in coconut cultivation	Ambedkar Bhavan, Amalapuram	Dr.N.B.V.Chalapathi Rao & Smt. B.Neeraja
7.	07.05.18	Workshop on “Management of Coconut Rugose spiraling whitefly”	CTRI, Rajahmundry	Dr.N.B.V.Chalapathi Rao
8.	24.05.18	Rugose spiraling whitefly awareness meeting and a demonstration on the feasibility of using Drone	Kadiyapulanka village	Dr.N.B.V.Chalapathi Rao





		technology in Rugose spiraling whitefly management.		
9.	02.06.18	Training programme on Rugose spiralling whitefly on coconut and oilpalm.	Neeladevipuram and Kurukuru village of Eluru division	Smt. B.Neeraja and G. Krishna Rao, Research Associate (Ento.)
10.	08.06.18	One day workshop on quality planting material production.	Guntur	Dr. E.Padma
11.	13.06.18	Human Resource Development Training Programme (HRD) on Rugose Spiralling Whitefly on coconut, oilpalm and other Horticultural Crops		Dr. G.Ramanandam, Dr.N.B.V.Chalapathi Rao and G. Krishna Rao,
12.	14.06.18	Human Resource Development Training Programme (HRD) on Rugose Spiralling Whitefly on coconut, oil palm and other Horticultural Crops	Kadali village	Smt. B.Neeraja and G. Krishna Rao, Research Associate (Ento.)
13.	28.06.18	Training programme on Production and protection aspects of coconut	Kaviti village of Srikakulam district	Dr. G.Ramanandam & Dr.N.B.V.Chalapathi Rao
14.	28.06.18	Eruvaka Purnima	Pothavaram village, P.Gannavaram mandal	Dr. E.Padma
15.	07.08.18 & 08.08.18	Two days farmers training programme on “Improved package of practices in cocoa as intercrop in coconut and oil Palm.	ChikkalaChagal lu	Dr. E.Padma
16.	13.08.18	One day training programme cum workshop to create awareness to the farmers on Coconut based cropping systems for productivity enhancement in coconut.	Palasamudram, Chittor district	Dr. E.Padma
17.	23.08.18	UDYANA 2018 – Horti Expo (Horticulture show & Organic Exhibition)	Velagapudi	Dr.N.B.V. Chalapathi Rao
18.	02.09.18	World coconut day	Ichapuram, Srikakulam Dist	Dr.G.Ramanandam, Dr.N.B.V.Chalapathi Rao
19.	02.09.18	World coconut day	AMC, Ambajipeta	Dr..E. Padma & Smt. B. Neeraja
20.	26.09.18	Scientist farmer interaction meeting during inauguration of ADH office.	Amalapuram	Dr..E. Padma & Smt. B. Neeraja
21.	27.09.18	Awareness on Rugose spiralling whitefly and its control	Vakkalanka village, Ambajipeta	Dr.G.Ramanandam & Smt. B.Neeraja





			mandal	
22.	28.09.18	Awareness meeting on Rugose spiralling whitefly	Vakkalanka village	Smt. B.Neeraja
23.	10.10.18	Meeting on Replanting & Rejuvenation scheme on coconut.	Gangalakurru village	Smt. B.Neeraja
24.	11.10.18	Awareness meeting on Rugose spiralling whitefly	Punyakshetram village of Rajanagaram Mandal	Dr.N.B.V.Chalapathi Rao
25.	03.11.18	Awareness meeting on Rugose spiralling whitefly	Uchili, Vaddiparru villages of Atreyapuram Mandal	Dr.G.Ramanandam
26.	14.11.18	Awareness meeting on Rugose spiralling whitefly	Chinthapalli village of Pusapatiregha Mandal	Dr.N.B.V.Chalapathi Rao
27.	14.11.18	Incidence of black headed caterpillar in coconut and its management through biological control	Yanam village, Uppalaguptam mandal	Sri. K.Chakkani Priya, Research Associate, Entomology
28.	16.11.18	One day sensitization training programme on “Rugose spiraling whitefly”	Kommugudem village of Tadepalligudem mandal	Dr.N.B.V.Chalapathi Rao
29.	22.11.18	Awareness meeting on Rugose spiralling whitefly	Rajanagaram village	Dr.N.B.V.Chalapathi Rao
30.	23.11.18	Meeting on Rugose spiralling whitefly	B.V.Lanka village of Alamuru mandal	Smt. B. Neeraja
31.	24.11.18	Awareness meeting on Rugose spiralling whitefly	Kadiyam village	Dr.N.B.V.Chalapathi Rao
32.	28.11.18	Awareness meeting on Rugose spiralling whitefly	Vanapalli, Billakurru (V) of Kothapeta (M) and Velicheru (V) of Atreyapuram (M)	Smt. B. Neeraja
33.	4.12.18	Training programme on Rugose spiralling whitefly management	Ghantavarigudem (V) of Nallagerla mandal	G.Ramanandam & Dr.N.B.V.Chalapathi Rao
34.	12.12.18	Farmers scientist interaction meeting	Rajahmundry	Dr.N.B.V.Chalapathi Rao
35.	14.12.18	Awareness workshop on “Plant parasitic nematodes: A hidden	CTRI, Rajahmundry	Dr.N.B.V.Chalapathi Rao





		treat to nursery industry”		
36.	18.12.18	Training programme on “Rugose spiraling whitefly”	Tuni	Dr.N.B.V.Chalapathi Rao
37.	8.01.2019	Golden jubilee celebrations	HRS, Kovvur	Dr.N.B.V.Chalapathi Rao
38.	21.01.19	Awareness meeting on Rugose spiralling whiterfly	K. Gangavaram village of Ramachandrapu ram (M)	Dr.N.B.V.Chalapathi Rao
39.	22.01.2019	One day training programme on “Management of Rugose spiraling whitefly”.	Kalavalapalli	Dr.N.B.V.Chalapathi Rao

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. K. Ravindra Kumar, Scientist (Hort.) participated in a training on “Geo tagging of RKVY assets” at Dr.YSRHU, Venkataramannagudem on 16.08.2018.
- Shri. Gourishankar, Technical Assistant, HRS, Kovvur participated in training on Nematode identification at Project Coordinator cell, AICRP on Nematodes, IARI, New Delhi from 20th to 25th August, 2018.
- Dr. K. Ravindra Kumar, Scientist (Hort.), HRS, Kovvur participated in 21 days ICAR-CAFT training programme on “New Innovations in Improvement of Vegetable Crops” from 5th to 25th September 2018 at Dr.YSPUHF, Nauni, Solan and received certificate from Hon’ble Vice Chancellor Dr.H.C. Sharma.

CITRUS RESEARCH STATION, TIRUPATI

- Dr. D. Srinivas Reddy, Scientist (Ento) attended the training on plant protection in citrus at RHTI, Kadapa on 10/05/2018.
- Dr. D. Srinivas Reddy, Scientist (Ento) attended the training programme on "Pest & disease Management Mango" on 24/05/2018 at RHTI, Kadapa conducting by the MIDH, RHTI, Kadapa to the Multi Purpose Extension Officers.
- Dr. D. Srinivas Reddy, Scientist (Ento) attended as resource person for training on integrated pest management (IPM) in citrus at RHTI, Kadapa on 22/06/2018.
- Dr. K T V Ramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the training programme on Nutrient management in garden plants at Vijayawada on 28/06/2018.
- Dr. D. Srinivas Reddy, Scientist (Ento),CRS,Tirupatiattended as resource person for training on "One day Workshop on Mango" at Kavali, Nellore on 06-07-2018.
- Dr. L.Mukunda Lakshmi, Scientist (Hort), CRS, Tirupati attended the training as resource person on Canopy management and production technology of sweet orange at Chinthanalanka village of Ainavilli Mandal organized by Dept. of Horticulture, East Godavari on 18/07/2018.





- Dr. K T V Ramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the meeting on protected cultivation at Dr.Y.S.R.Horticultural University on 10.08.2018.
- Dr L. Mukunda Lakshmi, Senior Scientist (Horticulture) CRS, Tirupati attended training programme on production technology of cabbage & cauliflower to input dealers organized by ATMA, Chittoor at farmers Training Hall, RARS, Tirupati on 12/08/2018.
- Dr L. Mukunda Lakshmi, Senior Scientist (Horticulture) CRS, Tirupati attended training programme on Best management practices in horticultural crops with special reference to citrus at RARS, Tirupati on 21/08/2018.
- Dr. K.T. Venkataramana, Principal Scientist (Hort) & Head, Dr. D. Srinivasa Reddy, Scientist (Ent) and V.Gopi, Technical Assistant, Citrus Research Station, Tirupati attended training programme on Cultivation of High value vegetable/ Flowers and Nematode management in polyhouse/shadenet house organized by Department of Horticulture, Palamaner at Palamaner on 04/09/2018.
- Citrus Research Station, Tirupati conducted one day "Field Day on Production and Protection Technologies in Citrus (Sweet orange and Acid lime)" being organized under RashtriyaKrishi Vikas Yojana at BhuchinaiduKandriga village, Chittoor District on 07-09-2018. Dr. K.T. Venkataramana, Principal Scientist (H) & Head, Dr. L. Mukunda Lakshmi, Senior Scientist (Horti), Dr. D. Srinivas Reddy, Scientist (Ent.) and V.Gopi, CRS, Tirupati and Departments officers were attended.
- Dr. D. Srinivas Reddy, Scientist (Ento),CRS,Tirupatiattended as resource person for training on "Pest Disease management of Lime and Sweet Orange " at RHTI, Kadapa on 09-11-2018.
- Dr. D. Srinivas Reddy, Senior Scientist (Ento),CRS,Tirupatiattended as resource person for training on "Pest and Disease management of Mango " at RHTI, Kadapa on 11-12-2018.
- Dr. D. Srinivasa Reddy, Senior Scientist (Ento.), CRS, Tirupati participated and displayed the AICRP recommended technologies and exhibits at National Horticultural Fair, 2019 at IIHR, Bengaluru from 23-25th January, 2019.
- Dr. D. Srinivas Reddy, Senior Scientist (Ento),CRS,Tirupatiattended as resource person for training on " "Integrated Pest Management of Mango"" at Irala mandal of Chittoor district on 02-02-2019.
- Dr. D. Srinivas Reddy, Scientist (Ento),CRS,Tirupatiattended as resource person for training on "Pest and Disease management of Gauva " at RHTI, Kadapa on 08-03-2019.

CASHEW RESEARCH STATION, BAPATLA

- Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head attended the one day workshop on production of quality planting material organized by the Department of Horticulture, Government of A.P. at O/o Commissioner of Horticulture, Guntur and delivered a presentation on Production Technology and Nursery Management in Cashew and clarified the doubts of Horticulture officers.





- Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head attended the "EruvakaPunnami" programme at G.N. Palem, P.V. PalemMandai, Guntur dist on 28.06.2018 organized by Department of Agriculture and delivered message on operations to be carried out in Horticultural crops during the season.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head attended one day training programme on Geo-tagging of RKVY assets on 20.07.2018 organized by the Department of Agriculture, Andhra Pradesh at O/o Commissioner and Director of Agriculture, Guntur.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head attended the Stakeholders meeting on cashew globalization on 13.07.2018 organized by the Directorate of Cashewnut and Cocoa Development, Kochi at Farm Information Unit, Lalbagh, Bangalore and delivered a presentation on Cashew Profile in Andhra Pradesh.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head attended the training programme on Geo tagging of RKVY assets at University Headquarters on 16.08.2018.
- Sri. K. UmamaheswaraRao, Scientist (Hort.) & Head attended the workshop on Cashew value chain management for improving the productivity in Agency area of Andhra Pradesh organized by SERP, Vijayawada at Headquarters on 18.08.2018.
- Sri. K. Umamaheswara Rao, Scientist (Hort) & Head, attended the training programme on Soft Wood Grafting Technique in cashew as a technical expert on 18.09.2018 organized by SERP Vijayawada for unemployed Rural youth selected from Agency area of East Godavari, Visakhapatnam, Vizianagaram and Srikakulam districts.
- Sri. K. UmamaheswaraRao, Scientist (Hort) & Head, attended as a Resource person at Extension Training centre to Trainee MPDO's on 09.10.2018 and delivered lecture on Importance of Horticultural crops in Rural areas.
- Dr. K. DhanmjayaRao, Principal Scientist (Hort) & Head, Sri. K. UmamaheswaraRao Scientist (Hort) and Dr. B. Nagendra Reddy, Scientist (Ento) attended National Conference on Cashew: "Productivity Enhancement and Value Addition for Doubling Farmer's Income" at Vijayawada on 22nd – 23rd Feb, 2019 and Sri. K. UmamaheswaraRao, Scientist (Hort) presented the paper on "Innovative Strategy in Augmenting Quality Planting Material Production". Cashew nut samples, cashew grafts were arranged in the stall along with posters depicting Cashew Production Technology, Pest and Disease Management.
- Dr. B. Nagendra Reddy, Scientist (Ento), Cashew Research Station, Bapatla, attended the Divisional Workshop on Mango and Cashew at Kakinada, East Godavari dist. on 16.03.2019 organized by Department of Horticulture, East Godavari and delivering the lecture on Integrated Pest Management in Cashew.

HORTICULTURAL RESEARCH STATION, ANANTAPURAMU

Date	Scientist	Work
02.02.18	Dr. B. Srinivasulu	Attended MPEOs meeting convened by Assistant Director of Horticulture and visited Horticulture farm at Chigicherla
24.02.18	Dr. B. Srinivasulu	To visit mango, pomegranate, jamun and custard apple gardens





14.03.18	Dr. P. Deepthi	RKVY – Arid fruit crops training conducted at RHTI, Anantapuramu
24.04.18	Dr. B. Srinivasulu	Visit pomegranate fields and attended farmers training programme
26.04.18	Dr. B. Srinivasulu	farmers training programme on pomegranate at RHTI under APEDA, Anantapur
27.04.18	Dr. B. Srinivasulu	farmers training programme on pomegranate at RHTI, Pulivendula
02.05.18	Dr. B. Srinivasulu	Kalluru for kisan kaliaan karyasala
04.05.18	Dr. B. Srinivasulu	Field visit to farmers orchard (open air jail) Reddipalli for mango diagnosis
08.05.18	Dr. B. Srinivasulu	Farmers training programme on fig, pomegranate
09.05.18	Dr. B. Srinivasulu	As per zonal research head instruction visited to tirupati for sweet orange gardens survey
09.05.18	Dr. P. Deepthi	Farmers training on vegetables and melons at RHTI, Anantapuramu
23.05.18	Dr. B. Srinivasulu	Attended training programme on banana Tadipatri
04.06.18	Dr. P. Deepthi	Farmers field visit on pomegranate
28.06.18	Dr. P. Deepthi	Eruvakapournami, KVK, kalyanadurgam
05.07.18	Dr. B. Srinivasulu	Local training programme
13.07.18	Dr. B. Srinivasulu	Farmers field visit
18.07.18	Dr. B. Srinivasulu	RHTI training programme on guava
18.07.18	Dr. P. Deepthi	RHTI training programme on guava
23.07.18 to 27.07.18	Dr. P. Deepthi	Training programme on Nematodes at HRS, Kovvur

HORTICULTURAL RESEARCH STATION, MAHANANDHI

- Dr. M. Tagore Naik, Scientist (H) attended and participated a training programme on “Ulliudpadakapadarthalamidarhythusadassu” organized by Dept. of Horticulture-II, Kurnool on 20-04-18
- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended and participated a training programme on “Cluster development training programme on Pomegranate & Banana” organized by APEDA and dept. of Horticulture, Ananthapur on 26-04-18.
- Dr. M. Tagore Naik, Scientist (H) attended and participated a training programme on “Mirapasagulojanyapaddatulu” organized by Dept. of Horticulture, Kurnool on 02-07-18 at Mandlem and Jupadubangla villages in Kurnool (Dt.).
- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended and participated a training programme on “Cultivation and integrated pest and disease management in Pomegranate” organized by RHTI, Ananthapur on 10-07-18 at Ananthapur.
- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended and participated a training programme on “Cultivation and integrated pest & disease management in Turmeric and Chilli” organized by Dept. of Horticulture, Kurnool on 25-07-18 at D.Kottaplli (V) of Chagalamarri (M) Kurnool (Dt.).





- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended and participated a training programme on “Cultivation and integrated pest and disease management in Pomegranate” organized by RHTI, Ananthapur on 11-10-18 at Ananthapur.
- Dr. M. Tagore Naik, Senior Scientist (H) attended and participated a training programme on “Cultivation and integrated pest management aspects in Chilli” organized by Dept. of Horticulture, Kurnool on 24-10-18 at Misnala (V) of Nandyal (M) in Kurnool (Dt.).
- Dr. K. Subramanyam, Principal Scientist (PP) & Head, Dr. M. Tagore Naik, Scientist (H) attended and participated in the exhibition cum training programme to the farmers at Thimmapuram village conducted by RHWEP students, COH, Anantharajupet along with Dean of Horticulture, Dr.YSRHU, Associate Dean COH, Anantharajupet, Horticulture Officer and Agriculture Officer, Nandyal on 29-10-18.
- Dr. M. Tagore Naik, Senior Scientist (H) attended and participated a training programme on “Cultivation and integrated pest management aspects in Chilli” organized by Dept. of Horticulture, Kurnool on 27-10-18 at M.Krishnapuram and Pusulur villages.
- Dr. M. Tagore Naik, Senior Scientist (H) attended and participated a training programme on “Cultivation and integrated pest and disease management in Vegetables and Melons” organized by RHTI, Ananthapur on 16-11-18 at Ananthapur.
- Dr. M. Tagore Naik, Senior Scientist (H) and Ms. B. Swathi, RA (Ento) attended and participated Kisal Mela organized by RARS, Nandyal on 12-12-18 and participated in the farmers interaction part. During the mela exhibition stall was arranged by HRS, Mahanandi.
- Dr. M. Tagore Naik, Senior Scientist (H) attended a training programme on “Pula sagulopatinchavalasinayajmanyapaddatulu” at U.Bollavaram village and “Cultivation of Chilli” at P.Rayapuram village organized by Dept. of Horticulture on 15-12-18.
- Dr. M. Tagore Naik, Senior Scientist (H) attended a training programme on “Banana cultivation” at Srinagaram village organized by Dept. of Horticulture on 18-01-19.
- Dr. M. Tagore Naik, Senior Scientist (H) attended and participated T&V meeting at RARS, Nandyal on 25-01-19 and conveyed present horticultural crops problems and their management.
- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended and participated a training programme on “Cultivation and integrated pest & disease management in Mango and Vegetables crops” at Ramapuram and Pyalakurthi villages organized by Dept. of Horticulture, Kurnool on 16-02-19.
- Dr. M. Tagore Naik, Senior Scientist (H) attended a training programme on “Kuragayalasalomelukuvalu” at Edurupadu (V) of Kothaplle (M) and “Mamidilopathichavalasinayajmanyapaddatulu” at Gokavaram (V) of Kothaplle (M) organized by Dept. of Horticulture on 22-02-19.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attend as resource person for capacity building training programme on turmeric for FPO members organized by ICRISAT at Chintapalli on 24-05-2018. Total 50 FPO presidents, leaders, members were attended the programme.





- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attend as resource person for capacity building training programme on turmeric for FPO members organized by ICRISAT at Pedabayalu on 25-05-2018. Total 50 FPO presidents, leaders, members were attended the programme.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attend as resource person for capacity building training programme on turmeric for FPO members organized by ICRISAT at Paderu on 26-05-2018. Total 50 FPO presidents, leaders, members were attended the programme.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to the farmers training programme on Problems on ground water and management conducted by Central Ground Water Board, Ministry of water resources, Govt. of India on 28-06-2018 at Youth Training Centre, ITDA, Chintapalli.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to the farmers training programme on Importance of Micro irrigation in Horticultural crops conducted by Dept. Of Horticulture, Visakhapatnam at Horticultural Research Station, Chintapalli on 25-08-2018.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to the AMC level Polampilisthondiprogramme conducted by ATMA & Dept. of Agriculture at Agricultural Marketing Yard, Chintapalli on 16-09-2018.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to the farmers training programme on drip irrigation/ fertigation methods in improvement of productivity conducted by APMIP, Visakhapatnam on 28-09-2018.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to training programme on one day seminar on Orchids conducting by the A. P. Greening and Beautification Corporation at PWD grounds, Vijayawada on 27.01.2019.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to training programme on Establishment of State of the art Pepper processing, packaging and Turmeric Pulverizing" and to share the advanced techniques to the stakeholders (FPOs & NGOs of Tribal Area) in Visakhapatnam at O/o Comissioner of Horticulture, Guntur on 31.01.2019.
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended as resource person to training programme on Judicious Water Management organized by Dept. of Agriculture at RARS, Chintapalli on 22.02.2019.

MANGO RESEARCH STATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.G.Sravanthi, Scientist (Ento) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Hatiyatanda and Lopudi organized by RHTI, Eluru on 1.5.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Maddulaparva, organized by Horticulture Dept on 10.5.18





- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Pullurui, organized by Horticulture Dept on 11.5.18
- Dr.G.Sravanthi, Scientist (Ento) Mango Research Station, Nuzvid participated in training programme as resource person on mango at MokaKondaparva&Narsapuram organized by Horticulture Dept on 19.5.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Kavaliorganised by National Horticultural Board on 6.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Chanubonda, Narasimhapalemorganised by RHTI, Gopannapalem on 11.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Chekkapalli, Katrenipaduorganised by Horticulture department on 12.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango at Raavicharla, Ravanakkapetaorganised by RHTI, Gopannapalem on 13.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango organised by Horticulture department at Mylavaram on 19.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango organised by Horticulture department at Chandralaorganised on 20.7.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) Mango Research Station, Nuzvid participated in training programme as resource person on mango organised by Horticulture department at Reddygudem on 24.7.18
- Dr.R.Rajaya Lakshmi, Scientist (Hort) &Dr.B.K.M.Lakshmi, Scientist (P.P) MRS, Nuzvid. As per Lr.no.9800/Dr.YSRHU/Res.1/2018, dt.03.11.2018, of the Director of Research, Dr.YSRHU, Venkataramannagudem, attended the training to impart training to the mango FPO farmers on package of practices with emphasis on pest & disease control organised by SERP
- Dr.G. Sravanthi, Scientist, Entomology, Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Tholukodu and Pulleru on 5.12.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Mallavali on 10.12.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Rangannagudem on 11.12.18





- Dr.G. Sravanthi, Scientist, Entomology, Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Reddikunta and Vedurubeedem on 11.12.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head, Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Remalle on 14.12.18
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho) Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Bayer at Visannapeta on 20.12.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Singannagudem on 26.12.18
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Vissannapeta on 1.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Vissannapeta on 2.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Venkatayapalem on 5.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Vissannapeta on 6.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Vissannapeta on 7.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Digavalli, Chekkapalli&Mukkellapadu on 8.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Vemureddypalli (Visannapeta mandal) on 11.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by RHTI, Gopannapalem Dept. of Horticulture at Yerrampalli on 14.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by RHTI, Gopannapalem Dept. of Horticulture at Chintalapudi on 15.2.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Ramanakapeta, Valasapalli (Musunuru mandal) on 16.2.19





- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at G.Konduru on 13.3.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Kumtamukkala on 15.3.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Chevtturu on 21.3.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Veltturu on 23.3.19
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head Mango Research Station, Nuzvid participated in training programme as resource person on mango organized by Dept. of Horticulture at Tholuprollu on 30.3.19

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Dr.P.Rama Devi, Senior Scientist (PP)HRS, Venkataramannagudemattended farmers training programme as resource person on “Role of iofertilizers and organic manures in Sustainable Agriculture” organized by KVK, VR Gudem on 24.4.2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Package of Practices in Vegetables” organized by Dept of Horticulture at Malakalapalli, W.G Dist on 22-05-2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) attended farmers training programme as resource person on “Cultivation Practices &IPM in vegetables” organized by RHTI, Gopannapalem at Pedapatnam, E.G.Dist on 23-05-2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Cultivation Practices &IPM in vegetables” organized by RHTI, Gopannapalem at Pedapatnam, Lanka E.G.Dist on 24-05-2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Package of practices for important vegetable crops and IPM practices” organized by Dept.of Horticulture, Devaraplli, W G Dt at Atchyuthapuram on 14-06-2018.
- Dr.P.Rama Devi, Senior Scientist (PP)HRS, Venkataramannagudemattended farmers training programme as resource person on “Crown cleaning, biological and chemical methods for coconut diseases management” organized by KVK, VR Gudem on 19.6.2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Protected cultivation of Flowers and vegetables” organized by Dept.of Horticulture, at Vinukonda, Guntur Dist on 16-07-2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Kitchen gardening” organized by AP Urban Greening, at Vijayawada, Krishna Dist on 23-07-2018.



- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “IPM and INM in Vegetables” organized by Dept of Horticulture at Agiripalli, Krishna Dist on 26-07-2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Protected cultivation of Flowers and vegetables” organized by Dept of Horticulture at Palamaner, Chittoor Dist on 10-08-2018.
- Dr. P. Ashok, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Packages of practices in vegetables including IPM” at Dondagarla and Jaggannapeta, Tadepalligudemmandal, West Godavari from 23.08.18 to 25.08.2018.
- Dr.P. Ashok, attended Training of Master Trainers (ToMT) as Solanaceous crop cultivator organized by Agriculture skill council of India (ASCI) from 29.08.18 to 31.08.2018at KVK, Venkatramannagudem.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Nematode management in polyhouses” organized by Dept of Horticulture at Palamaner, Chittoor Dist on 4-09-2018
- Dr. D. Aparna, S (H) participated participated in five days training to trainers on “Good Agricultural and Collection Practices of Medicinal Plants” from 22.10.18 to 26.10.2018 at Anand, Gujarat.
- Dr.P.Rama Devi, Senior Scientist (PP)HRS, Venkataramannagudemattended farmers training programme as resource person on “Betelvine cultivation” organized by Dept of Horticulture at Mulukuduru, GunturDiston 21.12.2018.
- Dr. M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem attended farmers training programme as resource person on “Prospects and challenges of organic vegetables production under protected cultivation” organized by KVK,VRGudem at Venkataramannagudem, West Godavari Dist on 12-03-2019.

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

- Dr. M. Janaki, Scientist (Hort.) & Head has participated in the Eruvakaprogrammee held at Gorinta village on 26th June, 2018.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

- A group of farmers from Satyavedu, Chittor district visited HRS, Anantharajupeta along with Horticulture officer on 12-4-2018. Smt. T. Nagalakshmi, Scientist (Pl. Path) and Sri. Y. Chandra Sekhar, Res. Associate explained about various ongoing reserach activities on fruit, vegetable and flower crops and the farmers visited ornanic tomato cultivation under naturally ventilated polyhouse.

As a resource person Dr. R. Nagaraju, Senior Scientist (Hort) & Head, HRS, Anantharajupeta attended Mango buyers and sellers meet conducted by Dept. of Horticulture at Vijayawada on 13-4-2018 and interacted with farmers and



exporters and enlightened the importance of pre and post harvest management aspects to be considered while exporting the produce.



Sri D. Sreedhar Scientist (Hort) and T. Naga Lakshmi, Scientist (Pl. Path.) HRS, Anantharajupeta attended farmers training programmes organized by Dept. of Horticulture and explained about Papaya nutrient management and integrated management of papaya viral diseases at VV Kandriga and B. Kammappalli villages of Kodur division of Kadapa district on

24th and 30th October 2018.

Dr. R. Nagaraju Senior Scientist(Hort) and Head, Sri. D. Sreedhar (Scientist, Hort), Smt. T. Naga Lakshmi (Scientist, Pl Path.) and Y. Chandrasekhar (RA, Pl.Path), Anantharajupet explained about "Different propagation techniques in Mango, Citrus and Guava, integrated management of Papaya ring spot virus and other ongoing research projects, to the 160 B.Sc (Ag) students from S.V. Agril. College, Tirupati. Students visited as a part of their exposure visit on 10-07-2018.



45 farmers from Foundation for Ecological Security (NGO), Nambulapulakunta, Ananthapuram have visited HRS, Anantharajupeta as a part of exposure visit. Dr. R. Nagaraju, Senior Scientist (Hort) & Head, Sri.D.Sreedhar and other Scientists interacted with the farmers and discussed elaborately on mango, Papaya cultivation practices and various other fruit crop problems

on 09-08-2018.



Dr. R. Nagaraju, Senior Scientist (Hort) & Head, HRS, Anantharajupeta and other Scientists explained about special horticultural practices and nursery management activities to ATMA farmers from Chandragiri division of Chittoor district on 14-08-2018.

Smt. T. Nagalakshmi, Scientist (Pl.Path) and Dr. Y. Sharat Kumar Reddy, Scientist (Pl.Phy) explained about biochemical analytical methods for RHWEP students allotted to Horticultural Research Station, Anantharajupeta on 14-18-2018.



Dr. R. Nagaraju Principal Scientist(Hort) and Head, HRS, Anantharajupeta participated as a resource person in a training programme organized by Dept. of Horticulture and imparted training on pruning and water management practices to improve yields of Mango crop to the mango growers of Settigunta, Yanadipalli village of Kodur mandal , Kadapa



district on 25-09-18.

Thirty farmers from Nellore (KVK), have visited HRS, Anantharajupeta as a part of exposure visit. Sri.D.Sreedhar and other Scientists interacted with the farmers and discussed elaborately on mango, Papaya cultivation practices and various other fruit crop problems on 24-09-2018.



Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta, Dr. K. Swarajya Lakshmi, Professor (Hort), COH, Anantharajupeta and other scientists imparted practical knowledge on various flowers crops being grown and explained about protected cultivation to the B.Sc. Horticulture students during their visit to HRS, Anantharajupeta.

Dr. R. Nagaraju, Principal Scientist(Hort) & Head, HRS, Anantharajupeta, along with Dr. M. Rama Krishna, Associate Dean, COH, Anantharajupeta Smt. T. Nagalakshmi, Scientist (Pl. Path) inspected the ongoing RHWE programme at Bayanapalli village and interacted with the Host Farmers and students on 17-09-2018. Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta, along with Dr. M. Rama Krishna, Associate Dean, COH, Anantharajupeta Smt. T. Nagalakshmi, Scientist (Pl. Path) inspected the ongoing RHWE programme at Reddivaripalli and established Mushroom unit (Oyster mushroom) for the benefit of the rural women folk as a part of skill development and crop diversification on 18-09-2018.



Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta attended training programme on mango as a resource person conducted by Dept. of Horticulture at Bangarupalem mandal, Chittoor district on 25-08-2018 and explained about onfarmpost harvest cultural practices and measures to be taken to enhance flowering and fruiting in mango for the upcoming year.



RHWE students allotted to HRS, Anantharajupeta organized an exhibition cum farmers scientist interaction meet at Bayanapalli village, Kodur mandal of YSR district on 31/10/2018. Dr. M. Lakshminarayana Reddy, Dean of Horticulture, Dr. YSR Horticultural University, attended as a chief guest and Dr. R. Nagaraju, Principal Scientist (Hort) & Head, Dr. M. Rama Krishna, Associate Dean, COH, Anantharajupeta, T. Naga Lakshmi (Scientist-in charge, RHWE) and Dr.B. Thanuja Priya, Asst. Professor (Horti), Principal Representative, and Sri D. Sreedhar, Scientist (Hort) attended as resource persons. RHWE students actively involved and displayed visual aids of latest technologies and explained about their own success story of mushroom unit, vermi composting, postharvest products viz., Banana pseudo stem pickle and Moringa leaf powder etc in their respective villages.





Scientists of HRS, Anantharajupeta Sri. D. Sreedhar, (Hort), Smt. T. Naga Lakshmi, (Pl. Path) and Dr. Y.Sharat Kumar Reddy,(Pl. Physiology) explained about research achievements and ongoing research projects to the students of III year B.Sc (Ag), S.V. Agriculture college, Tirupati, on 17-11-2018 at HRS, Anantharajupeta as part of their exposure visit under Hitech- Horticulture course.



A group of 1st year students of from Horticultural Polytechnic college, Kalikiri along with principal Dr.Bayanna and other teaching staff visited HRS, Anantharajupeta on 27-11-2018 Scientists of HRS, Anantharajupeta. Sri. D. Sreedhar, (Hort) and Dr. Y.Sharat Kumar Reddy, (Pl. Physiology) explained about Gladiolus, Chrysanthemum, Jasmine, Guava, Mango and nursery grafting techniques etc.

Dr. R. Nagaraju Principal Scientist (Hort) , Dr. T. Naga Lakshmi,Scientist, Scientist, Pl. Pathology and Dr. Y.Sharat Kumar Reddy Scientist (Pl. Physiology) HRS, Anantharajupetainvolved in a training programme organized by Krishi Vighnan Kendra, RASS, Tirupati and imparted training for two batches on propagation techniques in ornamental and fruit crops and biocontrol aspects on 22-01-2019.



Dr. R. Nagaraju Principal Scientist (Hort), Sri D. Sreedhar Scientist (Hort) and T. Naga Lakshmi , Scientist (Pl. Path.) and Dr. Y.Sharat Kumar Reddy , Scientist (Pl. Physiology) HRS, Anantharajupeta imparted training to AO's & MPEO's on cultivation practices and plant protection measures on major Horticultural crops grown in Rayalaseema region of Andhra Pradesh organized by Dept. Of Horticulture and explained about production technologies of Mango, Guava and papaya viral diseases and other flower crops on 29-01-2019.

Dr. R. Nagaraju Principal Scientist (Hort), HRS, Anantharajupeta delivered a Guest lecture on “ **Impact of climate on cut flowers under cover**” to PG and Ph.D students of Floriculture and land scaping at Tamil Nadu Agricultural University, Coimbatore on 25-01-2019.



Dr. R. Nagaraju Principal Scientist (Hort) & Head and Dr. T. Naga Lakshmi, Scientist, Pl. Pathology, HRS, Anantharajupetaimparted training to the trainees of Krishi Vighnan Kendra, RASS, Tirupati as resource persons on Protected cultivation – Export management and plant protection on 02-02-2019 and 04-02-2019.

A Group of 25 number of farmers from Puttur Block, Chittoor (Dist) visited HRS, Anantharajupetaon 02-02-19 and Dr. R. Nagaraju Principal Scientist (Hort) & Head and Dr.Y.Sharath Kumar Reddy





explained various research projects and necessary management practices to achieve remunerative yields in mango during this season.



Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta participated as National advisory member in the National Symposium on Horticulture in the vanguard of Climate change and urban Environment and also presented a lead paper on “Conocarpus erectus – The Monster – Myths and Facts at Annamalai University, Chidambaram on 7th and 8th of

February-2019.



Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta reported Erwinia rot in jiffy bag grown banana CV. Grand Naine. The plants which were planted along with jiffy cocopeat bags retained excess moisture and easily attacked by pathogens. Advised the farmers to stop excess irrigation and drench the infected plants with bleaching powder 20gm/ liter and sodium hypochlorite @6gm/plant at 10 days interval.

Dr. R. Nagaraju, Principal Scientist (Hort) & Head, Dr.T.Nagalakshmi, Scientist (Pl.Path), HRS, Anantharajupeta&Dr.M. Jayaprada, Assistant Professor (Genetics & Plant Breeding), COH, Anantharajupeta visited RHWEP Villages at C. Kammappalli (Vill) & K.R. Kandrika (Vill) in Rly.Kodur Mandal of Kadapa districts and explained about biological and chemical control of Mango Pest & Diseases and further visited Mushroom Unit established by RHWEP students and suggested suitable measures for successful production of Mushrooms.



RHWEP students allotted to HRS, Anantharajupeta organized an exhibition cum farmers scientist interaction meet at KR Kandriga village of Kodur mandal of YSR district on 09/03/2019. Dr. M. Lakshmi Narayana Reddy, Dean of Horticulture, YSRHU, attended as a chief guest and Dr. M. Rama Krishna, Associate Dean , COH, Anantharajupeta Dr. R. Nagaraju, Principal Scientist (Hort) &

Head, Dr. T. Naga lakshmi (Scientist-in charge, RHWEP) and Sri. D. Sreedhar, Scientist. (Horticulture), Dr. Jayaprada Assistant. Professor (Pl. Breeding) and Renuka Prasad Horticulture Officer, Dept. of Horticulture, Kodur, attended as resource persons. Scientists advised the farmers regarding the problems related to major Horticultural crops like Mango, Banana and Papaya specially regarding mango hoppers, banana pseudostem weevil and papaya ring spot virus and their control measures. RHWEP students actively involved and kept different models on modern technologies of horticulture like different types of mulches, different types farming systems, vertical and roof gardening etc. Students successfully introduced mushroom cultivation under vocational training programme at C. Kammappalli and KR Kandriga..

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

Place	Date	Participant Designation	&	Particulars
-------	------	-------------------------	---	-------------






Devarapalli, West Godavari	19.02.18	Dr.K.Rajendra Prasad Scientist(Hort)	Delivered Lecture on the “Advances in cashew production technology” conducted by Sri. Devadanam ,H.O, Devarapalli, department of horticulture.
Tetagunta Tuni	14.03.18	Dr.K.Rajendra Prasad Scientist (Hort)	Delivered Lecture on the “Advances in Cashew and mango production technology” conducted by Sri. Ramesh,H.O, Tetagunta, department of horticulture.
Yadavolu	23.4.18	Dr.K.Rajendra Prasad Scientist (Hort)	Delivered Lecture on the “Advances in cashew production technology” conducted by Sri. Devadanam ,H.O, Devarapalli, department of horticulture.
Acharya Nagarjuna university, Guntur	3.05.2018	Sri.P.C.Vengaiyah, Scientist(FST)	Delivered lecture on value addition in palmyrah at “workshop on Value addition and product diversification of palmyrah and coconut” organized by CPCRI, Kasargad
Vasavi Engineering college, Tadepalligudem	31.8.2018	Sri.P.C.Vengaiyah, Scientist(FST)	Delivered lecture on “Enterprenuership development in Palmyrah and its Value addition”
Devarapalli, West Godavari	19.02.18	Dr.K.Rajendra Prasad Scientist(Hort)	Delivered Lecture on the “Advances in cashew production technology” conducted by Sri. Devadanam ,H.O, Devarapalli, department of horticulture.
Gopalapuram West Godavari	6.03.2019	Dr.K.Rajendra Prasad Scientist(Hort)	Delivered Lecture on the “Advances in cashew production technology” conducted by Sri. Devadanam ,H.O, Devarapalli, department of horticulture.

HORTICULTURAL RESEARCH STATION, DARSI

S. No.	Date	Training programme	Village	Mandal
1.	20.05.18	Dr. M. Mutyala Naidu, Senior Scientist (Horti.) & Head attended to input dealers training programme and gave lecture on medicinal and aromatic plants.	KVK, Darsi	Darsi
2.	05.11.18	Dr. M. Mutyala Naidu, Senior Scientist (Horti.) & Head attended to inaugural function of training programme for input dealers.	KVK, Darsi	Darsi
3.	01.12.18	Dr. M. Mutyala Naidu, Principal Scientist (Horti.) & Head, HRS, Darsi explained about various fruit crops to farmers at HRS, Darsi who came from Vinukonda accompanied by ATMA, DPD.	HRS	Darsi





		Dr. M.M.Naidu, PS (H), HRS, Darsi explained about various fruit crops to farmers.		
4.	08.01.19	Dr. M. Mutyala Naidu, Principal Scientist (Horti.) & Head, HRS, Darsi attended to Diamond Jubilee celebrations and participated in exhibition and farmer scientist interaction.	HRS	Kovvur
5.	15.03.19	Dr. M. Mutyala Naidu, Principal Scientist (Horti.) & Head, HRS, Darsi attended to Scientific Advisory Committee meeting and advised the KVK scientists to take up demonstrations on Dolichos beans (bush type).  Dr. M.M.Naidu, PS (H), HRS, Darsi addressed the gathering in SAC meeting at KVK, Darsi.	KVK	Darsi

E.HRD TRAININGS

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

From 23.01.2019 to 25.01.2019, Sri Bhanu murthy K.C, Scientist (Horticulture), KVK, Pandirimamidi participated in National Horticultural Fair organized by ICAR-IIHR at Bengaluru and put up a stall on behalf of our university i.e. Dr. YSRHU and exhibited different varieties of Dr.YSRHU, dried & processed products of fruits and vegetables, posters showing different activities carried out by Dr.YSRHU. Dr. R.V.S.K. Reddy, Director of Extension, Dr.M.L.N. Reddy , Dean of Horticulture, Dr.YSRHU, scientists, farmers and students visited our stall and observed different exhibits we displayed.



KRISHI VIGYAN KENDRA, VONIPENTA

G. Sandeep Naik, Scientist, (Plant Pathology) attended Farm Innovators Meet-2018 organized by ATARI at CRIDA campus, Hyderabad





COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

- Dr. M. Rajasekhar, Professor (Hort.) participated in the 48th APCC COCOTECH conference and exhibition from 20.08.18 to 24.08.18 at the Berkelet hotel pratunam, Bangkok, Thailand on the theme “ Sustainable coconut development through climate smart agriculture, product innovation and advancing technologies”.
- Dr T Suseela, Associate Professor, COH, VRGudem and PG students of Floriculture & Landscape were attended “One day workshop on Bougainvillea plants” on 28.09.18, which was organized by Andhra Pradesh Greening & Beautification Corporation at Vijayawada.
- Dr N Emmanuel, Associate Professor (Entomology) attended two days workshop on “PG Entomology syllabus revision” at GKVK, Bangalore from 18.09.18 to 19.09.18.
- Dr.M.Madhavi, Professor (Hort.) along with four PG students has attended one day workshop on "Agri Digital Connect" on 27-11-2018 at University Auditorium, Rajendranagar, and Hyderabad.
- The Post Graduate students of Floriculture and Landscaping Architecture Department, COH, VRGudem along with the faculty Dr.A.V.D.Dorajee Rao, Professor and Dr.T.Suseela, Associate Professor have attended one day national seminar on “Orchids-Problems and prospects” at PWD Grounds, Vijayawada on 27-01-2019. The Programme was technically resourced by Royal Botanical Gardens, Kew, London.
- Dr.K.Sesha Kiran, Asst Professor (Plant Pathology), COH, V.R.Gudem participated in the 5th National Asian PGPR Conference on Sustainable & Organic Agriculture on "Ecofriendly Bioinnovations for Integrated Crop Management, Soil Health and Environment" organised by Department of Botany & Microbiology , Acharya Nagarjuna University, Guntur from 23rd- 25th February, 2019.
- Dr.K.Sesha Kiran, Asst Professor (Plant Pathology), COH, V.R.Gudem was invited to the 71 st Annual Meeting of Indian Phytopathological Society and National Symposium on "Recent Challenges and Opportunities in Sustainable Plant Health Management" organised by Indian Phytopathological Society and Department of Mycology and Plant Pathology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, U. P from 26th- 28th February, 2019.
- Dr. K.Uma Jyothi, Associate Dean, Dr.A.V.D.Dorajee Rao, Professor, Dr.R.V.Sujatha, Assistant Professor, Dr.M.Paratpara Rao, Dr.P.Vinay Kumar Reddy, Assistant Professor have attended National Conference on ‘Strategic approaches for developing World Class Agricultural universities’ held at Dr.N.T.R College of Agricultural Engineering, Bapatla on 19th and 20th March, 2019

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended a 2 weeks training programme on National Training Programme on Entrepreneurship Development



&Management held at Entrepreneurship Development Institute of India, Ahmedabad from 03-12-2018 to 14-12-2018.

HORTICULTURAL RESEARCH STATION, KOVVURU

- R.Naga Lakshmi, Scientist (Hort) participated in Cluster development training programme conducted by APEDA on banana and pomegranate at RHTC, Ananthapuram on 26.04.2018 and imparted training to 100 banana and pomegranate farmers of Ananthapuram on pre and post harvest practices in banana. Sri. Tarun Bajaj, APEDA General Manager, New Delhi, Dr. Dilip Babu, Director of Research, DrYSRHU, B.S.Subbarayudu, DDH, G.Satish, Ch.Sivasatyanarayana, ADH, Sri Dharam Rao, APEDA Field Officer were also attended the programme.
- R.Naga Lakshmi, Scientist (Hort) participated in Cluster development training programme on banana and pomegranate conducted by APEDA at Sri Saraswathi Vidyamandir, Pulivendula, Kadapa district on 27.04.2018 and imparted training to banana farmers of Kadapa district on good agricultural practices in banana for export purpose. Sri. Tarun Bajaj, APEDA General Manager, New Delhi and Dr. Dilip Babu, Director of Research, DrYSRHU, Sri Dharam Rao, APEDA Field Officer and ADH, Horticultural officer, Pulivendula were also participated in the programme.
- R. Naga Lakshmi, Scientist (Hort.), HRS, Kovvur participated in Kisan Kalyan Karyashala on 02.05.2018 as a part of Gram Swaraj Abhiyaan at SeetharamaKalyana Mandapam, Nelaturu village, Chagallumandal of West Godavari district and explained about the strategies to be followed for doubling of farmers income in banana.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Dr. R. Naga Lakshmi, Scientist (Hort.), Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Pl. Path), HRS, Kovvur participated in the awareness programme on “Protected cultivation and nematode infestation in polyhouses and shade net houses at CTRI, Rajahmundry on 14.07.2018. Sri Chiranjeevi Chowdary, Hon’ble Vice chancellor, DrYSRHU, Dr. J. Dilip Babu, Director of Research, DrYSRHU, Sri T.V. Subbarao, DDH, West Godavari district participated in the programme. A general awareness about nematodes, their symptoms and management in nursery seedlings was created successfully among all the participants.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Dr. R. Naga Lakshmi, Scientist (Hort.), Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology), HRS, Kovvur, Dr. M. Ravindra Babu, Scientist (Hort.) from HRS, V.R.Gudem and Dr. Sarada, Sr. Scientist (Hort.) from HRS, Lam participated in the awareness programme on “Protected cultivation and nematode infestation in polyhouses and shade net houses at Vinukonda, Guntur district on 16.7.2018. Shri Dharmaja, DDH, Shri Subba Reddy, ADH, Shri Sudha, ADH, other Horticulture department officials and polyhouse farmers from Krishna, Guntur, Prakasam and Nellore district participated in the programme. A general awareness about poly house construction, management, cultivation of important crops, nematode infestation, their symptoms and management in nursery seedlings was created successfully among all the participants.





- Dr. R. Naga Lakshmi, Scientist (Hort.) attended “Awareness programme on banana cultivation” as resource person at Bommavaripalem village of Kolliparamandal and Sagguna Lanka village of Kollurmandal of Guntur district on 17.7.2018 organized by Department of Horticulture, Tenali subdivision. Along with Horticultural officers and Assistant Director of Horticulture, Tenali, visited various horticultural crops grown in the respective villages and diagnosed nutrient deficiency symptoms in banana, turmeric, elephant foot yam and fungal as well as viral diseases in banana, elephant foot yam and suggested remedial measures.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head and Dr. K. Mamatha, Senior scientist (Hort), HRS, Kovvur participated in the cluster level training programme organized by APMIP at HRS, Kovvur on 18.8.2018 and educated the farmers on advantages of drip irrigation and fertigation. A demonstration on fertigation was also given by APMIP to the farmers.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head, Dr. R. Naga Lakshmi, Scientist (Hort) and Sri.Ch.S. Kishore Kumar, Scientist (Pl. Path.), HRS, Kovvur as resource persons participated in awareness programme on nematode infestation in poly houses and shade net houses to the protected cultivation farmers of Rayalaseema region at Palamaner, Chittoor district on 4.9.18.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, HRS, Kovvur participated as resource person in the training programme on “Banana production technology” organized by Department of Horticulture on 5.9.18 at Madanapalli of Chittoor district and enlightened the farmers about the improved cultivation practices for banana.
- Dr. K. Ravindra Kumar, Scientist (Hort.) attended one day farmer training programme on “Protected Cultivation of flowers” as resource person on 27.11.2018 organized by Department of Horticulture, Visakhapatnam and delivered the lectures on “Poly house construction and management of microclimate” and “Chrysanthemum cultivation in polyhouse”. Visited polyhouses at Padmanabham and Anandapuram mandals along with Smt. Shyamala, H.O, Anandapuram, Sri. Rajaseskhar, H.O, Vizianagaram along with progressive farmers of Vizianagaram and Visakhapatnam districts.
- Dr. K. Mamatha, Sr. Scientist (Hort.) attended one day farmer training programme on banana cultivation practices as resource person at Eleswaram on 10.12.2018 organized by Department of Horticulture, East Godavari District and delivered the lecture on improved management practices for banana. Visited banana fields where banana varieties Mortomon and Kovvur Bontha were severely affected with Rhizome rot. Suggested management practices for the control of the disease.
- Dr. J. Dilip Babu, Director of Research, DrYSRHU, VRGudem, Dr. B.V.K. Bhagavan, PS (Hort) & Head, HRS, Kovvur, Dr. P. Chalapathi Rao, PS (Ento.), Ambajipeta, Sri. Ch.S. Kishore Kumar, in charge-AICRP on nematodes delivered lecture on nematodes damage in horticultural crops on 14.12.2018.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Smt. B.Neeraja, Scientist (Path.) attended the training programme on “Introduction to basic techniques in nematology and identification of nematodes” being organized by the





AICRP (Nematodes) at ICAR-IARI, New Delhi from 20-25th August, 2018 for identification of the nematode problems in Andhra Pradesh.

- Dr.N.B.V. Chalapathi Rao, Senior Scientist (Ent.) attended training programme on Master Trainers for Training of Master Trainers (ToMT) organized by Agriculture Skill Council of India (ASCI) and Dr.YSRHU at KVK, VR Gudem from 29th – 31st August, 2018.
- Dr.G.Ramanandam, Principal Scientist, (Hort.) attended the one day training programme on “Testing Modified Ground Pollination in coconut” at CPCRI, Kayankulam, Kerala on 18.01.2019.

MANGO RESEARCH STATION, NUZVID

- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid attended state level seminar on Scientific bee keeping at Venkataramannagudem on 27.10.18
- Dr.G.Sravanthi, Scientist (Ento), MRS, Nuzvid attended training programme on fruit fly surveillance and management at NIPHM, Hyderabad on 29.10.18 to 2.11.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (Pl. patho), and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on production technology of mango, pests and disease management in mango on 14.11.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on production technology of vegetables, pests and disease management in vegetables on 20.11.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on production technology of pests and disease management in gourds (vegetables) on 27.11.2018
- Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on pests and disease management along with processing of palmoil on 5.12.2018
- Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on pests and disease management in guava on 11.12.2018
- Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on pests and disease management in flower crops on 19.12.2018
- Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on pests and disease management in papaya on 27.12.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head, Dr.B.K.M.Lakshmi, Scientist (Pl. patho) and Dr.G.Sravanthi, Scientist (Ento.) organized classes to RHWEP students on production



technology of papaya, pests and disease management along with papain extraction on 3.1.2019.

CITRUS RESEARCH STATION, TIRUPATI

- V. Gopi, Technical Assistant, AICRP on Fruits, CRS, Tirupati attended the training on “An Introductory course on Basic Techniques and Nematode diagnosis” in the PC Cell, AICRP (Nematodes), LBS Building, ICAR-IARI, New Delhi from 20-25th August, 2018.

CASHEW RESEARCH STATION, BAPATLA

- Dr. B. Nagendra Reddy Scientist (Ento), attended 5 days training programme on Fruitfly Surveillance and Management conducted at NIPHM, Hyderabad from 29th Oct– 2nd Nov, 2018.

F. METHOD DEMONSTRATIONS

KVK, VENKATARAMANNAGUDEM

On 11.10.2018 Dr.K.Venkata Subbaiah, Scientist (Horticulture) conducted demonstration on spraying of KNO₃ (13-0-45) @ 1% on Acidlime plants var. Balaji as a KVK technical programme at Jajulakunta, Ghantavarigudem and Marampalli villages. In this programme total 10 farmers were participated.

Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) has visited the Spices and Masala Unit, ITDA, KR Puram and trained the women group on packaging and band sealing machine for effective marketing of spices and masala products on 13.03.2019.



On 22.03.2019, KVK, Venkataramannagudem conducted Foot and Mouth Disease (FMD) vaccination camp at Telikicherla village, Nallajerla mandal in coordination with Veterinary Assistant Surgeon (VAS), Department of Animal Husbandry, Chodavaram and Veterinary Polytechnic college, Venkataramannagudem.

On 23.03.2019, KVK, Venkataramannagudem conducted Foot and Mouth Disease (FMD) vaccination camp at PrakashraoPalem village, Nallajerla mandal in coordination with Veterinary Assistant Surgeon (VAS), Department of Animal Husbandry, Chodavaram and Veterinary Polytechnic college, Venkataramannagudem.



KRISHI VIGYAN KENDRA, PANDIRIMAMIDI



On 20.06.2018, P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi has conducted method demonstration on waste decomposer technology to the trainees of SERP & farmers, Rampachodavaram division. In this, Scientist has explained about preparation of mother culture using water@200 litres, jaggery@2 kg and culture of waste decomposer strain which is developed by National Centre of Organic Farming, Ghaziabad, Uttar Pradesh and also explained the method of culture multiplication for its further use and its application for quick in-situ and off-site decomposition of crop residue. In this programme 35 farmers participated.



On 25.08.2018, Miss Srividya Rani, Scientist (Extension) and Sri.P.Raja Sekhar, Scientist (SS&AC) visited R.Erramapalem village of RHWEP Students. In this programme Scientists demonstrated the method of soil sample collection in zig-zag method from an area of one acre of tomato field prior to transplanting in which they have explained about the importance of soil sampling, testing, practicing of recommended dose of fertilizer application based on Soil Health card recommendation in order to get profitable yields.

On 15.09.2018 Miss. Sri Vidya Rani N, Scientist (Extension) and P. Raja Sekhar Scientist (SS&AC), KVK, Pandirimamidi has monitored method demonstration on preparation of Papaya jam and grape squash by the RHWEP students at Vedurupaka village of Gokavarammandal. In this, student has explained the method of jam, jelly and squash preparation using required ingredients and role of citric acid and KMS as preservatives and its specificity to the type of fruit.



On 24.09.2018 Sri.P.Raja Sekhar, Scientist (SS&AC) & Miss Srividya Rani.N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi along with RHWEP students conducted method demonstration on waste decomposer technology at Rampaerrampalem village of Gokavaram mandal. Students demonstrated the method of preparation and application of organic matter for its quick decomposition. In this programme 12 farmers and RHWEP students participated.

On 24.09.2018 Miss Srividya Rani.N, Scientist (Extension) & Sri.P.Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi along with RHWEP students conducted method demonstration on installation of yellow sticky traps in Brinjal field at Rampaerrampalem village of Gokavaram mandal. Students explained the importance and usage of sticky traps for control of sucking pest complex. In this programme 8 farmers and RHWEP students participated.





Activity	No. of programmes	No of farmers	Extension personnel	Total
Method Demonstrations	22	440	0	440

RHWEP students of CoH, Anantharajupeta allotted to KVK, Periyavaram conducted method demonstration on installation of yellow sticky traps in Okra for sucking pest control at Vallivedu village on 06.09.2018. Dr.L.Ranjith Kumar, Scientist (Ento.), In-charge of RHWEP, KVK, Periyavaram coordinated the programme.



On 19.09.18, KVK, Periyavaram conducted a method demonstration on “Nutritional garden” at Gilakapadu, Saidhadhulapalli villages of Rapurmandal. Ch. Sindu, Research Associate (Home Science) explained its importance to include in their daily consumption and demonstrated raising beds, sowing and maintenance of garden.

On 14th Dec, 2018 Ms.S.M. Sailaja Horticulture Research Associate KVK, Periyavaram as RHWEP incharge, Dr. M. Kavitha Officer-incharge KVK, Periyavaram, along with RHWEP students conducted Method demonstration on preparation of



Bordeaux mixture at Chilamanuru village of Balayapalli mandal.

Ms. S.M. Sailaja, Horticulture Research Associate KVK, Periyavaram, as RHWEP Incharge has visited Taalvaipadu and Chilamanur villages on 20th Dec., 2018 and given method demonstration on preparation of Mixed fruit jam and Tomato Sauce.

On 28.12.2018, Ms. Ch. Sindu, Research Associate (Home Science), Krishi Vigyan Kendra, Periyavaram conducted Method Demonstration on Value addition of tomato at Periyavaram village of Venkatagiri Mandal. In this programme, she demonstrated preparation of Tomato pickle and Tomato Ketchup to the rural women.



KRISHI VIGYAN KENDRA, VONIPENTA

On 07.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), Smt. R. Suneetha Research Associate (Home Science) and Sri. J. Yoga Narasimhulu Naidu Research Associate (Extension) have conducted FLD



on hermetic bag storage system in cereals, pulses and millets at Adireddipalli village.



On 07.02.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Tippireddipalli village to conduct FLD on Application of Biofertilizers in Chillies to enhance crop yield. The scientist demonstrated the preparation of Biofertilizer mixture by mixing Azospirillum @ 2 Kgs and PSB @ 2 Kgs in 200 Kgs FYM.

On 08.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Sri. J. Yoga Narasimhulu Naidu, Research Associate (Extension) have participated in soil sample collection programme organized by Department of Agriculture officials at Musalnayanapalli village. The scientists explained the importance of Soil analysis and soil health cards and also demonstrated the soil sample collection procedure. Venkata Subbaiah (ADA) and G. Lakshman Kumar (MAO) have also participated in the activity.



On 09.02.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), Smt. R. Suneetha Research Associate (Home Science) and Sri. J. Yoga Narasimhulu Naidu, Research Associate (Extension) have conducted FLD on five pronged wheel hoe to reduce drudgery for farmers at Adireddipalli village. The scientists demonstrated the five pronged wheel hoe practice of weeding and also compared with manual weeder and recorded the comparative advantage information from farmers in order to reduce drudgery.



On 04.04.2018, Dr. V. Nagarjuna, Research Associate, (Soil Science) and Dr. J. Yoga Narasimhulu Naidu, Research Associate (Extension) have collected soil samples from farmer's field at Vonipenta and muslnayanapalli villages, Mydukur mandal. The scientists explained the importance of Soil and water analysis and also demonstrated the soil sample collection procedure.

On 03.02.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. J. Yoga Narasimhulu Naidu Research Associate (Extension) have conducted FLD on enhancing banana bunch yield through application of N, K and S at Uppuguntapalle village, Mydukur mandal. The scientists emphasized the importance of recommended application of fertilizers. The scientist provided inputs like Potassium Nitrate, Agromin max, Biozyme and Sulphate of Potash to the beneficiary farmer.



On 23.04.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited farmers field for collecting soil sample at Sunkulagaripalli Village, Mydukur Mandal. The scientists explained the importance



of Soil and water analysis and also demonstrated the soil sample collection procedure.

On .18.05.2018, Dr. V. Nagarjuna, Research Associate, (Soil Science) collected soil samples from farmer's field at Kesalingayapalli village, Mydukur mandal. The scientists explained the importance of Soil and water analysis, soil health cards and also demonstrated the soil sample collection procedure.



On 12.06.2018, Dr. V. Nagarjuna, Research Associate, (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) have collected water samples from Nagapatnam and Adireddypallivillages of Mydukur mandal. The scientists explained the importance of Soil and water analysis and also demonstrated the collection of water sample.



On 26.06.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) has demonstrated the fertigation method in farmer fields at Kalvvatala and Gullkuntla villages in Jammalamodugu mandal. The scientist explained the methods and importance of fertigation in citrus, papaya, Banana and other horticultural crops.



On 30.06.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Nagarjuna, Research Associate (SS & AC) have conducted FLD on Assessment of waste decomposer culture for recycling of Turmeric and Banana crop residues at Adireddipalli village. The scientists emphasized the importance of waste decomposer application of crop residues. The scientist provided waste decomposer solution to the beneficiary farmers and explained about the method of application.



On 05.07.2018, Sri. G. Sandeep Naik, Scientist (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have conducted method demonstration Turmeric seed treatment at Sunkulagaripalli village of Mydukur mandal. Scientists demonstrated by dipping seed rhizomes in pesticide solution *i.e.*, Mancozeb @ 3g/l + Monocrotophos @ 2ml/litre for 30-40 min to manage the incidence of Rhizome rot disease and rhizome fly infestation. They have explained about the importance, advantages and precautions to be taken while doing seed treatment.



On 11.07.2018 and 12.07.2018, Sri.G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture), Krishi Vigyan Kendra, Vonipenta have visited T.Kothapalli village of Mydukur mandal and conducted method demonstration on seed treatment in turmeric and also monitored formation of raised beds and application of biofertilizers under FLD "Integrated crop management in

Turmeric".





On 12.07.2018, Dr. M. Ramakrishna, Officer In-charge, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Nagarjuna, Research Associate (Soil Science), Krishi Vigyan Kendra, Vonipenta have conducted method demonstration on seed treatment with mancozeb @ 2 gm per kg seed to control seed and soil borne diseases. The scientists provided critical inputs to the beneficiary farmers at KVK, Vonipenta. In this programme Sri Poorna Chandra Sekhar, BTM, ATMA, Mydukur also participated.

On 17.07.18, 19.07.18 and 25.07.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta have initiated the FLD on INM in turmeric for correcting nutrient deficiency. The scientist demonstrated the preparation of liquid biofertiliser (*Azospirillum* and PSB @ 500 ml / acre in 20 lit of water) solution are mixed with FYM and applied in the turmeric field and also explained about the importance, advantages and precautions to be taken while usage of bio fertilizers.



On 19.07.18, Smt. R. Suneetha Research Associate Home science, from Krishi Vigyan Kendra, Vonipenta, initiated OFT on Triple layer Hermetic bags storage system to assess storage grain pest damage in house hold purpose at Angan wadi center. In Angan Wadi centers will get 3 months ration rice and dhal, there is a problem in storing from storage pests.

On 24.07.2018, Smt. R. Suneetha, Research Associate (Home science) from Krishi Vigyan Kendra, Vonipenta has conducted method demonstration on value addition to papaya in Adireddypalli village of Mydukur mandal. The scientist also explained the preparation of tutyfruity with unripe papaya peel and cut into 6 pieces. Soak in calcium carbonate water for 5 minutes and clean them properly. Cut them into small pieces and blanch it 5 minutes. Shift the pieces from hot water to cool water and strain water and allow it for drying for 30 minutes. Take another vessel and 1 kg sugar make it into sugar syrup add essence and colour. Boil dried papaya pieces in sugar syrup for 30 minute until thickening of sugar syrup. Cool it for 10 minutes and dry the pieces in solar dryers or under sun for 12-18 hours and also explained the benefits of papaya in diet and during lactation.



On 25.07.2018, Dr. V. Nagarjuna, Research Associate (Soil Science) and Smt. R. Suneetha, Research Associate (Home science) from Krishi Vigyan Kendra, Vonipenta have demonstrated the preparation of waste decomposer in farmers field at T. Kothapalli village. The scientist demonstrated the preparation of waste decomposer solution to the farmers by mixing waste decomposer culture with @ 2 kg jaggery in 200 litres of water and also explained about precautions to be taken while preparation and application.



On 27.07.18, Smt. R. Suneetha, Research Associate (Home science) from Krishi Vigyan Kendra, Vonipenta conducted sowing of vegetable seeds in nutritional kitchen garden at KGBV school for girls in Mydukur mandal. 9th class students were aged 14 years was selected for this activity. 40 Children were divided into 4 groups and allotted each group to 3 vegetable crops. Children's are actively participated in sowing and to maintain their plots.



On 28.07.18, Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, initiated new FLD on integrated nutrient management in banana at Yerrballi village, Mydukur mandal. The scientist explained the importance of recommend dosage of fertilizer in banana for getting higher yield.



On 21.08.18, Dr. V. Nagarjuna, Research Associate (Soil Science) and Smt. R. Suneetha, Research Associate (Home science), from Krishi Vigyan Kendra, Vonipenta conducted a follow up visit in banana field for demonstration of waste decomposer application at Adireddypalli village in Mydukur mandal. The scientists demonstrated the application of diluted decomposer on leaf residue for hastening the decomposing process.



On 14.09.18, Dr. V. Yugandhar, Research Associate (Horticulture), and Dr. V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta conducted a follow up visit for FLD- INM practices in banana at Yerraballi in Mydukur mandal. The scientist demonstrated the foliar application of sulphate of potash application on (@ 5 gm / lit) banana bunches.

On 06.10.2018, G. Sandeep Naik, Scientist (Pl. Path) and Dr V. Nagarjuna, Research Associate (Soil Science) from Krishi Vigyan Kendra, Vonipenta have Conducted method demonstration on Rhizobium culture fortification in FYM. The scientists demonstrated mixing of 2 kg Rhizobium culture in 100kg FYM before sowing of the crop. They explained the method of preparation, importance of bio fertilizers in enhancement of crop yields, crop specific bio fertilizers and precautions to be taken while application of bio fertilizers.



On 08.10.18 G. Sandeep Naik, Scientist (Pl.Path) and Smt. Suneetha Runjala Research Associate (Home science) KVK, vonipenta, initiated FLD and conducted method demonstration on weeding with 5 pronged wheel hoe in cow pea at Settivaripalli village of Mydukur mandal. She explained regarding cost benefit in weeding with wheel hoe and aeration to plant, weeding efficiency and drudgery in energy expenditure.

On 06.11.2018 Dr. V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta, has provided marigold



cuttings of Arka Bangara-2 to beneficiary farmers at Mitamanupalli and Vonipenta village of Mydukur mandal under OFT. Scientist suggested to pinch the buds one month after planting for more branching and yield.



On 17.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have visited Sunkula gari palli village and conducted OFT in Banana bunch management. The scientists provided bunch cover to the beneficiary farmers and demonstrated covering of bunches, explained about benefits of bunch covers to get quality fruits which fetches good market price.

On 03.01.2019 Sri.G. SandeepNaik, Scientist, (Plant Pathology) and Dr.V. Yugandhar, Research Associate (Horticulture) from Krishi Vigyan Kendra, Vonipenta, have provided Chillies varieties – LCA-616 and CA-960 seedlings to the beneficiary farmers of Settivaripalli and Vonipenta villages of Mydukur mandal under OFT. Scientist explained about integrated crop management practices followed in chillies to farmers.



On 28.01.2019, Sri. G. SandeepNaik, Scientist, (Plant Pathology) and Dr. V. Nagarjuna, Research Associate (SS & AC) have provided Inputs like Azospirillum @ 2 Kgs and PSB @ 2 Kgs per acre under FLD “Application of Biofertilizers in Chillies to enhance crop yield”. The scientist explained about importance of biofertilizers in enhancing crop yields, method of application and precautions to be taken while application of biofertilizers.

On 30.01.2019, Dr. V. Nagarjuna, Research Associate (SS & AC) and Smt R. Sunitha, Research Associate (Home science) have conducted FLD on Assessment of waste decomposer culture for recycling of Turmeric and Banana crop residues at T. Kothapalli village. The scientists emphasized the importance of waste decomposer application for recycling of crop residues also explained the preparation of waste decomposer Goud, Research Associate, (Agril. Extension) from Krishi Vigyan Kendra, Vonipenta have Conducted a method demonstration on pruning management in Guava at vonipenta village of Mydukurmandal. The scientist explained and demonstrated about pruning and training management and flower and fruit management on branches in young stage of Guava to the farmers.



On 07.02.2019, Sri. G. SandeepNaik, Scientist, (Plant Pathology) and Dr. V. Yugandhar, Research Associate (Horticulture) have conducted method demonstration on seedling root dip technique in chillies. The scientists demonstrated the preparation of chemical solution by mixing Imidachloprid @ 0.5 ml and Carbendazim @ 1gr per litre of water and keeping the seedlings for 5min in chemical solution which gives protection for a period of 30 days from sucking pest complex and root rot diseases and also explained about IPM practices to be followed in chillies crop.





On 14.10.2019 Sri. G. Sandeep Naik, Scientist (Plant Pathology), DrV. Yugandhar, Research Associate (Horticulture) and E. Ravi Goud Research Associate (Extn) from Krishi Vigan Kendra, Vonipentahave conducted method demonstration on erection of sticky traps in chillies. Scientist explained about the importance of sticky traps in controlling sucking pest complex, different colours of sticky traps which attracts different types of insects under FLD “Management of viral diseases in chillies” at Settivaripalle village of Mydukur mandal.

HORTICULTURAL POLYTECHNIC, MADAKASIRA

We have prepared and showed Value added Products with Horticultural produce to local women in the village D.Echaladdi. we have prepared Fruit jam and Tomato Ketchup during NSS Camp.



On 30th March, 2019 We have prepared Bordeaux mixture in the college campus. We have showed to students the preparation method of Bordeaux mixture and Bordeaux Paste.



HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Dr.G.Ramanandam, Principal Scientist and Smt. B. Neeraja, Scientist, (Path) organized one field day programme on cocoa at Gopalapuram village of East Godavari district and demonstrated pruning techniques, identification of pests and diseases and its control to the farmers. About 220 farmers participated in the training programme on 22.12.18.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. A. Snehalatha Rani, Scientist (Plant Pathology) and R. Naga Lakshmi, Scientist (Hort.), HRS, Kovvur demonstrated the release of parasitoid *Encarsiaguadeloupe* against Rugose spiralling white fly on banana at HRS, Kovvur on 11.05.2018.
- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head participated in the demonstration of use of Drone technology against Spiralling whitefly in coconut at Kadiyam, Rajahmundry along with Dr. P. Chowdappa, Director, ICAR- CPCRI, Kasaragod, Kerala, Dr. Dilshan Singh, Director General, ICAR, Dr. J. Dilip Babu, Director of Research, Dr.YSR Horticultural University on 24.05.2018.
- Dr. K. Mamatha, Senior Scientist (Hort), HRS, Kovvur and Sri Paratpara Rao, Assistant Professor, College of Horticulture, VRGudem visited banana, turmeric and papaya fields





at Pasivedala village on 4.8.18 along with RAWEP students and interacted with the farmers. The students were demonstrated about the preparation of Jeevamrutham by sri VegiVenkataratnam a progressive farmer of Pasivedala.

- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur explained about the preparation of *Trichoderma harzianum* and demonstrated the multiplication of *Trichoderma* in FYM and neem cake to RHWEP students allotted to HRS, Kovvur on 4.9.18.
- Dr. R. Naga Lakshmi, Scientist (Hort.) and Sri. Ch.S. Kishore Kumar, Scientist (Pl. Path.) HRS, Kovvur participated in the method demonstration on soil sample collection conducted by Malakapalli RHWEP students on 6.9.18. Also visited banana and vegetable fields at Malakapalli village of west Godavari district along with
- Dr. A. Joseph Rajkumar, (Ag. Entomology), CPCRI, Kasaragod, Kerala, Dr.B.V.K. Bhagavan, Principal Scientist (Hort) & Head, Dr. K. Mamatha, Senior Scientist (Hort.) Dr. R. Naga Lakshmi, Scientist (Hort.), HRS, Kovvur, Dr. G. Ramanandam, Principal Scientist (Hort), Dr. N.B.V. Chalapathi Rao, Principal Scientist (Ento.), HRS, Ambajipeta, T.V. Subba Rao, DDH, West Godavari, Dr. M. Neelima, Horticulture officer, Kovvur demonstrated the release of *Encarsia guadeloupe* (Parasitoid) in the banana fields of HRS, Kovvur on 22.09.2018.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head, Dr. K. Mamatha, Senior Scientist (Hort), Dr. R. Naga Lakshmi, Scientist (Hort) and Dr. K. Ravindra Kumar, Scientist (Hort) along with RHWEP students allotted to Kovvur visited chrysanthemum grown under poly house at Chagallu village of Nidadavolu mandal and explained about the construction of structure and production technology of chrysanthemum under protected cultivation on 9.10.18. Demonstrated the erection of yellow sticky traps against whitefly in the polyhouse.
- Dr. K. Mamatha, Senior Scientist (Hort) and Dr. K. Ravindra Kumar, Scientist (Hort) along with RHWEP students visited HRS, Pandirimamidi and K.V.K. Pandirimamidi on 22.10.18. Dr. K. Manohar Prasad, Principal Scientist (Hort) & Head, Dr. K. Rajendraprasad, Scientist (Hort) and Sri P. C. Vengaiyah, Scientist (Food Tech) explained about different activities like processing of palmyrah, rubber and grafting techniques in cashew. Dr A Srinivas Principal Scientist & Head, Dr. Bhanumurthy, Scientist (Hort) and Dr. Adarsha, Scientist (PP), KVK, Pandirimamidi explained about the activities of KVK and apiary.
- Sri Ch.S. Kishore Kumar, Scientist (Pl. Path.), Dr. R. Naga Lakshmi, Scientist (Hort.), and Kum M.L.N. Nandini, TA (Pl. Path.) visited VNR guava orchard and imposed treatments for the management of nematodes on 2.11.2018.

CITRUS RESEARCH STATION, PETLUR

- *Trichoderma viridae* preparation
- Bordeaux paste preparation and application
- Bordeaux mixture preparation and application
- On 06.08.2018, Dr. B. GovindhaRajulu, Principal Scientist & Head and Dr. M. Kavitha, Scientist (Pl.Path.), Citrus Research Station Petlur., Subani, APMIP-PD, Nellore and





officers of Department of Horticulture, Nellore demonstrated the usage of Zeba in Horticultural crops particularly in acid lime orchards at Chaganam village of Saidapur mandal.

- On 13.02.2019, Dr. Dr. B. Govindarajulu, Principal Scientist & Head, CRS Petluru District level Acid lime farmers training programme organized at Citrus Research Station, Petlur and conducted demonstration on multiplication of *Trichoderma viride* to acid lime farmers of different clusters of Nellore District.

MANGO RESEARCH STATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized method demonstration of pruning and training of mango trees on 19.6.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized method demonstration light traps for managing insect pests of mango along with RHWEP students at Mango research station, Nuzvid on 19.12.2018
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized method demonstration of yellow and blue sticky traps for managing insect pests of mango along with RHWEP students at digavalli on 10.1.2019
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized method demonstration of Methyl eugenol lures for managing fruitfly of mango along with RHWEP students at digavalli on 14.2.2019

PHTRS, VENKATARAMANNAGUDEM

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, conducted one day demonstration cum training programme as a part of exposure visit to the **students of Ch.S.D.St. Theresa's Automomous College for Woman of Eluru** on the functioning and utility of Integrated Pack House cum Cold Storage Unit and also fruit and the preparation of mixed fruit jam making to students (46 no.) at vegetable processing unit visited on 04-04-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, along with Honorable board member **SriP.Govind, M.L.A (Anakapalli Visakhapatnam district, Dr. J. Dileep Babu, Director of Research and Dr. R.V.S.K. Reddy, Director of Extension at release of technical bulletin on preparation of mixed fruit jam and tomato ketchup** of Post Harvest Technology Research Station, Venkataramannagudem at 11th ZREAC meeting at Anakapalli, Visakhapatnam, on 13-04-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, is explaining the functioning of processing machinery at integrated pack house unit and preparation of dehydrated products as a part of **training programme to B.Sc. MBN Students (31no.) from Ch.S.D.St. Theresa's Automomous College for Woman, Eluru, West Godavari** visited on 30.05.2018.



- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, conducting the hands on **training programme on drying and dehydration of vegetables to trainees (6 nos.)** along with **Dr. V. Deepthi, Scientist (Agri.Ext), KVK, V.R.Gudem** visited on 19-07-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, explaining the functioning of processing machineries and functioning of ripening chamber, cold storage chambers and pre – cooling chamber at integrated pack house unit to **Agricultural Diploma students (12 no.)** on their **“Vigyan Yatra” Programme** from **Dr. K. L. Rao Krishi Vigyan Kendra, Garikapadu, Krishna District**, visited on 01-12-2018.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, conducted **one day training programme on preparation of mixed fruit jam and tomato ketchup** to **women entrepreneurs from West Godavari District** on 11-03-2019.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

1. Seed treatment in turmeric and ginger
2. Serpentine method of Propagation in Black pepper
3. Preparation of Bordeaux mixture (1%)

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

S.No.	Method demonstration	Beneficiaries	Date	Venue
1.	Mini set cutting of cassava stems	Farmers	June, 2018	HRS, Peddapuram

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

Place	Date	Participant & Designation	Particulars
Burrilanka East Godavari	25.01.18	Dr.K.Rajendra Prasad Scientist(Hort)	Demonstrated “Grafting techniques in Jamun”.
Pallantla West Godavari	8.03.19	Dr.K.Rajendra Prasad Scientist(Hort)	Demonstrated “Cashew Pruning techniques in high density planting”.
Gandhinagar West Godavari	21.3.2019	Dr.K.Rajendra Prasad Scientist(Hort)	Demonstrated “Cashew Pruning techniques in high density planting”.

G.GROUP DISCUSSIONS AND OTHER MEETINGS

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI



On 02.08.2018, Dr.R.V.S.K.Reddy, Director of Extension, Dr.YSRHU, V.R.Gudem&Dr.A.Srinivas, Sr.Scientist& Head, KVK, Pandirimamidi attended group discussion on medicinal and aromatic plants organized by LAYA, NGO at Addateegalamandal. Dr.R.V.S.K Reddy explained on nutritional aspects and cultivation practices regarding tubers,



medicinal and aromatic plants. Dr.A.Srinivas explained the KVK activities with special reference to TSP. Dr. Vineetha Sharma, Principal Scientist, DST addressed that KVK and LAYA both to work in convergence mode to maintain herbal gardens at KVK. In this programme LAYA, NGO Directors Dr. Venugopal, Nafeeza D Souza, Domnic D Souza, Chakradhar Babu, Bullaya from LAYA, NGO and 30 Ayurvedic members participated

On-Farm Trial on Introduction of New Paddy variety MTU-1153 (Chandra).



On 29.06.2017 Dr. R.V.S.K. Reddy, Director of Extension, Dr. A. Srinivas Sr. Scientist & Head and Sri P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi provided Paddy seed variety -MTU-1153 (Chandra) to 6 tribal farmers of Daravada, D.V.Kota villages of Mareudumillimandal and Bandapalli village of Rampachodavarammandal for conducting OFT on Introduction of New Paddy variety MTU-1153.

On Farm trial on Introduction of brinjal var. Arka Harshita in agency area.

On 02.07.18 Sri Bhanumurthy K.C, Scientist (Horticulture) and Dr. S. Adarsha, Scientist (Entomology) provided brinjal var. Arka Harshita seedlings which are tall and spreading with dark green foliage and fruits, resistant to bacterial wilt, good cooking quality and average yield- 35-40 t/ha. to beneficiaries of Irlapalli village of Rampachodavarammandal under OFT i.e. Introduction of brinjal var. Arka Harshita in agency area.



On Farm trial on Introduction of Tapioca var. PDPCMR-1 in agency area.



On 09.07.18 Dr.A.Srinivas, Senior Scientist & Head and Sri Bhanumurthy K.C, Scientist (Horticulture) provided Tapioca stems which are completely resistant to cassava mosaic disease, crop duration: 8-9 months with anyield of 43-46 t/hato beneficiaries of Amudalabanda village of Gangavarammandal under OFT.

On-Farm Trial on Finger Millet variety Bharati and Paddy variety DRR Dhan-45.



On 12.07.2018 P. Raja Sekhar, Scientist (SS&AC), Krishi Vigyan Kendra, Pandirimamidi provided Finger Millet seed variety Bharati and Paddy seed variety DRR-Dhan 45 (fortified rice, short duration, slender grain and resistant blast) to 10 tribal farmers of DFI villages I. Polavaram and Sokulagudem of Rampachodavarammandal for conducting On-Farm Trials. Scientists were demonstrated the method of seed treatment in finger millet with carbendazim @ 2 g/ kg to be done before sowing.

On-farm trial on soil test based nutrient management in chilli at Venkatayapalem village of Kunavarammandal



On 06.08.2018 P. Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi has collected soil samples of main fields at Venkatayapalem village of Kunavarammandal prior to the transplanting of chilli in order to evaluate the fertility status of the fields for the proper recommendation of fertilizers based on soil test values as a part of on-farm trial on soil test based nutrient management in chilli and also visited chilli nurseries which were one week old and healthy.



Visit to Brinjal var. Arka Harshita field (under OFT) at Irlapalli village of Rampachodavaram Mandal



On 05.09.18 Dr. R.V.S.K. Reddy, D.E, Dr.YSRHU, Dr.A.Srinivas, Principal Scientist and Head, Sri Bhanumurthy K.C, Scientist (Horticulture) and Sri. P.Rajasekhar, Scientist (SS&AC) of KVK, Pandirimamidivisited Brinjal field at Irlapalli village of Rampachodavarammandal under On Farm Trail i.e. Introduction of new brinjal var. Arka Harshita in agency area. The crop is at flowering, fruiting stage and suggested the farmer to go for foliar application of potassium rich nutrients (KNO_3 @ 5g/l) and NAA (planofix) @ 1ml/4.5 l within an interval of 15 days to improve the quality and yield.

Follow up visit to Tapioca field (under OFT) at Amudalabandha village of Gangavaram mandal

On 27.09.18, Sri Bhanumurthy K.C, Scientist (Horticulture), and Sri. P.Rajasekhar Scientist (SS& AC) of KVK, Pandirimimidivisited Tapioca field var. PDPCMR-1 at Amudalabandhavillage of Gangavaram mandal under On-farm trail. The crop is at 60 days old from transplanting, observed vegetative growth, no pest or disease incidence in PDP-CMR-1 whereas local cultivar is infected with Cassava mosaic virus and suggested the farmer to go for application of Dimethoate @ 2ml/l within an interval of 15 days.



Follow up visit to Paddy var. Chandra (MTU 1153) at Dharwada village of Maredumilli mandal



On 12.10.2018 Dr.S. Adarsha Scientist (Entomology) & technology agent from Krishi vigyan Kendra, Pandirimamidi visited Paddy var. Chandra (MTU 1153) fields under ATMA 2018-19. Crop is at milking stage observed rat damage suggested use of bromadiolone 0.005% along with bait for management of rats.

Follow up visit to paddy fields variety MTU-1156 and Dhan-45 at Kokkiragudem village of V.R.Puram mandal

On 28.11.2018 P. Raja Sekhar, Scientist (SS&AC), KVK, Pandirimamidi has visited paddy fields of MTU-1156 and Dhan-45 which was at harvesting stage in Kokkiragudem village of



V.R.Puram mandal. Crop performance of the variety MTU-1156 is good followed by Dhan-45 as compared to MTU-1010 & MTU-1001 under completely rainfed situation.

Visit to OFT on Fall Army Worm in Maize at Krishi Vigyan Kendra, Pandirimamidi



On 24.01.2019 Dr. J.V. Prasad, Principal Scientist, ATARI, and Dr. M. Nagesh, Principal Scientist-NBAIR visited OFT on Fall Army Worm trial at Krishi Vigyan Kendra, Pandirimamidi and collected NPV affected larvae and *Nomuraea* affected FAW larvae from the trial plots for further studies. Dr. A. Srinivas Principal Scientist & Head and Dr. S. Adarsha Scientist (Entomology) coordinated the program.

Initiation of Frontline demonstrations on IPM in brinjal and ICM in chillies



On 23.06.2018 Dr. A. Srinivas, Senior scientist & Head, Dr. S. Adarsha, Scientist (Entomology) and Sri. P. Raja Sekhar, Scientist (SS&AC) KVK, Pandirimamidi initiated demonstration of IPM in brinjal and Integrated crop management in chillies at Vedurupakala village of Gokavarammandal sponsored by ATMA. Provided critical inputs like *Trichoderma viride* in IPM in brinjal to three beneficiaries and LCA-625 seed in Integrated crop management in chillies to two beneficiaries.

Initiated Nutritional kitchen garden FLD for Anganwadi centers and farmers at I. Polavaram village under TSP-2018-19

On 11.07.2018 and 12.07.2018 Vegetable seed kits and *Trichoderma viride* were provided to the farmers of I. Polavaram village of Rampachodavarammandal under Front Line demonstration on Organic cultivation of Vegetables in Nutritional Kitchen garden. Miss Srividya Rani.N, explained the importance of nutritional kitchen garden and benefits of leafy vegetables in our lifestyle. In this programme Dr. A. Srinivas, Sr. Scientist & Head, Dr. S. Adarsha, Sri. P. Raja Sekhar & K. C. Bhanu Murthy and 38 farmers participated.



Provided critical inputs under CFLD Pluses-Demonstration of Redgram var. LRG 52

On 11.07.2018 and 12.07.2018 Dr. A. Srinivas Senior scientist & Head, Dr. S. Adarsha, Scientist (Entomology), Sri vidya rani. N Scientist (Extension) and Sri P. Raja sekhar Scientist (SS&AC) visited I. polavaram village of Rampachodavarammandal and provided critical inputs like Redgram var. LRG-52 seed and Rhizobium to the selected beneficiaries under CFLD Pulses sponsored by ICAR-ATARI zone-X.



Provided Chilli var. LCA-625 seed to beneficiaries (under FLD) of I. Polavaram village (Rampachodavaram Mandal)



On 12.07.18 Sri Bhanumurthy K.C, Scientist (Horticulture) and Sri P. Rajasekhar, Scientist (SS&AC) provided chilli var. LCA-625 seed



which are long slender fruits, 190-210 days, colour retention is high, yield: 65-75 q/hato beneficiaries of I.Polavaram village of Rampachodavarammandal under FLD i.e. Introduction of Chilli var. LCA-625 in agency area.

Follow up visit to CFLD-Redgram fields of Pamugandi and Labbarthi villages of East Godavari dt.



On 10.08.2018 & 14.08.2018 Dr.S.Adarsha, Scientist (Entomology), from Krishi Vigyan Kendra, Pandirimamidi and Techonology Agent conducted follow up visit to Redgram var. LRG-52 fields at Pamugandi of Devipatnammandal and Labbarthi village of Rajavommangi mandal. Crop is at vegetative stage (15 DAS and 30 DAS)

Follow up visit to Paddy fields at Bandapalli and Sokulagudem villages



On 26.07.2018 and 28.07.2018, P.Raja Sekhar, Scientist (SS&AC) and Miss Srividya Rani.N, Scientist (Extension), Krishi Vigyan Kendra, Pandirimamidi has visited paddy fields in Bandapalli village and paddy variety MTU-1153 (Chandra) nurseries at Sokulagudem village of Rampachodavarammandal. During the visit, scientists observed white rolled tips of young leaves due to boron deficiency in transplanted rice

fields and recommended the farmers to apply borax @ 0.1 % as foliar spray at this very vegetative stage and also soil application @ 3kg/ha during land preparation for once in every 2-3 years.

Visit to Brinjal field (under FLD) at Irlapalli village of Rampachodavaram Mandal

On 05.09.18, Dr. R.V.S.K. Reddy, D.E, Dr.YSRHU, Dr.A.Srinivas, Prinicipal Scientist, Sri Bhanumurthy K.C, Scientist (Horticulture) and Sri.P.Rajasekhar, Scientist (SS&AC) of KVK. Pandirimamidi visited Brinjal field at Irlapalli village of Rampachodavarammandal under frontline demonstration i.e. Soil test based INM in Brinjal. The crop is at flowering, fruiting stage and observed Red spider mite, and shoot & fruit borer infestation, suggested the farmers to apply Dicofol 5g/l for red spider mite, Profenophos @ 2 ml/l for shoot and fruit borer within an interval of 15 days after harvesting of mature fruits against shoot & fruit borer infestation.



Visit to paddy variety MTU-1153 at I.Polavaram village of Rampachodavaram mandal



On 05.09.2018, Dr. R.V.S.K Reddy, Director of Extension, Dr. YSRHU, Dr. A. Srinivas, Principal Scientist & Head and KVK Scientists, Pandirimamidi has visited paddy variety MTU-1153 (Chandra) at vegetative stage in I. Polavaram village of Rampachodavarammandal and interacted with

beneficiary farmer regarding this paddy variety.

Follow up visit to Blackgram fields at Vedurupaka village of Gokavarammandal



On 29.09.2018 Dr.S.Adarsha, Scientist (Entomology) and Miss N. Sri Vidya Rani, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi conducted follow up visit to blackgram Var. TBG 104 fields under CFLD- Blackgram 2018-19 sponsored by ICAR- ATARI at Vedurupaka village of Gokavarammandal. Crop is at flowering stage.



Visit to Vegetable plot & Azolla Unit at Vedurapakala village of Gokavaram mandal



On 04.10.2018, Dr.S. Adarsha Scientist (Entomology) & Srividya Rani. N, Scientist (Extension) Krishi Vigyan Kendra, Pandirimamidi visited leafy vegetable cultivation plots and azolla unit at vedurapakala village of Gokavaram mandal. Recommended for use of azolla as poultry feed and biofertiliser in rice fields and its method of application for effective usage of resources.

Follow up visit to demonstrations sponsored by ATMA 2018-19

On 09.10.2018, Dr. A.Srinivas Principal scientist & Head, S. Adarsha Scientist (Entomology) from Krishi vigyan Kendra, Pandirimamidi and Sri. Nagachari, DPD, ATMA, East Godavari district visited demonstration plots sponsored by ATMA 2018-19 at vedurupaka village of Gokavaram mandal and suggested suitable measures for pest and disease management in rice, chillies and brinjal crops.



Provided Tomato var. Arka samrat seedlings to beneficiaries (under FLD) of Gangavaram village (Gangavaram Mandal)



On 19.11.18 Dr. A.Srinivas, Principal Scientist & Head and Sri Bhanumurthy K.C, Scientist (Horticulture) provided tomato var. Arka Samrat seedlings and critical inputs to beneficiary of Satyanarayana Dora from Gangavaram village of Gangavaram Mandal under FLD i.e. **Demonstration of tomato hybrid “Arka Samrat” in agency areas**

Visit to Cashew orchards at Maddhirathigudem village of Devipatnam Mandal.

On 24.11.18 Sri Bhanumurthy K.C, Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi along with Sri.Rambabu, T.A, Pragati-NGO visited cashew orchards under FLD i.e. **In-situ soil and water conservation measures for sustainable cashew production technology in agency area** in Maddhiratigudem village of DevipatnamMandal. Crop is at new flush initiation stage and suggested the farmer about the measures to manage T-Mosquito bug infestation and to get good yields.



Follow up visit to Sorghum fields under CFLDs on Millets at Boosigudem village





On 10.12.2018, P. Raja Sekhar, Scientist (SS&AC) from Krishi Vigyan Kendra, Pandirimamidi has visited sorghum variety CSV-27 fields of cluster frontline demonstrations on millets under TSP at Boosigudem village of Rampachodavaram mandal and observed the crop at grain maturity stage.

Method demonstration in ICM- Cashew plots at Dokkapalem village of Addateegala mandal

On 13.12.2018 Dr.S.Adarsha, Scientist (Entomology), Sri P. Raja Shekhar, Scientist (SS&AC) and Sri.K.C.Bhanumurthy Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi explained various micronutrient deficiencies and pests of cashew and demonstrated use of Neem and Pongamia soap for control of Tea mosquito bug management in cashew as a part of “ICM-Cashew” sponsored by Tribal sub plan 2018. Provided inputs like Neem soap, pongamia soap and micronutrient mixture to farmers. Representatives of NGO-Tanager and 30 farmers from dokkapalem village participated the program.



FLD on Introduction of the Osmanabadi Goats in agency area of East Godavari District



On 24.01.2019 & 25.01.2019, Dr. J.V. Prasad, Principal Scientist, ATARI, Zone-X, Hyderabad and Dr.A.Srinivas Principal Scientist & Head, Krishi Vigyan Kendra, Pandirimamidi has visited Goat Unit at KVK institutional farm and provided four goat units to the tribal farmers of Regulapadu, I.Polavaram, Gangavaram villages of Rampachodavaram division of East Godavari District under the component of Tribal Sub Plan – 2017-18.

Front Line Demonstration on “Enhancement of Fruit Size and Quality in Banana” at Thimmapuram village of Addateegala mandal

On 31.01.2019, P. Raja Sekhar, Scientist (SS&AC) and K.C.Bhanumurthy, Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi has visited banana orchards under front line demonstration on “Enhancement of fruit size and quality in banana” under TSP-2018-19 at Thimmapuram village of Addateegala mandal and interacted with the farmers regarding nutrient management in banana. During the visit scientists explained about the removal of male buds after last hand is set for proper fruit development in banana and sprayings of sulphate of potash @ 5 g/litre at 10 days interval after full bunch formation.



Visited Chilli var. LCA- 625 field under FLD at Nandigama village of Yetapaka Mandal



On 16.02.19, Dr. R.V.S.K. Reddy. D.E, Dr.YSRHU, Dr.D. Manohar Prasad, Principal Scientist, Dr. Sarada, Principal





scientist, Lam, Guntur, Sri Bhanumurthy K.C, Scientist (Horticulture), Dr. S.Adarsha, Scientist (Entomology) and Sri. P.Rajasekhar, Scientist (SS&AC) of KVK, Pandirimamidi visited chilli var. LCA-625 fields under FLD i.e. **Demonstration of Chilli variety “LCA-625” in agency areas**. Crop is at flowering, fruiting stage with healthy leaves without any sucking complex infestation and farmers were hoping to get 20-25 quintals per acre. Farmers accepted the variety as it yields on par to their cultivating hybrids.

Follow up Visit to Banana field at Thimmapuram village of Addategala mandal

On 16.03.2019, P. Raja Sekhar, Scientist (SS&AC) and K.C.Bhanumurthy, Scientist (Horticulture) from Krishi Vigyan Kendra, Pandirimamidi has visited banana orchards under front line demonstration on “Enhancement of fruit size and quality in banana” under TSP-2018-19 at Thimmapuram village of Addategala mandal. During the visit, Scientists observed banana bunches which are undergone with schedule sprayings of sulphate of potash @ 5 g/litre at 10 days interval after full bunch formation and recorded yield and yield attributed characters.



Follow up visit to beekeeping units at Vadapalli and Seethapalli village of Rampachodavaram mandal



Dr.S.Adarsha, Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi visited beekeeping units established at Vadapalli and Seethapalli villages and suggested suitable recommendations for colony division.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Activity	No. of programmes	No of farmers	Extension personnel	Total
Group discussion	4	85	0	85

Activity	No. of programmes	No of farmers	Extension personnel	Total
Exhibition	4	428	57	485

On 02.05.2018, ‘KrishiKalyanKaryashala and Ghosthi’ was organized State Agriculture Department at KrishiVigyan Kendra, Periyavaram in which Dr.M.Kavita participated as Resource person. A stall of was also organized by KVK staff to acknowledge the farmers regarding the major activities





undertaken by the KVK.

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

ICAR-BSMA meeting:

Dr.A.V.D.Dorajee Rao, Professor (Hort.) and Dr.V.Sudhavani, COH, VRGudem attended the second ICAR-BSMA (Broad Subject Matter area) Horticulture workshop on restructuring of PG syllabus at BCKV, Kalyani, West Bengal from 21-02-2019 to 23-02-2019.

CITRUS RESEARCH STATION, TIRUPATI

- ICAR-AICRP QRT Team-2017 comprising of **Dr. K. L. CHADHA**, Former DDG (Hort. Sci.), ICAR & President (HSI), **Dr. B.M.C. Reddy**, Former Vice Chancellor, Dr.YSR Horticultural University, **Dr. SatyabrataMaiti**, Former Director, ICAR-Directorate of Medicinal & Aromatic Plants Research, Boriavi, **Dr. H. K. SENAPATI**, Ex-Dean (PGF cum DRI), OUAT, Bhubaneswar, **Dr. D. S. KHURDIYA**, Former Head, Division of Post-Harvest Technology, IARI, New Delhi, **Dr. V.S. THAKUR**, Director of Extension, Dr. YSP University of Horticulture & Forestry, Nauni, Solan & **Dr. Prakash Patil**, Project Coordinator (Fruits), IIHR, Bangalore visited Citrus Research Station, Tirupati on 04-04-2018 to review the progress of AICRP Citrus Project.
- Dr. K.T. Venkataramana, Principal Scientist (H) & Head, Dr. L. Mukunda Lakshmi, Scientist (Horti), Dr. D. Srinivas Reddy, Scientist (Ent.) and Dr. T. Rajasekharam, Scientist (PP) attended ZREAC-2018 (Rayalaseema Zone) Meeting at Z.P. Meeting Hall, Kurnool on 07-04-2018.
- Dr. T. Rajasekharam, Scientist (PP) attended ZREAC-2018 (Costal zone) Meeting as crop specialist at Anakapalli on 13-04-2018.
- Dr. K. T. Venkataramana, Principal Scientist (H) & Head, Citrus Research Station, Tirupati attended the Advisory Committee for Education, Research & Extension meeting on 12-04-2018 at Administrative Office, Dr YSRHU.
- Dr. K.T. Venkataramana, Principal Scientist (H) & Head; Dr. P.T. Srinivas, Senior Scientist (H); Dr. L. Mukunda Lakshmi, Scientist (Horti), Dr. D. Srinivas Reddy, Scientist (Ent.) and Dr. T. Rajasekharam, Scientist (PP) attended SLTP-2018 at Dr. Y.S.R. Horticultural University, V.R.Gudem from 17-04-2018 to 19-04-2018 and presented the technical programme.
- 50th meeting of Board of Management of Dr.YSRHU was held at Horticultural Research Station, Chinthapalli on 17.07.2018 under the chairmanship of Sri. Chiranjiv Choudhary, Vice-Chancellor, Dr.YSRHU, (FAC) & Ex-Officio Secretary to Govt. of Andhra Pradesh.
- Dr. L.Mukunda Lakshmi, Scientist (Hort), CRS, Tirupati attended the training on 18/07/2018 at Rajahmundry.
- Dr. K T V Ramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the 14th board of faculty for UG studies, Dr.YSRHU at International Guest House, Dr.YSRHU, Venkataramannagudem, West Godavari district on 10-06-2018.
- Dr. K T V Ramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the 21st Academic Council Meeting of Dr.YSRHU at International Guest House, Dr.YSRHU, Venkataramannagudem, West Godavari district on 11-06-2018.





- Dr. K T V Ramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the Bi-monthly T & V programme at Department of Horticulture at Office of the Commissionerate of Horticulture, Guntur on 27-06- 2018.
- 50th meeting of Board of Management of Dr.YSRHU was held at Horticultural Research Station, Chinthapalli on 17.07.2018 under the chairmanship of Sri. Chiranjiv Choudhary, Vice-Chancellor,Dr.YSRHU, (FAC) & Ex-Officio Secretary to Govt. of Andhra Pradesh.
- Dr. K.T. Venkataramana, Principal Scientist (Hort) & Head, Citrus Research Station, Tirupati attended the Doubling of Farmers Income and follow up action on the proceeding of the 5th Group Discussion of ICAR-AICRP on Fruits from 17th to 19th September-2018 at ICAR-IIHR, Bengaluru.
- Dr. K.T. Venkataramana, Zonal Research Head, Rayalaseema Zone accompanied Director of Research, Dr. YSRHU visited Horticultural Research Station, Mahanandi on 12-10-2018 for technical and office inspection for the year 2017-18.
- Dr. D. Srinivas Reddy, Scientist (Ento),CRS,Tirupati attended the training on one day workshop on Farmers Producer Organization (FPOs) & Tomato Value Chain Intervention from 23rd& 24th October, 2018 at Tirupati.
- Dr. K.T. Venkata ramana, Zonal Research Head, Rayalaseema Zone accompanied Director of Research, Dr. YSRHU visited Horticultural Research Station, Ananthapur on 14-11-2018 or technical and office inspection for the year 2017-18.
- Dr. K T. Venkataramana, Principal Scientist (Hort) has attended 22nd academic council meeting at Dr.Y.S.R. Horticultural University, V.R. Gudem on 11/12/2018.
- Dr. K T. Venkataramana, Principal Scientist (Hort), CRS, Tirupati along with Registrar and Dean, Sri Venkateswara Veterinary University attended the meeting at Sub-Collectors office, Tirupati on 17/12/2018.
- Dr. L. Mukunda Lakshmi, Senior Scientist (Horti),CRS,Tirupati attended as resource person for training on "Mango Management practices" at SiddarthAgro, Chittoor on 30-12-2018.
- Dr.K.T.Venkata Ramana, Member, Board of Management of DrYSRHU, Principal Scientist (Hort.) & Zonal Head, CRS, Tirupati attended 52nd meeting of Board of Management of DrYSRHU at University, V.R.Gudem on 25-01-2019.
- Dr.K.T.Venkata Ramana, Principal Scientist(Hort.) & Zonal Head, Dr L. Mukunda Lakshmi, Senior Scientist (Horticulture), Dr. D.Srinivasa Reddy, Senior Scientist (Ento.) and Dr. T. Rajasekhaam, Scientist (PP) CRS, Tirupati participated and presented technical programme in 6th Group Discussion-2019 at AAU, Jorhat, Assam from 14th to 16th February 2019.
- Dr.K.T.Venkata Ramana, Principal Scientist (Hort.) & Zonal Head, CRS, Tirupati attended SAC meeting on 21/02/2019 at KVK,Periyavaram.
- Dr.K.T.Venkata Ramana, Principal Scientist (Hort.) & Zonal Head, CRS, Tirupati attended meeting on Implementation of PMFBY and RWBCIS-Finalization of Crops/Term sheets, Insurances Units at O/o, Commissioner of Horticulture, Guntur on 06-03-2019.
- Dr.L. Mukunda Lakshmi, Senior Scientist (Hort.) &Dr.D. Srinivasa Reddy, Senior Scientist (Ento.) CRS, Tirupati attended meeting on sensitization workshop on KRISHI Portal at ICAR – National Research Centre for Banana, Tiruchirapalli on March 25, 2019.



- Dr. D. Srinivasa Reddy, Senior Scientist (Ento.), CRS, Tirupati participated and displayed the AICRP recommended technologies and exhibits at National Horticultural Fair, 2019 at IIHR, Bengaluru from 23-25th January, 2019.

CASHEW RESEARCH STATION, BAPATLA

- Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head and Dr. B. Nagendra Reddy, Scientist (Ento.) attended Pre ZREAC meeting at HRS, Lam on 06.04.2018 and presented the research findings for the year 2016-17.
- Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head and Dr. B. Nagendra Reddy, Scientist (Ento.) attended ZREAC meeting at VV Ramana Rythu Bharathi Bhavan, Anakapalli, Vishakapatnam district and Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head had clarified the doubts of farmers regarding cashew.
- Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head and Dr. B. Nagendra Reddy, Scientist (Ento.) attended 11th State Level Technical Programme (SLTP) meeting at Venkataramannagudem, from 17.04.2018 to 20.04.2018 and presented the research findings for the year 2016-17 and new research proposal for the year 2018-19 with respect to Crop Improvement, Crop Management and Crop Protection for Plan and Non-Plan projects.
- Sri. K. Umamaheswara Rao Scientist (Hort) & Head, Dr. B. Nagendra Reddy, Scientist (Ento.) and Smt. B. Vimala Scientist (Hort) attended Annual Group Meeting- 2018 of AICRP on Cashew at OUAT, Bhubuneswar, Odisha, from 06.12.2018 to 08.12.2018 and presented the work done report for the year 2017-18
- Quinquennial Review Team (QRT) members, Dr. T N Raviprasad, Member Secretary (QRT) & Principal Scientist (Agrl.Ent.), Dr. M G Bhat, Former Director, ICAR-DCR, Puttur and Dr. J C Bhatt, Former Director, ICAR-VPKAS, Almora, visited CRS, Bapatla on 07.01.2019 and reviewed the Research Projects completed, Nursery activities, varieties released and future thrust areas of CRS, Bapatla for the year 2013-18 and Dr. J. DilipBabu, Director of Research, Dr. YSRHU VR Gudem, Dr. L. Naram Naidu, Zonal Research Head, Coastal Zone-II were also accompanied the team.



Quinquennial Review Team (QRT) visited CRS, Bapatla on 07.01.2019

HORTICULTURAL RESEARCH STATION, KOVVUR





- Dr.B.V.K. Bhagavan, Principal Scientist (Hort.) & Head HRS, Kovvur participated in Zonal Research and Extension Advisory Committee meeting of Rayalaseema zone at Zilla Parishad Meeting Hall, Kurnool on 07.04.18.
- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head, Dr. K. Mamatha, Senior Scientist (Hort.), Smt. R Naga Lakshmi, Scientist (Horticulture), Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology) HRS, Kovvur participated in Zonal Research and Extension Advisory Committee meeting of coastal zone I & II at Anakapalli, Vishakapatnam district on 13.04.18.
- Dr. B.V.K. Bhagavan Principal Scientist (Hort.) & Head, Dr. K. Mamatha, Senior Scientist (Hort.), Smt. R Naga Lakshmi, Scientist (Horticulture), Dr. K. Ravindra Kumar Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology) HRS, Kovvur participated in the 11th State Level Technical Programme for 2018 -19 from 17th to 20th at Examination Hall, COH, Dr.YSRHU, Venkataramannagudem and presented the research work carried out at HRS Kovvur pertaining to 2017-18.
- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head, HRS, Kovvur and Dr. B. Srinivasulu, Sr. Scientist (Hort) & Head, HRS, Anantapuramu participated in the “2nd Reserve Buyers Sellers Meet – Mango and Mango products and Tropical Fruits” held at Mumbai on 15th & 16th May, 2018.
- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head participated in the action plan meeting KVK’s of Andhra Pradesh at RARS, Lam farm Guntur from 21st to 22nd of May 2018 as an expert member.
- Dr. B.V.K. Bhagavn, Principal Scientist (Hort.) & Head and Zonal Research Head, Coastal Zone I participated in the 14th Board of Faculty for UG Studies Meeting on 10.6.18 and Academic council meeting on 11.6.18 at the Head quarters, Dr. YSRHU, VR Gudem.
- Dr. R. Naga Lakshmi, Scientist (Hort.) HRS, Kovvur has participated in the training programme on “Protected cultivation - Chrysanthemum cultivation under Polyhouse” to the progressive farmers at River Bay, Rajahmundry on 19.9.2018. Dr. J. Dilip Babu, Director of Research, DrYSRHU, Sri R. Ram Mohan, PD, APMIP, Kakinada, Sri M. Saravanan, Assistant Director of Horticulture (SHM), Commissionerate of Horticulture, Andhra Pradesh, Sri K. Chitti Babu, ADH, East Godavari-3, Rajahmundry and other Horticulture Department staff also participated in the programme.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head and Dr. K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur interacted with banana farmers and traders for export of banana on 4.10.18.
- Dr. B.V.K. Bhagavan, PS (Hort) & Head, HRS, Kovvur participated in the 15th Board of Faculty for UG studies on 7.12.18 at International guest house, Dr YSRHU, VR Gudem
- Dr. B.V.K. Bhagavan, PS (Hort) & Head, HRS, Kovvur participated in the 22nd Academic council meeting on 11th December, 2018 at International guest house, Dr YSRHU, VR Gudem.
- Dr. B.V.K. Bhagavan, PS (Hort) & Head, HRS, Kovvur participated in the SAC meeting of KVK Kalvacherla at CTRI Rajahmundry on 21.2.2018.
- Dr. B.V.K. Bhagavan, PS (Hort) & Head, Dr K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur participated in the SAC meeting of KVK Venkataramannagudem on 27.2.2019.



- Dr. R. Naga Lakshmi, Scientist (Hort), HRS, Kovvur participated in the SAC meeting of KVK Pandirimamidi on 28.2.2019.

HORTICULTURAL RESEARCH STATION, MAHANANDI

- Dr. K.Subramanyam, Principal Scientist (PP) & Head and Dr. M. Tagore Naik, Scientist (H) attended and participated in ZREAC on 07-04-18 at Kurnool.
- Dr. K.Subramanyam, Principal Scientist (PP) & Head, Dr. M. Tagore Naik, Scientist (H) and Ms. B. Swathi, RA (Ento.) attended and participated in State Level Technical Programme 2018-19 on 17-04-2018 to 19-04-2018 at Dr. YSR Horticultural University, VR Gudem.
- Dr. K. Subramanyam, Principal Scientist (PP) & Head attended review meeting at Dr. YSR Horticultural University, VR Gudem on 20-04-2018.

MANGO RESEARCH SATATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized group discussion for managing insect pests of mango and other crops along with RHWEP students and farmers at Tukkuluru on 10.1.2019
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized group discussion for managing insect pests of mango and other crops along with RHWEP students and farmers at Digavalli on 11.1.2019.

H. FIELD DAYS/KISAN MELAS

KVK, VENKATARAMANNAGUEM

On 16.04.2018 Sri.G.Shali Raju, Scientist (Entomology) conducted field day on sesame in village Takkellapadu, Dwaraka Tirumala Mandal under Cluster front line demonstration on Oilseeds (CFLDs – Oil seeds) and recorded an average yield of 10.75 q/ha with the improved variety YLM – 66 where as the farmers existing variety Gowri recorded an average yield of 6.25 q/ha



On 25.03.2019, KVK, Venkataramannagudem organized a field day in black-gram variety TBG-104 cultivated under CFLD pulses - Rabi under NFSM- 2018-13 sponsored by ICAR- ATARI, Zone- X, Hyderabad at Takkellapadu Village of DwarakaThirumala mandal. This programme was coordinated by V. Deepthi (Agricultural extension) and B. Rupa Devi (Soil Science and Agricultural Chemistry). Interacted with the farmers regarding variety, expenditure and expected yield.

Dr.K.Venkata Subbaiah Scientist (Hort.) Sri.G.Shali Raju Scientist (Entomology), KVK, V.R.Gudem and Dr.K.Mamatha Scientist (Hort.) HRS, Kovvuru arranged exhibition stall on the eve of Kisan Mela at RARS, Maruteru





On 28.06.2018 G.Shali Raju Scientist (Entomology), Dr.V.Deepthi Scientist (Agrl Extension) and Dr.T.Vijaya Nirmala Scientist (Vet Science) KVK, V.R.Gudem attended Eruvaka Pournami programme at Kokkerapadu village organised by Department of Agriculture. Sri.Chintamaneni Prabhakar, MLA, Denduluru & Chief VIP, Govt.A.P and Sri.Katamaneni Bhaskar IAS, District Collector, W.G. District inaugurated the programme in the august presence of district officials of all line departments and Public representatives.



On 30-12-2018, KVK Venkataramannagudem arranged exhibition stall at Educational museum on the occasion of inauguration of university buildings by Hon'ble Agriculture, Horticulture and Sericulture minister Sri. Somireddy Chandramohan reddy. VIPs visited the museum and enquired about various technologies

Dr. E. Karuna Sree, Principal scientist and Head and Dr. K. Venkata Subbaiah, Scientist (Horticulture) attended as committee members to Golden Jubilee celebration of Horticultural Research Station, Kovvur on 8-1-2019. In this program Dr. E. Karunasree, Principal scientist and Head actively involved in reception and invitation committee and dias committees and Dr.K. Venkata Subbaiah, Scientist (Horticulture) actively involved in exhibition committee for smooth running of the golden jubilee celebrations.



As per the University order Dr. E. Karuna Sree, Principal Scientist and Head, Dr. K. Venkata Subbaiah, Scientist (Horticulture), KVK, Venkataramannagudem and Sri. K.C. Bhanu murthy, Scientist (Horticulture) KVK, Pandirimamidi have arranged a exhibition stall in National Horticulture Fair-2019 at IIHR, Hesaraghatta, Bengaluru. In this fair our University exhibition stall got second prize under university category.

Dr. T. Vijaya Nirmala, Scientist (Veterinary Science), Dr.V.Deepthi, Scientist (Agri.Extension) and B.Rupadevi, Research Associate, KVK, Venkataramannagudem participated and arranged the exhibition stall at Kisan mela organised by RARS, Marteru on 26-03-2017.



KRISHI VIGYAN KENDRA, PANDIRIMAMIDI



On 21.04.2018, P Raja Sekhar, Scientist (SS&AC) and Miss. N. Sri Vidya Rani, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi conducted field day on sesame variety YLM-66 at



Thimmapuram village of Addateegalamandal. KVK Scientists interacted with farmers and taken feedback regarding performance of this variety over local cultivar followed by technical sessions on cultivation of improved varieties of sesame. In this programme, Sri Gandhi, MAO, Addateegala, Sri Baburao, BTM, ATMA, Addateegala, Sri Venkateswarlu, Sarpanch, Addateegala and 28 farmers were attended.



On 08.05.2018 Dr. A. Srinivas, Sr. Scientist & Head, Dr. S. Adarsha, Scientist (Entomology) and Miss. Sri Vidya Rani, N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi has conducted field day on Demonstration of T- Mosquito bug management in Cashew at D.N. Palem village of Devipatnam mandal. Sri Babu Rao Pragathi NGO, Sri Srinivas, HO, ITDA and 36 farmers participated the program. Expected yield was 2.8 Q/acre.

On 17.11.2018, Krishi Vigyan Kendra, Pandirimamidi has conducted Field Day on Introduction of New Paddy Variety MTU-1153 (Chandra) at Darwada village of Maredumilli mandal under ATMA. Sri Seethamshetty Venkateswarlu, Ex-MLA, Rampachodavaram, Smt. Padmaja, Project Director-ATMA, Sri Nagachari, DPD-ATMA observed the crop performance along with Dr. A. Srinivas, Principal Scientist & Head, Pandirimamidi interacted with tribal farmers regarding crop duration, pest & disease incidence. To assess the yield per acre conducted Crop Cutting Experiment by 5 X 5 m method in which farmer got 13.80 kg of grain yield from 25 m² area and estimated yield of about 2.20 tonnes per acre under completely rainfed condition as compared to the average yield of 1.85 t/acre in MTU-1010. Sri P Raja Sekhar, Scientist (SS&AC) and Miss. Sri Vidya Rani, Scientist (Extn.) conducted technical sessions on varietal characters, nutrient management and pest & disease management in paddy. In this programme Sri Laxmana Rao, MAO, Maredumilli and 62 tribal farmers were participated from 3 villages Darwada, D.V.Kota and Busigudem.



On 12.12.2018, Krishi Vigyan Kendra, Pandirimamidi has conducted field day on **Introduction of New Paddy Variety DRR Dhan – 45** under FLD at I. Polavaram village of Rampachodavaram mandal. KVK has provided seed and basic inputs to the tribal farmers & Scientists observed the crop performance regularly and provided need based support at field level. To disseminate the technology to the farmers, organized field day in the village. In this programme Dr. A. Srinivas, Principal Scientist & Head, Pandirimamidi has participated and interacted with tribal farmers regarding crop duration, pest & disease incidence and get the positive response from farmers. In this programme Sri. Prabhakar, Agricultural Officer, Sri. Rajashekar, Scientist (SSAC), Dr. Adarsha, Scientist (PP), Sri. K.C. Bhanumurthy, Scientist (Horti) and village farmers were participated.

On 19.12.2018 Krishi Vigyan Kendra, Pandirimamidi has conducted field day on Sorghum variety CSV-27 under TSP-2018-19 at Vanakarai village of Jaddangi mandal. Dr. A. Srinivas, Principal Scientist & Head and Sri P Raja Sekhar, Scientist





(SS&AC) has visited sorghum fields at harvesting stage and taken feedback from the farmers regarding crop duration, pest & disease incidence and their acceptance for this variety over local variety. In this programme Sri Chakradharababu, Laya NGO and 16 farmers have participated.



On 21.12.2018, Dr.A. Srinivas, Principal Scientist & Head and Dr. S. Adarsha, Scientist (Entomology) fom KVK, Pandirimamidi conducted field day on demonstration of Blackgram var. TBG 104 at Dharwada village of Maredumilli mandal. Conducted crop cutting experiment and obtained 3.58kgs per 5×5 m²area. The estimated yield was 5.78q/acre. In this program Sarpanch Lachireddy and 15 farmers were participated.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Activity	No. of programmes	No of farmers	Extension personnel	Total
Field Day	1	25	0	25

Ms. S.M.Sailaja, Research Associate (Horticulture), KVK, Periyavaram, conducted field day on Black gram variety TBG-104 under CFLD at KVK, Periyavaram on 02.02.2019. The varietal acceptance from farmers is good in terms of yield and viral resistance. On this occasion, pocket calendar was released on the cultivational aspects of Black gram for ease of farmers reference. Dr. M.Kavitha, KVK, Periyavaram In-Charge Head and Dr. B.Govindarajulu CRS Principle Scientist & Head, as chief guests, addressed the gathering.



KRISHI VIGYAN KENDRA, VONIPENTA



On 05.02.2018, Dr. V. Yugandhar, Research Associate (Horticulture) and Dr. V. Nagarjuna, Research Associate (SS & AC) have visited Sunkula gari palli village to follow up OFT in Banana bunch cover management. The scientists analysed the comparative advantage of Banana bunch covers with uncovered bunches pertaining to yield, size, quality, weight and pest incidence parameters.



On 20.04.2018, Dr. V. Nagarjuna, Research Associate (SS & AC) and Dr. J. Yoga Narasimhulu Naidu Research Associate (Extension) have conducted followup for FLD on enhancing banana bunch yield through application of N, K and S at Adireddipalli village, Mydukur mandal. The scientist collected the yield parameters and particular details regarding the assessment of FLD.

On 10.05.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology), Dr. V. Nagarjuna Research Associate (Soil Science) and Dr. J.



Yoga Narasimhulu Naidu Research Associate (Extension) have conducted a field day for OFT on “**Demonstration of Foxtail millet-Korra variety Surya Nandi**” at settivaripalle village of Mydukur Mandal. During the field day scientists explained about the introduced variety Surya Nandi regarding resistance to pests and diseases, giving higher yields compare to local cultivar with less quantity of seed rate.

On 13.12.2018, technical team of Krishi Vigyan Kendra, Vonipenta organized a field day in Blackgram variety TBG- 104 cultivated under Cluster Front Line Demonstrations- Pulses under NFSM- 2018 sponsored by ICAR- ATARI, Zone- X, Hyderabad at Madirepalli Village of Duvvur mandal. Dr RVSK Reddy, Director of Extension, Dr YSR Horticultural University participated as chief guest and addressed the farmers on importance of pulses in our daily diet, pulses enriches the soil fertility and also suggested the farmers to store the produce for seed material in coming season and interacted with the farmers regarding cultivation practices, expenditure and expected yield. Sri Venkata Subbaiah, ADA, Mydukur addressed the farmers to cultivate the crops based on water availability and cultivation of less water consumption crops during drought situation. Followed by visited the Blackgram cultivated fields and interacted with the farmers and they responded positively regarding the performance of Blackgram variety TBG 104, which is resistant to MYMV disease and seeds are bold and shiny which fetches good market price.



On 31.12.2018, Sri. G. Sandeep Naik, Scientist, (Plant Pathology) and Sri. E Ravi Goud, Research Associate, (Agril. Extension) attended a field day conducted by the technical team of DAATTC, Utukur, Kadapa dist in Greengram variety of GGG- 1, cultivated in limited area through minikits. Followed by they visited the Greengram fields and interacted with the farmers and they responded positively regarding the performance of Greengram variety GGG -1, which is resistant to YVMV disease and seeds are bold and bigger compare to LGG-460, which fetches good market price.



On 02.02.2019, technical team of Krishi Vigyan Kendra, Vonipenta organized a field day in Redgram variety LRG- 52 cultivated under Cluster Front Line Demonstrations- Pulses under NFSM- 2018 sponsored by ICAR- ATARI, Zone- X, Hyderabad at Tanguturu Village of Rajupalemmandal. Dr RVSK Reddy, Director of Extension, Dr YSR Horticultural University participated as chief guest and addressed the farmers on importance of pulses in our daily diet, pulses enriches the soil fertility and also suggested the farmers to store the produce for seed material in coming season and interacted with the farmers regarding cultivation practices, expenditure and expected yield. Sri Poorna Chandra Sekhar, BTM, ATMA, Mydukur addressed the farmers regarding cultivation of Redgram under drip irrigation system through transplanting method by raising nursery fetches good yields. Followed by visited the Redgram- LRG- 52 cultivated fields and interacted with the farmers and they responded positively regarding the performance of Redgram variety LRG-52, which is short duration (155-160 days), suitable for both *kharif* and *rabi* seasons, resistant to wilt, sterility mosaic disease and seeds are bold which fetches good market price.



On 02.02.2019, technical team of Krishi Vigyan Kendra, Vonipenta organized a field day on bunch management techniques Banana, sponsored by Agricultural Technology Management Agency (ATMA), YSR Kadapa dist at Sunkulagaripalle Village of Mydukurmandal. Dr RVSK Reddy, Director of Extension, Dr YSR Horticultural University participated as chief guest and addressed the farmers on bunch management techniques like, covering of bunches with boot leaf to protect the bunches from sun scorching, application of sulphate of potash @ 0.5% on active leaves 5 and 15 days after removal of male flower, covering of bunches with bunch covers to protect bunches from pest and disease infestation. Dr V.L SatyaPrakash, Project Director, ATMA, Kadapadist addressed the farmers on bunch management techniques will gives good quality crop which fetches good market price and also suggested the farmers to follow bunch management techniques to get good market price. Followed by visited the Banana fields and interacted with the farmers and they responded positively regarding the technology demonstrated, which gives good quality, shiny fruits which fetches good market price.



On 28.03.2019, technical team of Krishi Vigyan Kendra, Vonipenta organized a field day on Integrated crop management in Turmeric, sponsored by Agricultural Technology Management Agency (ATMA), YSR Kadapa dist at T. Kothapalli Village of Mydukur mandal. Sri. U. Nagaraju, Horticultural Officer, Mydukur mandal participated as chief guest and addressed the farmers best management practices to be followed in the turmeric for getting good quality and higher yields. Sri. G. Sandeep Naik, Scientist (Pl. Path) addressed the farmers importace and method of seed treatment to be followed in turmeric against pests and diseases. Sri Poorna Chandra Sekhar, BTM, ATMA, Mydukur addressed the farmers on best management practices and new technologies to be followed for getting good quality produce which fetches good market price and also suggested the farmers to follow Integrated crop management techniques to get good market price. Followed by visited the Turmeric fields and interacted with the farmers and they responded positively regarding the technology demonstrated, which gives good quality, shiny fruits which fetches good market price.

Sri. G. Sandeep Naik, Scientist, (Plant pathology) and KVK staff attended Kisan Kalyan Karyashala conducted by ATMA and Department of Agriculture.



Research Associate (Horticulture) from KVK, VPT had attended Krishi Kalyan Abhiyan programme –II organised by Dept. of Horticulture



HORTICULTURAL RESEARCH STATION, KOVVUR

Dr.B.V.K. Bhagavan PS (Hort) & Head, HRS, Kovvur and Zonal research head, Coastal zone I participated in T&V bimonthly meeting organised at office of the commissionerate of Horticulture at Guntur on 27.6.18 and presented the latest technologies seasonal and crop conditions of fruit crops.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Dr.G.Ramanandam, Principal Scientist and Smt. B. Neeraja, Scientist, (Path) organized one field day programme on cocoa at Gopalapuram village of East Godavari district and demonstrated pruning techniques, identification of pests and diseases and its control to the farmers. About 220 farmers participated in the training programme on 22.12.18.

CITRUS RESEARCH STATION, TIRUPATI

Citrus Research Station, Tirupati conducted one day “Field Day on Production and Protection Technologies in Citrus (Sweet orange and Acid lime)” being organized under RashtriyaKrishi Vikas Yojana at BhuchinaiduKandriga village, Chittoor District on 07-09-2018. Dr. K.T. Venkataramana, Principal Scientist (H) & Head, Dr. L. Mukunda Lakshmi, Senior Scientist (Horti), Dr. D. Srinivas Reddy, Scientist (Ent.) and V.Gopi, CRS, Tirupati and Departments officers were attended.

CITRUS RESEARCH STATION, PETLUR

On 05.12.2018, Dr. B. Govindarajulu, Principal Scientist & Head, CRS Petluru, participated in World Soil Day-2018 distribution of soil health cards, bringing awareness in farmers about soil health management, display of demon- strations about soil health practices, live demonstration of mini soil testing equipment were carried out in the presence of officials and farmers.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

Dr.R.Nagaraju, Senior Scientist (Hort.) & Head & Sri D. Sreedhar, Scientist (Horti.), HRS, Ananthrajupeta along with Department Officials attended “Eruvaka Purnima” programme on 28-06-2018 and delivered lecture on cultivation aspects of Mango, Guava and Papaya and Inaugurated field operations.



Hon'ble Chief Minister Sri N. Chandra Babu Naidu visited the stalls organised by the University in Jnanabheri Programme on 4-12-2018 and appreciated the innovative techniques displayed in the stall and announced Rs. 5,00,000/- as promotional grants to take up further research by students. Dr. R. Nagaraju, Principal Scientist (Hort) & Head, HRS, Anantharajupeta, Dr. M. Ramakrishna, Associate Dean, Dr. K. Swarajya Lakshmi, Professor (Hort), guided and motivated the Final year students of B.Sc., Hons (Hort), College of Horticulture, Anantharajupeta, in participating the event.

MANGO RESEARCH STATION, NUZVID





- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) participated in field day for managing insect pests of mango and other crops along with RHWEP students and farmers at Tukkuluru on 17.1.2019
- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) participated in field day for managing insect pests of mango and other crops along with RHWEP students and farmers at Digavalli on 18.1.2019

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 20.08.18 at AMC yard, Chintapalli
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 03.09.2018 at AMC yard, Chintapalli
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 17.09.2018 at AMC yard, Chintapalli
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 01.10.2018 at AMC yard, Chintapalli
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 15.10.2018 at AMC yard, Chintapalli
- Dr. V. Sivakumar, Scientist (Hort.) & Head, HRS, Chintapalli attended Polampilustundiprogramme on 05.11.2018 at AMC yard, Chintapalli

HORTICULTURAL RESEARCH STATION, DARSI

S. No.	Date	T & V programme	Place
1	21.07.18	Dr. M. Mutyala Naidu, Senior Scientist (Horti.) & Head attended to T&V meeting and suggested measures to be followed in July & August pertaining to horticultural crops.	ARS, Darsi

HORTICULTURAL RESEARCH STATION, MAHANANDI

- Dr. M. Tagore Naik, Senior Scientist (H), attended and participated in interaction programme on “Pradhan Mantri Kisan Sampada Yojana Pathakam” organized by All India Radio (AIR), Kurnool on 19-09-18.
- Dr. M. Tagore Naik, Senior Scientist (H) delivered a radio talk “Mirapa kootasamayamlotesukovalasinacharyalu” at AIR, Kurnool on 24-01-19.

I.MASS COMMUNICATION

With a view to reach a large number of farmers with the latest technologies and methods, scientists of the university are regularly giving radio talks, TV programmes and literature and



publications through print media in local language, guest lectures through various departments, institutons and NGOs etc.

a) RADIO PROGRAMMES

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUEM

- Dr. K. Venkata Subbaiah, Scientist (Horticulture) participated as resource person in phone –in – live programme on vegetable cultivation and Guava orchard management through video conference on 20-9-2019. The programme was conducted by Reliance foundation.
- Sri G.Shali Raju, Scientist (Ento), KVK, Venkataramannagudem attended a recording on “KobbariniAshinchuCheedapeedalaYajamanyam” at All India Radio, Vijayawada on 12.12.2018.

KRISHI VIGYAN KENDRA, PANDIRIMMIDI

Radio talk on JeedimamidiloMelainaYajamanyaPaddhathulu

On 01.05.2018 Sri.K.C.Bhanu Murthy, Scientist (Horticulture), KVK, Pandirimamidi has given radio talk on JeedimamidiloMelainaYajamanyaPaddhathulu at Radio station Visakhapatnam.

Radio talk on BhoosaaraParikshaPramukhyathamariyu Matti NamunaluTesePaddatulu

On 10.05.2018 Sri.P.Raja Sekhar, Scientist (SS &AC), KVK, Pandirimamidi has given radio talk on “ BhoosaaraParikshaPramukhyathamariyu Matti NamunaluTesePaddatulu” at Radio station Visakhapatnam.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Activities	TOTAL
Radio Talks	5

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUEM

- Dr.V Sudha Vani, Asst prof (Horti.), COH, VR Gudem gave a radio talk on “Mamidikothaanatharumthotallothesukovalsinajagrattalu” at AIR, Vijayawada on 18th June, 2018.
- Dr. D.R.SalomiSuneetha, Associate Professor (Biochem) participated in radio talk on “Edugudalamariyuhaarogyaparirakshanaloproteinlapradhanyatha” on 25.06.18 at AIR, Vijayawada.



- Dr. P.Subbaramamma, Asst. Prof (Pl.Phy), COH, VRGudem participated radio talk on “Grameenapattanaavasalaralokuragayalapempakam- Tesukovalasinajagrattalu” at AIR, Vijayawada on 30.07.18.
- Sri. B. Chennakesavulu, Asst Prof (Ag.Eng) attended radio talk at AIR, Vijayawada on the topic “Sprinkler and rain gun irrigation systems, management and importance” on 04.08.18.
- Dr.K.Uma Jyothi, Associate Dean has attended radio talk recording on “Carrot Beet root saagu-Melaina Yajamaanya Paddatulu” on 21-12-2018
- Dr.D.R.Salomi Suneetha, Professor (Biochem) have attended radio talk recording on 20-12-2018 on “ Molakettina ginjala valana prayojanalu
- Dr.P.Subbaramamma, Assistant Professor has attended radio talk recording on “AnanukulaVathavaraparisthithulalopoolaparinamakramamulokaligemarpulu” at All India Radio, Vijayawada on 10-01-2019.
- Dr.T.Suseela, Associate Professor attended a recording on “ Alankaranakuanuvaina Anthurium PoolaSaagu’ at All India Radio, Vijayawada on 12.03.2019.
- Dr.G.Kranthi Rekha, Assistant Professor attended a recording on “Varshikamunagasaagu lo melukavalu’ at All India Radio, Vijayawada on 15.03.2019.
- Dr.K.Seshkiran, Assistant Professor attended a recording on “ Jeeva NyantranaPaddatulaDwaraUdyanaPantalanuasinchutegullu-Yajamanyam’ at All India Radio, Vijayawada on 21.02.2019.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl. No.	Date	Topic	Station	Scientist participated
1.	17.05.18	KobbariSaagukuAnuvainaRakalu – YajamanyaPaddathulu	All India Radio, Visakhapatnam	Dr. G. Ramanandam, Principal Scientist (Hort.)
2.	10.10.18	Kobbariniaasinchepurugulu – YajamanyaPaddathulu	All India Radio, Visakhapatnam	Dr.N.B.V.Chalapathi Rao, Senior Scientist (Ent.)
3.	16.03.19	KobbariSaagukuAnuvainaRakalu – YajamanyaPaddathulu	All India Radio, Visakhapatnam	. G. Ramanandam, Principal Scientist (Hort.)

CASHEW RESEARCH STATION, BAPATLA

Sri. K. Umamaheswara Rao, Scientist (Hort.) attended the Radio talk on the topic “ JeediMamidiYajamanyaPaddathulu” at All India Radio, Vijayawada on 28.01.2019

HORTICULTURAL RESEARCH STATION, KOVVUR





- Dr. K Mamatha, Senior Scientist (Hort.), HRS, Kovvur has given a radio talk on “Chemasagulumelynayajamanyapaddatulu” at All India Radio, Vijayawada which was broadcasted on 12.6.2018.
- Dr. K. Mamatha, Sr Scientist (Hort.), HRS, Kovvur attended recording of radio talk on “Kanda saagulumelakuvalu” at All India Radio, Vijayawada on 25.2.2019.

CITRUS RESEARCH STATION, PETLUR

Dr.B.Prathap, Scientist (Agronomy), CRS, Petlur attended All India Radio, Vijayawada on 05-02-2019 to record radio talk on “**PandlaThotallo Mulching Pramukhyatha**” which was broadcasted on 14-02-2019.

HORTICULTURAL RESEARCH STATION, ANANTHAPURAMU

Delivered six Radio programmes at All India Radio, Anantapuramu and two television programme at DoordharshanSaptagiri

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA-2

HORTICULTURAL RESEARCH STATION, VIJAYARAI

Radio talk on ‘Oil palm thotalaladhikadigubadulakucharyalu’ broadcasted in AIR

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Dr. P.Rama Devi, Senior Scientist (PP) delivered a talk on “Tamalapakuthotalayajamanyapaddatulu” at All India Radio, Vijayawada on 19.4.2018.
- Dr. P.Rama Devi, Senior Scientist (PP) delivered a talk on “Oushadasugandhathailapantalaasaaguvidhanalu” at All India Radio, Vijayawada on 10.10.2018.
- Smt. D. Aparna, Scientist (Hort.) given radio recording on “OushadaMokkalanundiviluvaaadharithautpathulathayaari” at All India Radio, Vijayawada on 12.10.2018.

MANGO RESEARCH STATION,NUZVID

- Dr.RRajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid ‘Mamidikayaperigedasalomariyukothasamayamloteesukovalasinayajamanyapaddatulu’ at Radio station, Vijayawada on 20.04.2018
- Dr.RRajyalakshmi, Sr.Scientist (Hort) & Head, MRS, Nuzvid ‘mamidilopoothasakalamloravataniikiprastuthaparisthithulalopatinchavalasinacharyalu’ at Vijayawada on 20.12.18.
- Dr.B.K.M. Lakshmi, Scientist (Pl.Patho), MRS, Nuzvid. Attended Radio talk ‘Pest & Disease management in mango’ at Radio station, Vijayawada on 19.02.2019

b) TELEVISION PROGRAMMES

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM





Dr. A.V.D.Dorajee Rao, Associate Professor (Hort.) participated in phone in live programme through Doordarshan on 26.07.18 about hybrid marigold.

COLLEGE OF HORTICULTURE, PARVATHIPURAM

PasidiPanatalu -- Topic :VesaviKalanikianuvaina pula saguyajamanyam by Dr. P.LalithaKameswari, Asst. Professor (Hort)

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl. No.	Date	Topic	Station	Scientist participated
1.	7.09.18	KobbarithotalloYeruvulayajam anyam	Doordarshan, Vijayawada	Dr.G.Ramanandam, Principal Scientist, (Hort.)
2.	7.09.18	KobbarithotalloKeetakayajama nyam	Doordarshan, Vijayawada	Dr.N.B.V.Chalapathi Rao, PrincipalScientist (Ent.)
3.	7.09.18	Kobbarilo Antharapantalu Pandinchutalo yajamanya Paddathulu	Doordarshan, Vijayawada	Dr.E.Padma, Senior Scientist (Hort.)
4.	7.09.18	KobbariloTegulluvatiyajamany aPaddathulu	Doordarshan, Vijayawada	Smt. B.Neeraja, Scientist (Path.)
5.	22.09.18	CocoaloTegulluVatiYajamany am	ETV, Annadata	Smt. B.Neeraja, Scientist (Path.)
6.	24.09.18	CocoaloPurugulaYajamanyam	ETV, Annadata	Dr.N.B.V.Chalapathi Rao, PrincipalScientist (Ent.)
7.	24.09.18	Kobbarilo Antharapantalu Pandinchutalo yajamanya Paddathulu	ETV, Annadata	Dr.E.Padma, Senior Scientist (Hort.)
8.	25.10.18	Pasidipantalu Phone in Live programme on “KobbariloAdhikadigubadulakuSuchanalu – AntharaPantaluvaatiyajamanyam”	Doordarshan, Vijayawada	Dr.G.Ramanandam, Principal Scientist, (Hort.)
9.	1.11.18	Ganoderma disease management practices in coconut.	10 TV	Smt. B.Neeraja, Scientist (Path.)
10.	1.11.18	Pest management in coconut	10 TV	Sri. D. Rakshith Roshan Research Associate (Ent.)
11.	29.11.18	Phone in Live Programme on “SrikakulamloKobbariRythulakuSalahalu – Soochanalu	ETV	Dr. G.Ramanandam, Principal Scientist, (Hort.)
12.	5.01.19	KobbariloAntharaPantalaSaagu	10 TV	Dr. G.Ramanandam, Principal Scientist, (Hort.)
13.	5.01.19	Pest management in coconut	10 TV	Dr.N.B.V.Chalapathi





				Rao, Principal Scientist (Ent.)
14.	5.01.19	Disease management in coconut	10 TV	Smt. B. Neeraja, Scientist (Path.)
15.	18.03.19	Phone in Live Programme on “Kobbari Thotallonilakadagadi gubadulakuvesavilocheppattaval asina Yajamanya Paddathulu”	Doordashan, Vijayawada	Dr. G.Ramanandam, Principal Scientist, (Hort.)

CASHEW RESEARCH STATION, BAPATLA

Sri. K. Umamaheswara Rao, Scientist (Hort.) & Head attended the Phone in Live programme in Pasidi Pantalu on the topic “ Jeedi Mamidi Sagu- Melakuvalu” at Doora Darshan Kendra, Vijayawada on 06.08.2018.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. K. Mamatha, Senior Scientist (Horticulture) gave a programme to ETV, Annadata on “Cultivation practices of Elephant foot yam” which was telecasted on 23.05.2018.
- Dr. A. Snehalatha Rani, Scientist (Plant Pathology) gave a programme to ETV, Annadata on “Nematode problems of Horticultural Crops and their management” which was telecasted on 26.5.2018.
- Dr. A. Snehalatha Rani, Scientist (Plant Pathology) gave a programme to ETV, Annadata on “Sigatoka leaf spot in banana and its management” which was telecasted on 29.05.2018
- Dr. R. Naga Lakshmi, Scientist (Horticulture) gave a programme to ETV, Annadata on “Cultivation practices of Tuberose” which was telecasted on 30.05.2018.
- Dr. K. Ravindra Kumar, Scientist (Horticulture) gave a programme to ETV, Annadata on “Cultivation practices of Ginger” which was telecasted on 31.05.2018.
- Dr. R. Naga Lakshmi, Scientist (Horticulture) participated in phone in live programme telecasted in DD Saptagiri on “Varshakalanikianuvaina Poolarakalasaagu” at Doordarshan, Vijayawada on 31.05.2018.
- Dr. K. Mamatha, Senior Scientist (Horticulture) gave a programme to ETV, Annadata on “Cultivation practices of Taro” which was telecasted on 2.06.2018.
- Dr. K. Mamatha, Senior Scientist (Horticulture) gave a programme to ETV, Annadata on “Cultivation practices of Greater yam” which was telecasted on 3.06.2018.
- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur attended phone-in-live programme on “Dumpapantalasaagu” at Dooradarshan Kendra, Vijayaawada on 7.06.2018.
- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur attended phone-in-live programme on “Dumpapantalasaagu” at Dooradarshan Kendra, Vijayawada on 7.06.2018.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head participated in phone in live programme on Tissue culture Aratisaagu, Yeruvulayajamanyam on 5.7.2018 at Doordarshan Kendra, Vijayawada.





- Dr. K. Ravindra Kumar, Scientist (Hort.), HRS, Kovvur has given interview programme on 04.07.2018 for Pasidipantalu on “Poly House laloChamantiSagu” at Doordarshan Kendra, Vijayawada which was broad casted on 10.07.2018.
- Dr. K. Ravindra Kumar, Scientist (Hort.), HRS, Kovvur has given interview programme for Pasidipantalu on the topic “Allam Sagulomelakuvalu” at Doordarshan Kendra, Vijayawada and the programme was broad casted on 13.07.2018.
- Dr. B.V.K. Bhagavan, PS (Hort.) & Head gave radio talk on “Tissue culture aratisaagu – Seetha kalamlotesukovlasinajagrathalu” at AIR, Vijayawada on 29.11.2018.
- Dr B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, HRS, Kovvur attended Phone-in-Live programme on ‘Vesaviloaratithotalayajamanyam’ at Doordarshan Kendra, Vijayawada on 07.02.2019.

CITRUS RESEARCH STATION, PETLUR

Dr.B.Govindarajulu, Principal Scientist (Pl. Path.) & Head, CRS, Petlur attended Phone-in-Live programme on ‘Nimmabattaitotalalosamagrasasyarakshana’ at Doordarshan Kendra, Vijayawada on 07.03.2019.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA-2

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Pasupumariyu Allam pantalalorakaalaempika, natepaddatulu in hm TV on 19-05-2018
- Recent varieties available in turmeric suitable for agency area of Visakhapatnam in Raj TV on 29-05-2018
- MiriyaalaloVividharakaalu- Upayogaalu in Jai Kisan TV on 10-06-2018
- Allam lo Duma Kullutegulu- YaajamaanyaPaddatulu in hm TV on 10-06-2018
- Phone in live programme on Pasupumaritu Allam pantalalorakaalaempikamariyunaatukunetappudumelakuvalu at Doordarshan, Vijayawada on 16-10-2018
- Cultivation practices of broccoli in hm TV on 20.11.2018
- Ginger cultivation as intercrop in fruit orchards hm TV on 18.02.2019

HORTICULTURAL RESEARCH STATION, VIJAYARAI

Phone-in-Live doordarshan programme on ‘Cocoa cultivation in oil palm garden’ was telecasted.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Dr B. Ramesh Babu, Senior Scientist (H) gave phone-in-live program on “Kothagapandlathotaluveserytulakusuchanalusalahalu” on 17.05.2018 for Pasidipantalu, DD Saptagiri, Vijayawada
- Dr.P.Rama Devi,Senior Scientist (PP) delivered a talk for recording on “ Nematode management in poly houses” by E Tv Annadata on 31.05.2018





- Dr P. Ashok, Senior Scientist (H) gave recording on “Cultivation aspects of Dragon Fruit” which was telecasted in E Tv Annadata on 27.07.2018
- Dr M. Ravindra Babu, Senior Scientist (H) gave phone-in-live program on ‘Polyhouselalosaagucheyadaginapoolukooragayalu’ on 27.08.2018 for Pasidipantalu, DD Saptagiri, Vijayawada
- Dr B. Ramesh Babu, Senior Scientist (H) gave recording on “Mamidi puta yajamanyam” to E Tv Annadata during September 2018.
- Dr. P.Rama Devi, Senior Scientist (PP) attended to phone-in-live program on “Manastranikianuvainaoushadamariyusugandhathailapantalumariyuyajamanyapaddatulu” on 15.11.2018 in Pasidipantaluprogramme, DD Saptagiri, Vijayawada

MANGO RESEARCH STATION,NUZVID

- Dr.R.Rajyalakshmi,Scientist (Hort) & Head, MRS,Nuzvid attended ‘Mamidi lo Kaayaperigedasalomariyukothasamayamlotisukovalasinayajamanyapaddatulu’Doordarshan Kendra at Vijayawada on 12.04.2018
- Dr.R.Rajyalakshmi,Scientist (Hort) & Head, MRS,Nuzvid attended **phone in live** on ‘Mamidilopootha, pindheymariyunanyamaina kaya digubadulakuchepattavalasinayajamanyam” at Dooradharshan Vijayawada on 22.11.2018
- Dr.R.Rajyalakshmi,Scientist (Hort) & Head, MRS,Nuzvid attended phone in live on ‘Mamidiegumatikipaatinchavalasinamelakuvalu’ at Dooradharshan, Vijayawada on 18.2.2019

PHTRS, VENKATARAMANGUEM

Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to PasidiPantalu phone in live programme on the topic “VividhaVudhyanaPantalaloPantaKothanantaraYajamanyam” on 04-10-2018.

J.RYTHU SADASSUS

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUEM

- RHWEP students allotted to HRS, Kovvur have organized RythuSadassu on 31-10-2018.
- RHWEP students allotted to KVK, Pandirimamidi have organized RythuSadassu on 01-11-2018 at Rampa Errampalem village, Gokavaram Mandal, East Godavari District.
- RHWEP students allotted to HRS, Ambajipet have organized RythuSadassu on 02-11-2018 at Mukkamala Village, East Godavari District.
- Rythusadassu was conducted in RHWEP Villages organized by RHWEP students allotted to HRS, Lam on 06-03-2019.
- Rythusadassu was conducted in RHWEP Villages organized by RHWEP students allotted to HRS Bapatla and HRS, Nuzivedu on 08-03-2019.





MANGO RESEARCH STATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) organized Rythusadassualong with Associate dean, COH, Vekatarammannagudem, RHWEP incharge, COH, Vekatarammannagudem and RHWEP students and farmers from different villages participated in the programme at Tukkuluru on 6.3.2019

CITRUS RESEARCH STATION, TIRUPATI

- Dr. K. T. Venkataraman, Principal Scientist (H) & Head, Dr. L. Mukunda Lakshmi, Scientist (H) and Dr. D. Srinivas Reddy, Scientist (E), in charge of RHWEP, Citrus Research Station, Tirupati were attended in RythuSadasu and exhibition conducted by the RHWEP students at Pachikapallam on 26/02/2018 along with Dean of Horticulture, Dr,YSRHU and Associate Dean, COH, A.R Peta.
- Dr. L. Mukunda Lakshmi, Scientist (H) and Dr. D. Srinivas Reddy, Scientist (E), in charge of RHWEP, Citrus Research Station, Tirupati were attended in RythuSadasu and exhibition conducted by the RHWEP students at Vadamalapeta on 27/02/2018.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. K. Ravindra Kumar, Scientist (Hort.) participated in “YeruvakaPournami” programme at Gajjaram village of Tallapudi mandal and delivered a lecture on “Scientific cultivation of Coconut and Banana” on 28.06.2017. Shri. K.S. Jawahar, Hon’ble minister for Prohibition and Excise inaugurated the programme and delivered the speech on importance of the YeruvakaPournami day.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Dr. K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur along with RHAWEP students of Pasivedala village attended Grama DarsiniProgramme Chaired by Hon’ble Chief Minister Shri Nara Chandra Babu Naidu at Pasivedala village on 26.07.2018.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head and Dr. K. Ravindra Kumar, Scientist (Hort.) participated and assisted for arranging University stall in UDYANA-2018 (Horticulture show and Organic Exhibition) from 23rd to 26th 2018 at Velagapudi Ramakrishna Siddhartha Engineering College, Vijayawada.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head and other scientists of HRS, Kovvur, Dr. K. Uma Jyothi, Associate Dean, COH, VR Gudem, Dr. K. Partpara Rao, Asst. Proffessor (Plant Breeding), Associate dean’s representative and farmers participated in the RythuSadassu organized by RHWEP students on 31.10.18 at HRS Kovvur. An exhibition was arranged by students displaying live samples of different horticultural crops, charts, models and performed skits. DrK.Mamatha, Senior Scientist (Hort), HRS, Kovvur participated in the Kisanmela organized at Agricultural Research station, Peddapuram on 28.02.2019 and arranged an exhibition
- Dr R. Naga Lakshmi, Scientist (Hort), Dr K. Ravindra Kumar, Scientist (Hort), HRS, Kovvur participated in the Kisan mela organized at Regional Agricultural Research station (RARS), Maruteru on 26.03.2019 and displayed exhibits of banana, turmeric and tuber crops



HORTICULTURAL RESEARCH STATION, AMBAJIPETA

Sl. No	Date	Topic	Village	Scientist participated
1.	02.11.18	An exhibition cum RythuSadassu was organized by the RHWEP students (final year B.Sc (Hort.) students of COH, VR Gudem allotted to HRS, Ambajipeta as part of RHWEP programme where in production technologies and protection models, live samples of coconut, banana, vegetables and value added products of coconut for the benefit of the participant farmers and created awareness through cultural programmes and also conducted farmers scientists and Horticulture department officials interaction meet to clarify the field problems in cultivation of various Horticultural crops.	AbyudayaKars hakaParishatt Hall, Mukkamala	Dr. G. Ramanandam Dr.N.B.V.Chalapa thi Rao and Smt. B. Neeraja

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Dr. V. Sivakumar attended a kisan mela conducted during Golden Jubilee Celebrations at HRS, Kovvur on 06.01.2019 and also participated in Farmers- Scientists interaction session
- Dr. V. Sivakumar arranged a stall and displayed technologies and participated in Farmer-Scientist interaction session during the Kisan mela organized by RARS, Chintapalli and addressed about the cultivation constraints in horticultural crops on 09.02.2019.

CASHEW RESEARCH STATION, BAPATLA

Organized the RythuSadassu at Bethapudi village of Bapatla mandal, Guntur Dist, on 08.03.2019 under RHWE Programme. Dr. M.L.N. Reddy, Dean of Horticulture, Dr. YSRHU attended as Chief Guest and delivered the message on this occasion. This programme was presided by Dr. K. Dhanumjaya Rao, Principal Scientist (Hort) & Head CRS, Bapatla, Dr. Subba Rao, NABARD Chair Professor, Agricultural College, Bapatla ANGRAU, Sri. Ch. Chinnbbai, Asst. Prof. (Ento.), COH, VR Gudem. Sri. K. Umamaheswara Rao, Scientist (Hort.), Dr. B. Nagendra Reddy, Scientist (Ento), CRS, Bapatla, MPEOs from Chirala and Bapatla mandal also participated. Around 100 No's farmers attended the Rythusadassu and they observed the specimens, charts and models displayed by the RHWEP students and soil health cards were distributed to farmers of respective villages.



KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

On 01-11-2018 Krishi Vigyan Kendra, Pandirimamidi conducted RaithuSadassu as a part of the RHWEP programme at R.Erramapalem village of Gokavaram mandal. The programme started with the inauguration of stalls arranged by RHWEP students by Dr.M.L.N.Reddy, Dean of Horticulture, Dr.K.Umajyothi, Associate Dean, College of Horticulture, Sri.Devanand, ADH, Rajahmundry, ZPTC, MPTC members and Sarpanch of that village. Dr.A.Srinivas, Principal Scientist and Head from KVK, PMD invoked the guests and explained the activities taken up during last four months of RHWEP programme with the students allotted in Ramparrampalem and Vedurupaka villages of Gokavaram mandal. In this programme Farmers – Scientist interaction has been conducted & farmers have given positive feedback regarding the RHWEP programme. Dean, AD from COH appreciated the activities undertaken by KVK for the RHWEP students. Soil health cards were also distributed to the host farmers of RHWEP students. In this programme Sri.Ramesh, Horticultural Officer, incharges of the RHWEP Srividya Rani.N&Sri.P.Raja Sekhar, scientists of KVK, Pandirimamidi, host farmers and farmers from the two villages, and 83 farmers attended the programme.



KRISHI VIGYAN KENDRA, PERIYAVARAM

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Exhibition	4	428	57	485



K. EXPOSURE VISITS

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

ATMA and Dept. of Horticulture, Prakasam district 30 farmers to Krishi Vigyan Kendra, Venkataramannagudem on 20.04.2017 as exposure visit to Dr.YSRHU campus. Dr.K.Venkata Subbaiah, Scientist (Hort.) explained about latest technologies in vegetable



and horticultural crops. Sri. G.Shaliraju, Scientist (Entomology) briefed about IPM practices in vegetable crops and Honey bee rearing. Dr.T.Vijaya Nirmala, Scientist (Veterinary Science) explained about livestock activities of KVK



Dr. T. Vijaya Nirmala, Scientist (Veterinary Science), KVK Venkataramannagudem attended exposure visit of farmers from East Godavari district On 22.04.2018 in coordination with ATMA, Ramachandrapuram and Buffalo Research Station, VR gudem. They were explained about reproduction and fodder management in cattle, then visited livestock demo units, Murrah buffalo sheds and fodder plots of Buffalo Research Station, VR gudem.

One hundred and twenty horticultural farmers of Vishakapatnam district came to Dr.YSRHU campus and KVK at Venkataramannagudem in three consecutive batches from 26.04.2018 to 28.04.2018 learn about latest technologies in the horticultural sector. Sri G. Shali raju, Scientist (Ento.) and Dr.K.Venkata Subbaiah Scientist (Hort.), KVK, Venkataramannagudem, explained about IPM practices in vegetables, pruning operations in guava and also taken on visit to demonstration units Apiary, vegetable seed production, improved backyard poultry, milch animals, sheep rearing, vermicomposting and Azolla production at KVK, Venkataramannagudem.



KVK, Venkataramannagudem conducted Training cum Exposure visit to Multi Purpose Extension Officers (40 Nos) of Tadepalligudem Division on 18.08.18. In this Programme Dr.R.V.S.K.Reddy, Director of Extension, Dr.YSRHU attended as chief guest and addressed the gathering on importance of extension functionaries in transfer of latest technologies developed by the universities & also advised try to gain

the knowledge on various crops before starting of the season. Dr.E.Karunasree Principal scientist & Head, explained the activities of KVK & requested all the extension workers to have a vigil on new invasive pest, Fall armyworm (FAW), *Spodoptera frugiperda*(J.E.Smith) (Lepidoptera:Noctuidae) on Maize in West Godavari District. Sri G.Shali Raju Scientist (Entomology) has coordinated the programme and explained about pest & Disease management in Paddy & Maize. Later Visited Bio - control Lab at KVK, Bio – fertilizer unit at HRS &Centerof Excellence (COE) at University Campus. In this Programme Sri. P.Murali Krishna ADA,T.P.Gudem& MAOs of four Mandals also participated.



Eighty farmers from srikakulam district visited KVK, Venkataramannagudem on 27.08.2018 on an exposure visit to Dr.YSRHU campus. Dr.V.Deepthi, Scientist (Agricultural Extension) explained about the importance of biofertilizers in horticultural crops and explained the various demonstration units of KVK. Sri. G.Shaliraju, Scientist (Ento.) briefed about the ICM practices in

vegetable crops.

Fifty farmers from Karnataka state visited KVK, Venkataramannagudem on 29.08.2018 on an exposure visit to Dr.YSRHU campus. Dr.K.VenkataSubbaiah, Scientist (Hort.) explained about the latest technologies in horticultural crops. Sri. G.Shaliraju, Scientist (Ento.) briefed about the IPM practices in vegetable crops.





Tribal farmers implementing the Integrated Farming Systems in Buttaigudem and Polavaram mandals were taken for an exposure visit on 28.09.2018 by Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) and Sri G.Shali Raju, Scientist (Entomology) as a part of the training cum exposure visit for “Integrated farming system (IFS)” to the IFS farm of Sri. M. Suryanarayana Murthy, progressive farmer and Pandit DeenDayal Upadhyay Anthyodaya Krishi Puraskar awardee of K.Gangavaram village, East Godavari District. The farmers interacted regarding different components that the profitable in IFS model and gained first hand information on various components that can be replicated in their own existing model.



Agricultural Polytechnic students from Garikapadu (ANGRAU) visited KVK, Venkataramannagudem on 1-12-2018. Dr. K. Venkata Subbaiah, Scientist (Horticulture) explained about KVK activities, taken around the demonstration units and answered the doubts expressed by the students.

On 3-12-2018, Krishi Vigyan Kendra, Venkataramannagudem conducted an training cum exposure visit to the farmers of Guntur district. During the they were explained about the KVK activities, improved cultivation practices of vegetables and fodder crops. Later they visited demonstration plots of KVK, HRS,COE in the campus.



Forty Farmers from Odisha state along with three officials from Department of Horticulture, Odisha visited university campus and KVK on 5-12-2018. Dr. K. Venkata Subbaiah, Scientist (Horticulture) took them around the demonstration units, vegetable plots, Azolla unit, Vermicompost unit and nursery and explained about

the cultivation practices.



Dr. A. Devivaraprasad Reddy, Scientist has explained the activities and demo units of Krishi Vigyan Kendra to the students of Sri Venkateswara Institute of Science and Technology (VISIT) College on 11.12.2018.

On 19-12-2018, Odisha farmers (80 members) visited KVK Venkataramannagudem as during the exposure visits like different demonstration plots of KVK like IFS unit, Vermicompost unit, Bee keeping unit, Poultry unit, cattle shed, Nursery, Center of Excellence on Protected cultivation and Post Harvest Technology Research Station in the campus.



On 20-12-2018, Sri. G. Shali raju (Entomology), KVK Venkataramannagudem conducted exposure visit to the Beekeeper apiary unit at Guntur district along with 20 trainees for showing apiary boxes



manufacturing unit, preparation of various value-added products from honey and different flavours of honey. On 25-12-2018 conducted exposure visit to State Beekeeping Extension centre (SBEC),KVIC,Vijayarai to explained about various schemes for promotion of beekeeping under KVIC as a part of 25 days “Skill training Programme on Beekeeping” which was supported by ICAR – ATARI and Agriculture skill council of India (ASCI).

KVK, Venkataramannagudem, Dr. YSR Horticultural university conducted exposure visit to Sri Vasavi Pharmacy college students on 4-1-2019. In this visit they visited KVK demonstration plots, Nursery and livestock units.

KVK, Venkataramannagudem, Dr. YSR Horticultural university scientific staff conducted an exposure visit to Agriculture students from Sri VasaviKanyakaParameswari intermediate college, Penugonda on 5-1-2019. They have visited many demonstrations units in the KVK as well as in the university campus.



On 9-1-2019, our KVK Scientific staff conducted an exposure visit to Z.P.H. School students from Peddatadepalli village. In this program the scientific staff created an overall idea on Horticulture and other demonstration units among the students.

Nearly 30 farmers along with their department officials from Chhattisgarh have visited the KVK, Venkataramannagudem demonstration plots, Nursery, Azolla, Vermicompost unit and COE on 10-1-2019. The scientific staff explained about the demo plots to the farmers.



On 30-01-2019, KVK, Venkataramannagudem scientific staff, Dr. K. Venkata Subbaiah, Scientist (Horticulture) and Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) conducted exposure visit to Anakapalli farmers and explained about different demonstration plots of KVK. In this visit 40 farmers have participated along with their Horticulture officer.

On 2.02.2019, KVK scientists conducted exposure visit to 130 students of IXth class from Z.P.High School. They have visited many demonstration units in the KVK including Nursery, Azolla production unit, Poultry shed, Bee keeping unit and vermicomposting unit. And also visited COE, buffalo research



station and Horticultural University.

Forty farmers from Srikakulam district under district level training programme being organized by P.D. ATMA, Srikakulam district visited KVK, Venkataramannagudem on an exposure visit. They were briefed by the scientists on latest production technologies including Azolla production, Vermicomposting, Milch shed, Soil



lab and bio-control lab on 08.02.2019.

KVK, Venkataramannagudem conducted exposure visit to VI to X class students from Adithya public school on 13.02.2019. Eighty members of students have participated and visited all demonstration units of KVK like Nursery, Milch shed, Bee keeping unit, Sheep and goat shed.



On 13.02.2019 KVK, Venkataramannagudem conducted training cum exposure visit to 30 numbers of farmers from East Godavari district. In this programme explained about Importance of Bio-control agents, Soil Health, Bio- fertilisers, Improved production technology of vegetables later explained about various demonstration units of KVK, Instructional farm.



Forty farmers from Chhattishgarh visited KVK, Venkataramannagudem on 15.02.2019 as a part of their exposure visit under district level training programme being organized by ATMA. They have visited Nursery, Azolla production unit, Vermicompost unit and Bee keeping unit.

On 15-02-2019, KVK scientists conducted exposure visit to Pamarru and Gudlavalleru farmers in support with ATMA. In this program more than 80 farmers have participated and they visited different demonstration plots of KVK like Poultry shed, Vermicompost unit, Bee keeping unit, Nursery, Buffalo research station and HRS.



Engineering diploma students from VISIT college, Venkataramannagudem were visited KVK, Venkataramannagudem on 19-2-2019. In this visit KVK, Scientific staff interacted with students and explained about different demonstration units of KVK like azolla unit, Vermicompost unit, poultry farming, vegetable seed production plots, Horticultural nursery etc. in this visit more than 50 students have

participated.

On 20.02.2019, 152 students from Narayana e- techno school, Tadepalligudem visited KVK, Venkataramannagudem. They were briefed by the scientists on latest production technologies including Nursery management, Cashew grafting, Floriculture, Bee keeping, fodder production, vermicompost production, improved sheep breeds management and backyard poultry birds.



On 1-3-2019, Dr. K. Venkata Subbaiah, Scientist (Horticulture), Dr. T. Vijaya Nirmala, Scientist (Veterinary Science) and other KVK scientific staff conducted exposure visit to Krishna district (Mandavalli and Kaikalur) farmers as a part of exposure visit under Agricultural Technology Management Agency (ATMA).. In this exposure visit farmers visited KVK demonstration plots, Hi tech nursery and poly houses in the university campus. In this visit more than 40 farmers have participated.





On 10-3-2019, Sri. G. Shali raju, Scientist (Entomology), from KVK, Venkataramannagudem conducted exposure visit to trainers under ASCI skill training program on organic farming. In this program visited Amaravathi organics, Vijayawada and Rythunestham foundation, Guntur district.

On 12-3-2019, KVK, Venkataramannagudem scientific staff conducted exposure visit to Vinukonda farmers from Guntur district. In this visit the farmers visited different KVK demonstration plots and also scientists explained about IPM modules and improved practices in vegetable cultivation and also explained about the vegetable pro tray nursery and poly house cultivation in the same campus. In this visit more than 50 farmers have visited.



On 14.03.2019, twenty five farmers from Jangareddygudem visited KVK, Venkataramannagudem with the assistance of Tobacco board. They were briefed by the scientists on latest production technologies including Nursery management, soil testing, Cashew grafting, improved fodder production, vermicompost production, milch animal management practices, improved backyard poultry birds at KVK instructional farm and also polyhouse rearing of vegetables and flowers in Centre of Excellence.

On 15.03.2019, thirty number farmers from Krishna district visited KVK, Venkataramannagudem as a part of exposure visit under Agricultural Technology Management Agency (ATMA). They were briefed by the scientists on latest production technologies including Nursery management, Cashew grafting, improved fodder production, vermicompost production, Honey bee rearing, improved backyard poultry birds and polyhouse rearing of vegetables and flowers in Centre of Excellence.



On 19-03-2019, Krishi Vigyan Kendra, Venkataramannagudem, Dr. Y.S.R. Horticultural university conducted exposure visit to Machilipatnam and Koyyalagudem tobacco farmers. In this programme 40 farmers have participated. They have visited improved cultivation aspects in vegetables along with IPM practices, Azolla and vermicompost production, Bee keeping, Centre of Excellence, Central

Buffalo Research Institute etc.

On 29-3-2019, Dr. K. Venkata Subbaiah, Scientist (Horticulture), took 15 bio control trainers to the HRS, Ambhajipet as an exposure visit under the training program of Skill Training for Rural youth on “Production of Bio control agents” from 26-3-2019 to 01-4-2019. During this exposure visit they have visited HRS farm and bio control lab.



KRISHI VIGYAN KENDRA, PANDIRIMAMIDI



On 26.04.2018 Dr.A.Srinivas, Sr.Scientist and Head, Sri.K.C.Bhanu Murthy, Scientist (Horticulture), Miss Srividya Rani.N, Scientist (Extension) from KVK, Pandirimamidi has taken the farmers to



Coconut + Cocoa intercropped orchards at Nidigatla village, Korukonda (M) as a part of exposure visit. Farmers got acquainted with production practices, pests and diseases and processing. In this programme, Dr. NBV, Chalapathi Rao, Sr. Scientist (Ento), HRS, Ambajipet and Sri Ramesh, Mondalez Cocoa company were also participated.



On 25.06.2018 Dr. A.Srinivas, Senior scientist & Head and Dr.S.Adarsha, Scientist (Entomology) participated in Biscuit making - Millet value addition training program under organized by ASDS-NGO at Rekhapally village of Chinturmandal. Sri. KVS Prasad, AGM NABARD attended as chief guest for the program. Dr. A.Srinivas interacted with trainees and distributed and inaugurated Biscuit making unit along with Sri V.Gandhibabu, Founder, ASDS-NGO. Dr.RajeshNune, Scientist, ICRISAT, Master trainer Sri. Nagabhushanam and 20 SHG tribal women participated the program.

On 07.08.2018 DAESI students visited KVK, Pandirimamidi organised ATMA & VARADI, NGO, East Godavari dist. as a part of Exposure visit. In this programme. Dr.A.Srinivas, Sr.Scientist & Head addressed the students regarding KVK activities taken up in the agency area and also ongoing programmes. Dr.D.Srinivas, Professor & Head, Dept.of Soil Science, College of Agriculture, Rajahmundry, addressed the farmers that the students should concentrate more on technical aspects in field and Horticultural crops rather than sales promotion. Sri.Nagachari, DPD-ATMA and Sri Chandra Mohan member of Coramandel company also interacted with the DAESI students. Dr.S.Adarsha and Sri.K.C.Bhanu Murthy, Scientists from KVK, Pandirimamidi has taken class on production and protection technologies in Cashew and Mango and visited to KVK Pandirimamidi Institutional & conducted demonstration on Cashew rejuvenation. In this programme Miss Srividya Rani.N, Sri.P.Rajasekhar, Scientists from KVK, PMD and 50 trainees were participated.



On 30.08.2018 Miss Srividya Rani.N & Sri P. Raja Sekhar, Scientists from Krishi Vigyan Kendra, Pandirimamidi visited Central Silk Board at Narasapuram village of Rampachodavaram mandal along with RHWEP Students. Dr.Vijay Kumar, Scientist, Central Silk Board explained the activities taken up by them like rearing of tussar silk worms, identification and eradication of pebrine diseased eggs through grainage during initial stages, management of yellow fly, temperature regulation for preservation of cocoons, providing healthy DFLs to the farmers. *etc.*

On 10.10.18, MPEO'S of Dept. of Agriculture of Anaparti mandal visited Krishi Vigyan Kendra, Pandirimamidi as a part of their exposure visit. Sri Bhanu murthy K.C, Scientist (Horticulture) and Dr. S. Adarsha, Scientist (Entomology) coordinated the program and explained KVK activities, Cashew Nursery techniques, KVK Demo units – IPM units. In this programme, Sri Mallikarjun, ADA, Anaparti, A.O'S, ATMA-BTM, 25 MPEO'S were participated.





On 14.12.18, cashew farmers from Paykaravpeta of Narsipatnam visited Krishi Vigyan Kendra, Pandirimamidi as exposure visit organized by Dept. of Horticulture, Narsipatnam, Vishakapatnam District. Dr. A.Srinivas, Principal Scientist & Head explained the KVK mandates, activities, IFS systems with suitable examples to doubling of the farmers income by optimum utilization of resources. Sri Bhanu murthy K.C, Scientist (Horticulture) coordinated the program and explained Cashew and Mango management & production practices Dr.S.Adarsha explained IPDM practices in Cashew and Mnago and also Bee-keeping as income generating activity . In this program, Sri.P.Rajasekhar, Scientist (SS&AC), Miss. N. Srividya Rani, Scientist (Extn), SmtUmamaheswari, H.O., Payakaravpeta mandal and 50 farmers were participated.

On 22.01.2019 Block Technology Managers and Assistant Technology Managers of ATMA, Nellore visited Krishi Vigyan Kendra, Pandirimamidi. In this programme Dr.A.Srinivas, Prinicipal Scientist & Head addressed the staff regarding the activities of KVK, Pandirimamidi and mandates of KVK. Also visited HRS Palmyrah station and knew the activities of HRS, PMD. KVK, Scientists Dr.S.Adarsha, explained regarding the Bee-Keeping Unit and Miss Srividya Rani.N explained regarding the Biscuit making Unit. KVK, Institutional farm was also visited by the ATMA staff. In this programme Smt. Y.Ananda Kumari, PD, ATMA DPD, ATMA and 25 BTMs and ATMs participated.



On 19.02.19, cashew farmers of Vishakapatnam district visited Krishi Vigyan Kendra, Pandirimamidi as a part of their exposure visit organized by Dept. of Horticulture. Dr. D.Manohar Prasad, Principal scientist & Head, KVK, Pandirimamidi addressed the farmers on scope of cashew cultivation. Sri Bhanu murthy K.C, Scientist (Horticulture) coordinated the program, explained about nursery management, importance of grafts over seedlings, seasonal management of T-Mosquito bug and Blossom blight of cashew. In this programme, Sri Ganesh, H.O. and 32 farmers were participated.

KRISHI VIGYAN KENDRA, PERIYAVARAM

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Exposure visits	1	15	2	17



Exposure visit poultry farm Exposure visit to All India Radio



On 24.09.2018 RHWEP students of CoH, Anantharajupeta allotted to KVK, Periyavaram made an exposure visit to CIFAL Herbal Pvt Ltd at Gudur, briefed about the different products and processing mechanism of lignin, Pectin, Lime oil and rosemary and other products.

On 24.09.2018 RHWEP students of CoH, Anantharajupeta allotted to KVK, Periyavaram made an exposure visit to State Bio-control Laboratory and Soil Testing laboratory at Nellore, Mrs. Sumalatha, A.O briefed about the Mass Production techniques of various Biocontrol agents Like Trichogramma, Pseudomonas, Trichoderma.



Mr. D.Vinod Naik, Research Associate (Agril. Extension), KVK Periyavaram visited Waste Decomposer Unit on 10-12-2018 in Thalwaypadu Village near Naidupet along with RHWEP students and encouraged the farmers with bringing out the benefits of the Waste Decomposer unit.

Ms.S.M.Sailaja, Horticulture Research Associate, KVK,Periyavaram, has conducted exposure visit to Biological-control lab at Nellore, for RHWEP students on 8th January 2019. Dr. Sumalatha, ADA Bio-control lab and Ms. Kalpana AO, Bio-control lab explained in detail about biological agents used in Horticulture and Agriculture fields to control pests and diseases and their mass multiplication. Demoon preparation of trichogramma cards was given to students.



Ms.S.M.Sailaja, Horticulture Research Associate, Krishi Vigyan Kendra, Periyavaram, has conducted exposure visit to Soil-testing laboratory at Nellore, for RHWEP students on 8th January 2019. Dr. Anasuya, ADA Soil testing laboratory, and Dr.Vijay, has explained in detail about types of soils, their characters various parameters to be considered while collecting soil sample for testing and importance of soil testing.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Fifty three Students of SrikrishnaDevaraya College of Horticultural Sciences, Ananthapuramu accompanied by 3 teaching faculty visited the Horticultural Research station, Ambajipeta on 17.05.18 as part of educational tour and were explained about the ongoing research activities in crop improvement, crop production, plant protection and quality seedling production and mass multiplication of bioagents and its role for the control of pests and diseases of coconut.
- Seventy five second year Students of B.Sc (Ag.) from Agricultural college, Rajamahendravaram visited the Horticultural Research Station, Ambajipeta on 12.06.18





as part of educational tour and were briefed about the ongoing research activities by the scientists on crop improvement, crop production, plant protection and mass multiplication of bio-control agents and quality plant material production.

- Second year Students (60 nos.) of B.Sc (Hons.) Horticulture from college of Horticulture, Venkataramannagudem visited the Horticultural Research Station, Ambajipeta on 27.06.18 as part of identifying the disease of crops at field level and were briefed about the ongoing research activities by the scientists on different aspects of crop improvement, production, identification of pests and diseases and their control and multiplication of bio-control agents. Later made field visit in Bandarulanka village and observed the symptoms of Ganoderma wilt, stem bleeding in coconut and pod rot in cocoa and demonstrated the application of Neemcake + *Trichoderma viride* for Ganoderma control.
- Second year Students of B.Sc (Hons.) Horticulture from College of Horticulture, Parvathipuram visited the Horticultural Research Station, Ambajipeta on 27.08.18 as part of educational tour and were briefed about the ongoing research activities by the scientists on crop improvement, crop production, plant protection and mass multiplication of bio-control agents and quality plant material production.
- Thirty farmers of Odisha State visited Horticultural Research Station, Ambajipeta on exposure visit and scientists briefed the crop production, crop protection and quality planting material production on 25.09.18.
- A group of farmers (75 nos.) from Anakapalli, Munagapaka, Nathavaram, Golugonda and Koyyuru villages of Visakapanam district visited Horticultural Research Station, Ambajipeta on exposure visit to know the latest scientific cultivation of coconut and its intercrops and pests and disease management practices being organized by the Department of Horticulture. The scientists briefed the crop production and crop protection technologies and quality planting material production on 16.11.18.
- Farmers (50 nos.) from Narsipatnam village of visakapanam district visited Horticultural Research Station, Ambajipeta on exposure visit to know the latest scientific cultivation of coconut and its intercrops, pests and disease management practices being organized by the Department of Horticulture. The scientists briefed the crop production and crop protection technologies and quality planting material production on 28.11.18.
- About 50 farmers from Nellore district under district level training programme being organized by P.D. ATMA, Nellore district visited Horticultural Research Station, Ambajipeta on exposure visit. They were briefed by the scientists on latest production technologies including intercrops cultivation in coconut and integrated pest and disease management and also quality planting material production in coconut on 01.12.18.
- One hundred and fifty Farmers (150 nos.) from Korukonda, Anaparthi, Kadiyam villages of East Godavari district visited the Research Station as exposure visit. The farmers were explained about the recent technologies intervenes in crop production, pests and disease management practices in coconut by the concerned scientists. Further, the farmers were briefed about on the incidence Rugose spiralling whitefly and its management on 06.12.18.
- Farmers (40 nos.) from Payakaraopeta of Visakhapatnam district visited Horticultural Research Station, Ambajipeta on exposure visit to know the latest scientific cultivation of coconut and its intercrops, pests and disease management practices being organized by





the Department of Horticulture. The scientists briefed the crop production and crop protection technologies and quality planting material production on 13.12.18.

- Final year B.Sc (Ag.) Students from Agricultural College, Rajahmundry visited the Horticultural Research station, Ambajipeta on 13.12.18 as part of educational tour and were explained about the ongoing research activities by the concerned scientists in crop improvement, crop production, plant protection and quality seedling production and mass multiplication of bioagents for the control of pests and diseases of coconut.
- Students from SKPP Horticultural Polytechnic, Ramachandrapuram visited Horticultural Research Station, Ambajipeta on 03.01.18 as part of educational tour and were briefed about the research activities pertaining to crop improvement, crop production, Entomology and Pathology divisions and mass multiplication of biocontrol agents and its role for the control of pests and diseases of coconut.
- Seventeen farmers from West Godavari district visited Horticultural Research Station, Ambajipeta on 29.03.19 as part of seven days training programme on production of biocontrol agents under skill training of rural youth (STRY) programme organized by KVK, VR Gudem in collaboration with ATMA and were briefed about the research activities pertaining to crop improvement, crop production, Entomology and Pathology divisions and mass multiplication of biocontrol agents and its role for the control of pests and diseases of coconut.
- Second year Students (66 nos.) of B.Sc (Hons.) Horticulture from college of Horticulture, Venkataramannagudem visited the Horticultural Research Station, Ambajipeta on 29.03.19 as part of identifying the disease of crops at field level and were briefed about the ongoing research activities by the scientists on different aspects of crop improvement, production, identification of pests and diseases and their control and multiplication of bio-control agents. Later made field visit in Bandarulanka village and observed the symptoms of Ganoderma wilt, stem bleeding in coconut and pod rot in cocoa and demonstrated the application of Neemcake + *Trichoderma viride* for Ganoderma control.

CASHEW RESEARCH STATION, BAPATLA

Dr. B. Nagendra Reddy Scientist (Ento), CRS, Bapatla visited Bio fertilizer unit at ARS, Amaravathi, ANGRAU as exposure visit to RHWEP Students of Cashew Research Station, Bapatla.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- Dr. M. Raja Naik, Asst. Professor (Hort.), College of Horticulture, Anantharajupeta visited International airport, Tirupati on 25-04-2018 along with Senior scientist (Soil Science), Principal Scientist (Plant Pathology), RARS, Tirupati, Secretary, TUDA, Tirupati and Horticulture staff, TUDA, Tirupati.
- J.C.Diwakar Reddy Horticultural College, Tadipatri students visited college of Horticulture, Anantharajupeta on 14-05-2018, as a part of their course curriculum. Dr. C.



Madhumathi, Professor (H), Dr. K. Swarajya Lakshmi, Assoc. Prof (H), Dr. B. Tanuja Priya, Asst. Professor (H) and Teaching Associates explained them about activities in laboratories and fields.

- Dr. M. Raja Naik, Asst. Professor (Horti), Dr. M. Ramaiah, Assoc. Professor (Ento) COH, Anantharajupeta took the 3rd year B.Sc (Hons.) Horticulture students to Chandragiri fort towards exposure visit for showing the history of the fort, plan of design of landscape architecture and other ornamental plants available.
- Dr. M. Raja Naik, Asst. Professor (Horti), Dr. M. Ramaiah, Assoc. Professor (Ento). Dr. K. Lalitha, Asst. Professor (Agro), Dr. Y. Deepthi Kiran, Asst. Professor (Agro), COH, Anantharajupeta took the 3rd year B.Sc (Hons.) Horticulture students to Tirumala on 31-05-2018 towards exposure visit to show landscaping places, gardens, nursery plants, flower decorations, different forest species and pests on ornamental crops.
- Dr. M. Rama Krishna, Associate Dean, Dr. M. Raja Naik, Assistant Professor (Horticulture), College of Horticulture, Anantharajupeta took the students of 2nd year B. Sc (Hons.) Agriculture from S.V. Agricultural College, Tirupati to COH farm visit on 9-7-2018, showed *Dendrobium* orchids, heliconia, commercial nursery and interacted with the students.
- All ELP students and PG PHT I yr students were taken to Farmdirect cold storage units I and II, Snowman cold storage unit, MVR godowns, FFF oil refinery and Krishnapatnam port on 12-09-2018. Students got awareness on marketing, storage and exporting of various agricultural commodities.
- Dr. Ch. Ruth, Professor (Pl. Path) and Dr Y. Sireesha, Assistant Professor (Pl. Path) has taken UG ELP- Mushroom culture students to a mushroom entrepreneur as a part of students exposure visit on 25/09/2018.

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- Student Visits to Oil Palm Processing Factory on 25th June,2019 at Ravada, Kurupam Mandal, Vizainagaram District – Dr. Rekha Eda , Asst. Professor. (Horti.)
- Student Exposure visit to Horticultural Farm ,Bobili on 5th July,2019 – Dr. A. Hima Bindu, Asst. Professor. (Horti.)
- Student Exposure visit to Ramabadrapuram Vegetable Fileds on 5th July ,2019 - Dr. A. Hima Bindu, Asst. Professor. (Horti.)

HORTICULTURAL RESEARCH STATION, KOVVUR

- Thirty farmers along with Smt. Syamala, Horticulture Officer from Bhimili village in Visakhapatnam district visited Horticultural Research Station Kovvur on 25.04.18 as a part of their exposure visit. Dr K Ravindra Kumar, Scientist (Hort.) explained about the cultivation practices for tissue culture banana and tuber crops.
- Thirty farmers along with Smt. Radhika, Horticulture Officer from Visakhapatnam district visited Horticultural Research Station Kovvur on 26.04.18 as a part of their exposure visit. Scientists of HRS, Kovvur explained about the cultivation practices for tissue culture banana and tuber crops.





- Forty farmers along with Mr. M. Dilip Kumar, Horticulture Officer from Anakapalli village in Visakhapatnam district visited Horticultural Research Station Kovvur on 27.04.18 as a part of their exposure visit. Dr. A. Snehalatha Rani, Scientist (Plant Pathology) explained about the cultivation practices for tissue culture banana and tuber crops.
- Fifty farmers from Visakhapatnam district visited HRS, Kovvur on 28.11.2018. Dr. B.V.K. Bhagavan, PS (Hort.) & Head, Dr. K. Mamatha, Senior Scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.), Dr. K. Ravindra Kumar, Scientist (Hort.) and Sri Ch.S. Kishore Kumar, Scientist (Pl. Path.) interacted with the farmers and explained about the research achievements of HRS, Kovvur.
- Thirty five farmers from Nellore district along with Project Director ATMA visited HRS, Kovvur on 29.11.2018. Dr. K. Mamatha, Senior scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.), Dr. K. Ravindra Kumar, Scientist (Hort.) and Sri Ch. S. Kishore Kumar, Scientist (Pl. Path.) explained about the production technology of banana, importance of tissue culture banana, cultivation aspects of tuber crops and management of nematodes in horticultural crops.
- Fifty farmers from Orissa along with Horticultural officers visited HRS, Kovvur on 5.12.18 as a part of their exposure visit. Sri. Ch.S. Kishore Kumar, in charge-AICRP on nematodes and Miss M.L.N. Nandini, RA (Path) explained about the plant protection measures in banana.
- One hundred and fifty farmers from Korukonda, Anaparthi and Kadiyammandals visited HRS, Kovvur on 7.12.18 as a part of their exposure visit. Dr. K. Mamatha Senior Scientist (Hort), Dr. R. Naga Lakshmi, Scientist (Hort) and M.L.N. Nandini, RA interacted with the farmers and explained about production technology of banana and tuber crops.
- Thirty farmers from Araku mandal visited Horticultural Research Station on 5.12.19 as a part of their exposure visit. Dr. B.V.K Bhagavan, PS (Hort) &Head, Dr. K. Mamatha, Senior Scientist (Hort), Dr. R. Naga Lakshmi, Scientist (Hort), Dr. K. Ravindra Kumar, Scientist (Hort) and Sri Ch.S. Kishore Kumar, Scientist (Pl. Path) interacted with the farmers and explained about production technology of banana and tuber crops.

HORTICULTURAL RESEARCH STATION, MAHANANDI

- Osmania Degree College, Kurnool students and teaching staff were visited HRS, Mahanandi on 22-09-18 as a part of educational tour. During their visit Dr. M. Tagore Naik, Senior Scientist (H) and Ms. B. Swathi, R.A. (Ento.) explained them about the research station activities and ongoing research work in the station.
- Agricultural College, Mahanandi, ANGRAU students were visited HRS, Mahanandi on 25-10-18. During their visit Dr. M. Tagore Naik, Scientist, Horticulture, explained them about the research station activities and ongoing research work in the station.
- Agriculture Officer (AO), Agri. Extension Officers (AEO's) and Multi Purpose Extension Officers (MPEO's) of Atmakur and Velugodu mandals, Dept. of Agricultural visited the research station on 29-11-18. During their visit Dr. M. Tagore Naik, Senior Scientist (H) and Ms.B.Swathi, Research Associate (Ento.) explained them about the research station activities and ongoing research and also explained them about the cultivation of important Horticultural crops.





- Rama Krishna Autonomous Degree College, Nandyal students were visited HRS, Mahanandi on 10-12-18 as a part of educational tour. During their visit Dr.M. Tagore Naik, Senior Scientist, Horticulture, explained them about the research station activities and ongoing research work in the station.
- Progressive farmers from Kandukur mandal, Prakasam district visited the research station on 08-03-2019. During their visit Dr. M. Tagore Naik, Scientist (H) explained about the ongoing research projects and multiplication of various plant materials.
- Progressive farmers from Prakasam district visited the research station on 11-03-2019. During their visit Dr. M. Tagore Naik, Scientist (H) explained about the ongoing research projects and multiplication of various plant materials.
- Polytechnic College, Budvel, Kadapa students were visited HRS, Mahanandi on 13-03-19 as a part of educational tour. During their visit Dr.M.Tagore Naik, Senior Scientist, Horticulture, explained them about the research station activities and ongoing research work in the station.

i. Visitors:

- Hon'ble Director of Research Dr. J. Dilip Babu Garu, Dr.YSRHU, Zonal Research Head, Rayalaseema Zone, Dr. K.T. VenkataramanaGaru and Sri.M.Bangaru Raju, Superintendent, Office of Director of Research, VR Gudem visited Horticultural Research Station, Mahanandi on 10-10-2018, 11-10-2018 and 12-10-2018 and conducted office and technical inspection.
- Hon'ble Dean of Horticulture Dr. M.L.N. Reddy Garu, Dr.YSRHU and Associate Dean, Dr. M. Ramakrishna, COH, Anantharajupet visited Horticultural Research Station, Mahanandi on 29-10-2018.
- Hon'ble Board Member Sri. Nookasani Balaji Garu visited Horticultural Research Station, Mahanandi on 26-02-2019.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

Dr. M. Ravindra Babu, Senior Scientist (Hort.), HRS, Venkataramannagudem attended the following exposure visits

S No	Date	From the place	Topic	Organised by
1	26.04.2018	Bheemili, Visakhapatnam Dt	Protected cultivation and Nursery management	Dept of Horticulture
2	27.04.2018	Sabbavaram, Visakhapatnam Dt	Protected cultivation and Nursery management	Dept of Horticulture
3	05-06-2018	Krishna Dist	Cultivation of vegetables and flowers in polyhouses & shade nets	Dept of Horticulture,
4	19.06.2018	Siriguppa, Bellary, Karnataka	Protected cultivation and Nursery management	Dept of Horticulture Karnataka





5	31.11.2018	Korukonda, E.G.Dist	Protected cultivation and nursery management	Dept of Horticulture
6	12.12.2018	Pithapuram	Protected cultivation and nursery management	Dept of Horticulture
7	04.02.2019	Mopidevi, Avanigadda,	Chilli and vegetable cultivation	Dept of Horticulture
8	06.02.2019	Trainee Officers of Co-Op Banks in AP, TN and Karnataka	Protected cultivation – Prospects and opportunities	NABARD
9	08.02.2019	Srikakulam	Protected cultivation and nursery management	Dept of Horticulture
10	15.02.2019	Kankipadu, Thotlavallur, Krishna	Protected cultivation and nursery management	Dept of Horticulture

MANGO RESEARCH STATION, NUZVID

- Dr.R.Rajyalakshmi, Sr.Scientist (Hort) & Head and Dr.B.K.M.Lakshmi, Scientist (Pl. patho), Dr.G.Sravanthi, Scientist (Ento.) participated in exposure visit to oilpam processing unit in Hanuman junction along with RHWEP students and farmers on 22.1.2019
- Dr.G.Sravanthi, Scientist (Ento.) participated in participated in exposure visit to poultry farm and nursery in mallavalli along with RHWEP students and farmers on 23.1.2019



VI.PUBLICATIONS

(Books, Laboratory manuals, Technical bulletins, Research papers etc.)

A.BOOKS/BOOK CHAPTERS

HORTICULTURE POLYTECHNIC, MADAKASIRA

Role of Bio fertilizers in Organic Vegetable Production, V. Ramana, Technical Officer, K. Venkata Ramudu and G. ChandramohanReddy : Advances in Horticulture, Volume-1Page No: 85-94.

HORTICULTURAL RESEARCH STATION, KOVVUR

Snehalatha Rani, A. and Devappa, V. 2018. Diseases of marigold and their management. In: Diseases of Ornamental Crops. Ed: V. Devappa, Dinesh Singh and S. Jahagirdhar. Today and Tomorrows Printers and Publishers, New Delhi.

B.RESEARCH PAPERS

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

- T. Vijaya Nirmala,A.Devivaraprasad Reddy, E.Karunasree, R.V.S.K. Reddy, K. Venkata Subbaiah, G.Shali Raju, V.Deepthi and J.V.Prasad. 2018. Effect of Concentrate Mixture on Milk in Graded Murrah Buffaloes. Multilogic In Science, Vol. VIII, Issue Special (C): 6-7.
- A.Devivaraprasad Reddy, E.Karunasree, T. Vijaya Nirmala, R.V.S.K. Reddy, K. Venkata Subbaiah, G.Shali Raju, V.Deepthi and J.V.Prasad. 2018. A Case Study of Integrated Farming System (IFS) in Agency Areas of West Godavari District of Andhra Pradesh. Multilogic In Science, Vol. VIII, Issue Special (E): 61-62.
- T.Vijaya Nirmala, A. Devivaraprasad Reddy, E. Karuna Sree, K. Venkata Subbaiah, G. 2018. Salmonellosis in Poultry: A Case. International Journal of Current Microbiology and Applied Sciences 7(02): 2347-2349.
- T.Vijaya Nirmala,A. Devivaraprasad Reddy, E. Karuna Sree, K. Venkata Subbaiah, G. Shali Raju and Reddy, R.V.S.K. 2018. Effect of concentrate feed mixture on yield of milk in graded Murrah buffaloes. Multilogic in Science, Vol VIII, Issue special (C), August.
- K.Venkata Subbaiah, R.V.S.K.Reddy, J.D.Babu, G.S.Raju, E.Karunasree, A. Devivaraprasad, T.V.Nirmala and V.Deepthi. 2018.Effect of Different Potting Media on Propagation of Ivy Gourd through Stem Cuttings. *International Journal of Pure Applied Bioscience*. 6(1):894-897.
- Venkata Subbaiah, K., S.L. Jagadeesh, R. Manjula, G. Shali Raju, E. Karunasree, T. Vijaya Nirmala, A. Devivaraprasad Reddy, V. Deepthi, N. Srividya Rani and Reddy, R.V.S.K. 2018. Value Added Studies in Banana as a Commercial Enterprise.



- International Journal of Current Microbiology and Applied Sciences. 7(03): 3020-3024.
- K.Venkata Subbaiah, R.V.S.K.,Reddy, G. Shali Raju,, Karunasree, E.,V. Shekhar, T. Vijaya nirmala,A.Devivaraprasad Reddy and Deepthi, V. 2018. Effect of different levels of arka microbial consortium on seed germination and survival rate in Brinjal cv. Dommeru Local. International Journal of Current Microbiology and Applied Sciences7(6): 2821-2825
 - K. Venkata Subbaiah¹, R.V.S.K. Reddy, G. Shali Raju³, E. Karunasree, V.Deepthi T. Vijaya Nirmala⁶ and A. Devivaraprasad Reddy. 2018. Economic analysis of small scale horticultural nursery Enterprise in West Godavari District of Andhra Pradesh. Bull. Env. Pharmacol. Life Sci., Vol 7 (SPL1] 2018 : 79-83.
 - K. Venkata Subbaiah, N.N. Reddy, A.S. Padmavathamma, M.L.N. Reddy, A.V.D. Dorajee Rao, Manjula, R and A.G.K. Reddy. 2018.Effect of Paclobutrazol on hermaphrodite flowers, leaf chlorophyll contents and soil micro organisms. Bull. Env. Pharmacol. Life Sci., Vol 7 [7] June 2018: 54-58
 - G Shali Raju, E Karunasree, RVSK Reddy, K Venkata Subbaiah, A DevivaraprasadReddy, T Vijaya Nirmala, V Deepthi and JV Prasad. 2018. Association between profile of apiary trainees and adoption of beekeeping activity for income generation. Journal of Pharmacognosy and Phytochemistry 2018; SP1: 2135-2137.
 - T. Vijaya Nirmala, A.Devivaraprasad Reddy, E.Karunasree, R.V.S.K. Reddy, K. Venkata Subbaiah, G.Shali Raju, and V.Deepthi. 2018. Effect of Concentrate Mixture on Milk in Graded Murrah Buffaloes. Multilogic in Science, Vol. VIII, Issue Special (C): 6-7.
 - A.Devivaraprasad Reddy, E.Karunasree, T. Vijaya Nirmala, R.V.S.K. Reddy, K. Venkata Subbaiah, G.Shali Raju, V.Deepthi and J.V.Prasad. 2018. A Case Study of Integrated Farming System (IFS) in Agency Areas of West Godavari District of Andhra Pradesh. Multilogic in Science, Vol. VIII, Issue Special (E): 61-62.
 - RVSK Reddy, E Karuna Sree, Ch. Kiran Kumar, V Deepthi, K Venkata Subbaiah, G Shali Raju, A DevivaraprasadReddy,T Vijaya Nirmala and JV Prasad. 2018. A study on integrated crop management in cashew for sustainable livelihood of tribal farmers in west Godavari district of Andhra Pradesh. Journal of Pharmacognosy and Phytochemistry; SP1: 751-754.
 - Vijaya Nirmala, T., A. Devivaraprasad Reddy, E. Karuna Sree, K. Venkata Subbaiah, G. Shali Raju and Reddy, R.V.S.K. 2018. Salmonellosis in Poultry: A Case Report. International Journal of Current Microbiology and Applied Sciences 7(02): 2347-2349.
 - Reddy, V Deepthi, T Vijaya Nirmala, G Shali Raju, K Venkata Subbaiah and Dr. JV Prasad. 2018. An evaluation study on viable integrated farming system (IFS) model in Godavari delta of Andhra Pradesh. Journal of Pharmacognosy and Phytochemistry; SP1: 1226-1235.
 - Pavani, S., Vani, V.S., Dorajee Rao, A.V.D., Viji, C.P., Suneetha, D.R.S., Subbaiah, K.V., Kiran Kumar, G.N. and Sarada, P. 2018. Influence of Pre-Treatments and





Drying Methods on Physico-Chemical Characteristics of Green Chilli Powder. *Int. J. Pure App. Biosci.* 6(2): 1148-1152 (2018).

- Pavani, S., Vani, V.S., Dorajee Rao, A.V.D., Viji, C.P., Suneetha, D.R.S., Subbaiah, K.V., Kiran Kumar, G.N. and Sarada. P., 2018. Effect of Pre-Treatments and Drying Methods on Quality of Greenchilli Powder. *Int. J. Pure App. Biosci.* 6(2): 1153-1157 (2018).
- K Vidyasagar, RVSK Reddy, K Venkata Subbaiah, M Madhavi, SS Vijayapadma. 2018. Effect of integrated weed management practices on weed control efficiency, yield and economics in brinjal. *Journal of Pharmacognosy and Phytochemistry* 2018; 7(5): 2716-2719.
- Vidyasagar, K., Reddy, R. V. S. K., Venkata Subbaiah, K., Madhavi, M., Vijayapadma, S. S., 2018. Efficacy of Herbicides and Cultural Practices on Weed Flora and Weed Density at Different Days after Transplanting in Kharif Brinjal. *Crop, Int. J. Pure App. Biosci.* 6(5): 854-862 (2018).
- Vidyasagar K.,R. V. S. K. Reddy, K. Venkata Subbaiah, M. Madhavi and Vijayapadma S. S. 2018. WeedManagement Practices on Nutrient Uptake, Growth Parameters and Yield in Kharif Season Brinjal. *Int.J.Curr.Microbiol.App.Sci.* 7(10): 3745-3752.
- P Sarada, V Sudha Vani, R Rajya Lakshmi, V Suchitra, Dr. SalomiSuneetha and K Venkata Subbaiah.2018. Influence of variety and drying methods on yield and quality of the Amchur prepared from fallen unripe mango fruits. *International Journal of Chemical Studies* 2018; 6(6): 1570-1573.

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

Sl.No.	Activities	No. (2018-19)
1	Books/Book chapters	02
2	Research papers	02
3	Abstracts	02
4	Technical Bulletins	05
5	Leaflets/Pamphlets	06
6	Popular articles	04
7	Participation in International and National Conferences/Symposium/Workshops & HRD Programmes	08

KRISHI VIGYAN KENDRA, PERIYAVARAM

P.Manjari, I.Hyder, S.Kapoor, M. Senthinathan, A.K.Dang. 2018. Exploring the concentration –dependent actions of interferon-tau on bovine neutrophils to understand the process of implantation. Wiley- journal of Biochemistry





KRISHI VIGYAN KENDRA, VONIPENTA

Sl.No.	Activities	No. (2018-19)
1	Books/Book chapters	0
2	Research papers	0
3	Abstracts	0
4	Technical Bulletins	1
5	Leaflets/Pamphlets	2
6	Popular articles	3
7	Participation in International and National Conferences/Symposium/Workshops & HRD Programmes	1

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUEM

- Chittijagadeesh, **MMadhavi**, MSivaprasad and VV Padmaja. 2018. Effect of organic manures on benefit cost ratio of Beetroot cv. Crimson Globe. International journal of current microbiology and applied sciences. **Vol.No.7. NAAS Rating 5.38**
- ChittiJagadeesh, **MMadhavi**, MSivaprasad and VV Padmaja. 2018. Effect of organic manures on quality and shelf life of Beetroot cv. Crimson Globe. International journal of current microbiology and applied sciences **Vol.No.7. NAAS Rating 5.38**
- ChittiJagadeesh, **MMadhavi**, MSivaprasad and VV Padmaja. 2018. Effect of organic manures on nutrientuptake of Beetroot cv. Crimson Globe. International journal of current microbiology and applied sciences **Vol.No.7. NAAS Rating 5.38**
- ChittiJagadeesh, **MMadhavi**, MSivaprasad and VV Padmaja. 2018. Effect of organic manures on growth and yield attributes of Beetroot cv. Crimson Globe. International journal of current microbiology and applied sciences **Vol.No.7. NAAS Rating 5.38**
- P. Pranuthi, **T.Suseela**, D.V. Swami, D.R. SalomiSuneetha and V. Sudha Vani. 2018. Effect of Holding Solutions on Biochemical and Microbial Observations in Extending the Vase Life of Cut Carnation cv. Kiro. International Journal of Current Microbiology and Applied Sciences **Vol.No. 7(8) : 1365-1370 NAAS Rating 5.38**
- S Leela Praveen, **N Emmanuel**, CP Viji, K Umajyothi and DR SalomiSuneetha. 2018. Screening of diverse brinjal genotypes against major pests of brinjal. Journal of Entomology and Zoology Studies **Vol.No.6(5):1052-1059 NAAS Rating 5.53**
- P. Pranuthi, **T. Suseela**, D. V. Swami, D. R. SalomiSuneetha and V. Sudha Vani. 2018. Effect of Holding Solutions on the Water Relations in Vase Life of Cut Carnation cv. Kiro. International Journal of Current Microbiology and Applied Sciences. **Vol.No.7(8): 1371-1376 NAAS Rating 5.38**
- P. Sridevi, V. Vijaya Bhaskar, **P.Subbaramamma** and D.R.S. Suneetha. 2018. Effect of *Aloe vera* Gel on the Physiological, Biochemical and Quality Parameters of Pomegranate Arils cv. 'Bhagwa'. International Journal of Current Microbiology and Applied Sciences **Vol.No7(1):1757-1766 NAAS Rating 5.38**
- J. Swetha, **T. Suseela**, A.V. D. Dorajeerao, D.R. SalomiSuneetha and R.V. Sujatha. 2018. Effect of Spacing and Nitrogen on Vegetative Growth and Flower Yield of Asiatic Lily CV. Tressor under Shade Net Condition. International Journal of Current Microbiology and Applied Sciences. **Vol.No. 7(8): 4800-4809 NAAS Rating 5.38**





- S. Pavani, **V. SudhaVani**, A.V.D. Dorajee Rao, C.P. Viji, D.R. SalomiSuneetha, K. Venkata Subbaiah, G. N. Kiran Kumar and P. Sarada. 2018. Influence of Pre-Treatments and Drying Methods on Physico-Chemical Characteristics of Green Chilli Powder. International Journal of Pure and Applied Biosciences **Vol.No.6** (2): 1148-1152 **NAAS Rating** 4.74
- S. Pavani, **V. SudhaVani**, A.V.D. DorajeeRao, C.P. Viji, D. R. SalomiSuneetha, K. Venkata Subbaiah, G. N. Kiran Kumar and P. Sarada. 2018. Effect of Pre-Treatments and Drying Methods on Quality of Green Chilli Powder. International Journal of Pure and Applied Biosciences **Vol.No.6** (2): 1153-1157 **NAAS Rating**4.74
- M. Tagore Naik, D. Srihari, **A. V. D. Dorajeerao**, K. Sasikala, K. Umakrishna and D. R. S. Suneetha2018. Yield and biochemical quality in relation to spacing and nutrition interactions in seed guar varieties. Plant Archives **Vol.No.** 18 (1) 199-206 **NAAS Rating**4.41
- M. Tagore Naik, D. Srihari, **A. V. D. Dorajeerao**, K. Sasikala, K. Umakrishna and D. R. S. Suneetha2018. Influence of spacing and nutrition on pod characters in promising varieties of cluster bean under Mahanandi Conditions. Plant Archives **Vol.No.** 18 (1) 375-381 **NAAS Rating** 4.41
- P PratyushaBhagavati, TSKK Kiran Patro, M Lakshmi Narayana Reddy, **N Emmanuel**, DR SalomiSuneetha and N Vara Prasad. 2018. Studies on genetic variability, heritability and genetic advance in yardlong bean (*Vigna unguiculata*(L.) walp. ssp. *sesquipedalis*verdc.). International Journal of Chemical Studies**Vol.No.** 6(4)1135-1138 **NAAS Rating** 5.31
- P PratyushaBhagavati, TSKK Kiran Patro, M Lakshmi Narayana Reddy, **N Emmanuel**, DR SalomiSuneetha and N Vara Prasad. 2018. Studies on genetic divergence in yardlong bean (*Vigna unguiculata*(L.) walp. ssp. *sesquipedalis*verdc.) International Journal of Chemical Studies **Vol.No.** 6(4) 1139-1142 **NAAS Rating** 5.31
- Rekha Eda, D.V. Swami, B. Prasanna Kumar, T.S.K.K. Kiran Patro and **D.R. SalomiSuneetha**2018. Effect of Organic Manures on Fruit Quality of Papaya cv. Arka Prabhat International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(12): 3605-3610 **NAAS Rating** 5.38
- Usha Rani, V., Ramesh Babu, B., Soman, P.,**Uma Jyothi, K. and Sasikala, K.** 2018. Studies on the effect of plant geometry and nutrients on fruit quality in processing cultivars of tomato. International Journal of Agriculture Sciences **Vol.No.** 10 (6) **NAAS Rating** 4.20
- Usha Rani, V., Ramesh Babu, B., Soman, P.,**Uma Jyothi, K.** and Sasikala, K. 2018. Influence of plant geometry and nutrients on yield attributes in processing cultivars of tomato (*Solanum lycopersicum L.*). International Journal of Agriculture Sciences **Vol.No.** 10 (6) **NAAS Rating** 4.20
- B Babu Rao, D V Swami, P Ashok, B Kalyana Babu, D Ramajayam and **K Sasikala.** 2018. Estimation of genetic variability and heritability for yield and its related components in Cassava (*Manihot esculenta*Crantz) genotypes. International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(6): 287-297 **NAAS Rating** 5.38
- Meenakshi Badu, P Ashok, T S K K Kiran Patro and **K Sasikala.** 2018. Correlation between physiological and yield attributes of Orange flesh sweet potato (*Ipomoea*





- batatus*(L.) Lam) genotypes. International Journal of Pure and Applied Bioscienc. **Vol.No.6**(1), 1362-1367 **NAAS Rating** 4.74
- Sravani, V, P Ashok, **K Sasikala** and B. Ramesh babu. 2018. Effect of intergeneric pollen on induction of parthenocarpy in watermelon (*Citrullus lanatus*Thunb.). International Journal of Current Microbiology and Applied Sciences. **Vol.No.** 7(12): 1-6. **NAAS Rating** 5.38
 - T Lakshmi Tirupathamma, L Naram Naidu, C Venkata Ramana **and K Sasikala.** 2018. Genetic divergence studies in paprika (*Capsicum annum* L.). International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(8):199-215 **NAAS Rating** 5.38
 - T Lakshmi Tirupathamma, **L Naram Naidu**, C Venkata Ramana and K Sasikala. 2018. Genetic association analysis for qualitative traits in paprika (*Capsicum annum* L.) genotypes. International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(8):1273-1281 **NAAS Rating** 5.38
 - V Sravani, P Ashok, **K Sasikala** and B Ramesh babu. 2018. Induction of parthenocarpy through growth regulators in watermelon (*Citrullus lanatus* thumb.). International Journal of chemical studies **Vol.No.** 6(6):182-184. **NAAS Rating** 5.31
 - M Tagore Naik, D Srihari, **A V D Dorajeerao**, K Sasikala, K Umakrishna and D R S SalomiSuneetha. 2018. Growth indices influenced by plant growth regulators in seed cluster bean. International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(11):3104-3117
 - M Tagore Naik, D Srihari, **A V D Dorajeerao**, K Sasikala, K Umakrishna and D R S SalomiSuneetha. 2018. Effect of plant growth regulators on nitrate reductase activity in seed guar varieties. International Journal of Current Microbiology and Applied Sciences. **Vol.No.** 7(11):3096-3103. **NAAS Rating** 5.38
 - S Lokeswari, P Ashok, R V S K Reddy and **K Sasikala.** 2018.
 - Studies on heterosis for yield and yield contributing traits in okra (*Abelmoschus esculentus* (L.) Moench. Mutilogic in Science (special issue) **Vol.**8, 169-173. **NAAS Rating** 5.20
 - G Koteswara Rao, P Ashok, D V Swami and **K Sasikala.** 2018. Effect of plant growth regulators on yield, quality and economics of orange flesh sweet potato (*Ipomoea batatas* (L.) Lam). Mutilogic in Science (special issue) vol.8, 311-314. **NAAS Rating** 5.20
 - V Sravani, P Ashok, **K Sasikala** and B Ramesh Babu. 2018.
 - Effect of different plant growth regulators on induction of parthenocarpy in watermelon (*Citrullus lanatus*Thunb). Mutilogic in Science (special issue) vol.8, 393-395. **NAAS Rating** 5.20
 - V Sravani, P Ashok, B Ramesh Babu and **KSasikala.** 2018. Induction of seedlessness through intergeneric pollen in watermelon (*Citrullus lanatus*Thunb.). International journal of chemical studies **Vol.No.** 6(6): 2136-2138 **NAAS Rating** 5.31
 - V Sravani, P Ashok, B Ramesh Babu and **KSasikala.** 2018. Induction of parthenocarpy through intergeneric pollen and growth regulators in horticultural crops: A review. International journal of chemical studies **Vol.No.** 6(6): 2438-2441 **NAAS Rating**5.31
 - B Babu Rao, D V Swami, P Ashok, B Kalyana Babu, D Ramajayam and **K Sasikala.** 2018. Genetic diversity studies based on principal component analysis for yield attributes in Cassava genotypes. International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(12): 1424-1430 **NAAS Rating** 5.38



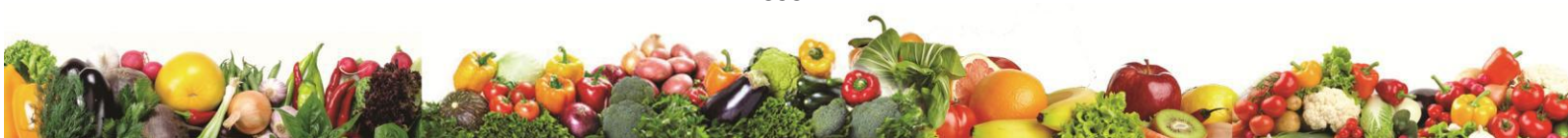


- S Lokeswari, P Ashok, R V S K Reddy and **K Sasikala**. 2018. Studies on combining ability and gene action for yield and yield contributing characters in okra (*Abelmoschus esculentus* (L.) Moench). Journal of Pharmacognosy and Phytochemistry. **Vol.No. 7(6):2013-2016. NAAS Rating 5.21**
- Lalit Dhruve, V. Suchitra, **V. Sudha Vani**, P. Subbaramamma and L. Saravanan 2018. Rooting and shooting behaviour of red and white pulped varieties of dragon fruit (*Hylocereusundatus*) in relation to indole butyric acid concentrations. International Journal of Agricultural Sciences. Volume 14 Issue 1 :229-234 **NAAS Rating 4.20**
- P. Pranuthi, **T. Suseela**, D. V. Swami, D. R. SalomiSuneetha and V. Sudha Vani. 2018. Effect of Packing and Storage Conditions on Physiological Loss in Weight, Diameter of the Flower, Electrolyte Leakage in Extending the Vase Life of Cut Carnation cv. Kiro. International Journal of Current Microbiology and Applied Sciences **Vol.No. 7(8): 1378-87 NAAS Rating 5.38**
- N Vara Prasad, **K Uma Jyothi**, V Sudhavani, RV Sujatha and P PratyushaBhagavati. 2018. Studies on effect of biofertilizers in combination with inorganic nutrients on growth parameters of sprouting broccoli (*Brassica oleracea var. italica L.*). International Journal of Chemical Studies. **Vol.No. 6 (4) 1171-1174 NAAS Rating 5.31**
- N Vara Prasad, **K Uma Jyothi**, V Sudhavani, RV Sujatha, P Pratyusha and K Sai Siri Chandana. 2018. Studies on effect of biofertilizers in combination with inorganic nutrients on yield and economics of sprouting broccoli (*Brassica oleracea var. italica L.*). International Journal of Chemical Studies**Vol.No. 6 (5)1337-1339NAAS Rating 5.31**
- N Vara Prasad, **K Uma Jyothi**, V Sudhavani, RV Sujatha, P PratyushaBhagavati and K Sai Siri Chandana. 2018. Studies on effect of biofertilizers in combination with inorganic nutrients on NPK uptake by plant and NPK status of soil after harvest in sprouting broccoli (*Brassica oleracea var. italica L.*). International Journal of Chemical Studies **Vol.No. 6 (5) NAAS Rating 5.31**
- N Vara Prasad, **K Uma Jyothi**, P PratyushaBhagavati , V Sudhavani and RV Sujatha. 2018. Studies on effect of biofertilizers in combination with inorganic nutrients on yield and its attributes of sprouting broccoli (*Brassica oleracea var. italica L.*). International Journal of Chemical Studies **Vol.No. 6 (6) NAAS Rating 5.31**
- P. Pranuthi, **T. Suseela**, D. V. Swami*, D. R. SalomiSuneetha and V. Sudha Vani. 2018. Effect of Different Packing and Storage Conditions on Biochemical parameters in Extending the Vase Life of Cut Carnation cv. Kiro. International Journal of Current Microbiology and Applied Sciences **Vol.No. 7(8): 1348-58 NAAS Rating 5.38**
- P. Pranuthi, **T. Suseela**, D. V. Swami*, D. R. SalomiSuneetha and V. Sudha Vani. 2018. Effect of Packing and Storage Conditions on Physical and Physiological Parameters in Extending the Vase Life of Cut Carnation cv. Kiro. International



Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(8): 1356-1364
NAAS Rating 5.38

- V. DivyaVani, **P. Vinaya Kumar Reddy**, P. Ramadevi and D.R. SalomiSuneetha. 2018. Effect of growing media and biofertilizers on seed germination and growth characters of custard apple. Progressive Research-An International Journal **Vol.No.** 13(4):343-348 **NAAS Rating** 3.53
- K. Antony Prajwala, **V.SudhaVani**, P. Vinaya Kumar Reddy, C.P. Viji and K. Uma Krishna. 2018. Effect of pre-sowing treatments on germination and growth characters of karonda cultivars. Progressive Research-An International Journal **Vol.No.** 13(Special): 441-447 **NAAS Rating** 3.53
- Siva Kumar, V, **Uma Jyothi, K**, Venkataramana, C, Rajyalakshmi, R, Paratpara Rao, M and Uma Krishna, K. 2018. Stability analysis of brinjal (*Solanum melongena*) hybrids and parents for yield and yield components. An International Refereed, Peer Reviewed & Indexed quarterly Journal in Science, Agriculture & Engineering. **Vol.No.** 8 (Special Issue – A) **NAAS Rating** 5.20
- **K Usha Kumari**, K Uma Jyothi, R.V.S.K. Reddy, K Rajendra Prasad, C.P. Viji and R.V. Sujatha. 2018. Effect of intercropping and INM practices on growth and yield of chilli (*Capsicum annuum* L.). International Journal of Current Microbiology and Applied Sciences **Vol.No.**7(11) **NAAS Rating** 5.38
- **K. Aruna Kumari**, A. Prasad babu, Ch.V. Durga Rani and R.M. Sundaram. 2018. Identification of Genotype Specific Marker for Samba Mahsuri (BPT 5204) Variety. International Journal of Current Microbiology and Applied Sciences **Vol.No.** Volume 7 (12) **NAAS Rating** 5.38
- **Gangadhara Rao P**, Behera TK, Gaikwad AB, Munshi AD, Jat GS and Boopalakrishnan G. 2018. Mapping and QTL analysis of gynoecey and earliness in bitter gourd (*Momordicacharantia* L.) using genotyping-by-sequencing (GBS) technology. Frontiers in Plant Sciences. **Vol.No.** 9:1555. **NAAS Rating** 10.3
- **B.V.G. Prasad**, S. Chakravorty, P. Gangadhara Rao and P. Deb. 2018. Effect of Post-harvest Treatments and Packaging on Spinach Beet (*Beta vulgaris varbengalensis*Hort.) under Ambient Condition. International Journal of Current Microbiology and Applied Sciences. **Vol.No.** 7(11): 711-720. **NAAS Rating** 5.38
- **P. Gangadhara Rao**, B.V.G. Prasad, T. Kranthi Kumar, T. Lakshmi Tirupathamma, P. Roshni and T. Tejaswini. 2018. Breeding for Climate Resilient Parthenocarpic Vegetables. International Journal of Current Microbiology and Applied Sciences. **Vol.No.** 7(11): 2473-2492 **NAAS Rating** 5.38
- **Ravi Kiran Thirumdasu** and Ranjit Chatterjee. 2018. Search for superior fruit characters of pumpkin genotypes from various parts of India and evaluation under eastern Himalayan region. International Journal of Current Microbiology and Applied Sciences **Vol.No.** 7(05): 1643-1650 **NAAS Rating** 5.38





- **Ravi Kiran Thirumdasu** and Ranjit Chatterjee. 2018. Pumpkin (*Cucurbita moschata*Duch. ex. Poir.) genotypes collected from different parts of India and their performance under eastern Himalayan region. International Journal of Agriculture Sciences **Vol.No.** 10(6): 5431-5436 **NAAS Rating** 4.20
- PinkeyDukpa, Ranjit Chatterjee, **Ravi Kiran Thirumdasu** and Satish Kumar Subba. 2018. Performance of terrestrial water spinach (*Ipomoea reptans*) through biofortification under different mode and source of iron nutrition. Current J. of Applied Science and Technology (*British Applied Science & Technology*) **Vol.No.** 27(2): 1-8 **NAAS Rating** 5.32
- Momoko Thokchom, LoitongbamSulochana Devi, **Ravi Kiran Thirumdasu**, A.K. Bijaya Devi and K.H. James. 2018. Growth, Physiological Studies and Yield of Taro (*Colocasia esculenta* Schott) cv. Mukhi Pan as Influenced by Intercropping and Row Pattern under Manipur Condition. International Journal of Current Microbiology and Applied Sciences. 7(5): 925-931
- Divya Bharathi, V., **Viji, C.P.**, Phani Kumar, K., Sudha Vani, V., Damodar Reddy, P., Anju Nehra and Rohit Kumar Nayak. 2018. Biodiversity of mites in horticultural ecosystems. Progressive Research. 13(4): 306-310.
- P PratyushaBhagavati, TSKK Kiran Patro, M Lakshmi Narayana Reddy, N Emmanuel, **DR SalomiSuneetha**and N Vara Prasad. 2018. Studies on genetic divergence in yardlong bean (*Vigna unguiculata* (L.) walp. ssp.sesquipedalisverdc.). International Journal of Chemical Studies. 6(4): 1139-1142.
- P PratyushaBhagavati, TSKK Kiran Patro, M Lakshmi Narayana Reddy, N Emmanuel, **DR SalomiSuneetha** and N Vara Prasad. 2018. Studies on genetic variability, heritability and genetic advance in yardlong bean (*Vigna unguiculata* (L.) walp. ssp. sesquipedalisverdc.). International Journal of Chemical Studies. 6(4): 1135-1138.
- P PratyushaBhagavati, TSKK Kiran Patro, N Vara Prasad, M Lakshmi Narayana Reddy, N Emmanuel and **DR Salomi Suneetha.2018.** Path analysis for growth, quality, yield and yield components in yardlong bean (*Vigna unguiculata*(L.) Walp. ssp. sesquipedalisverdc. Journal of Pharmacognosy and Phytochemistry. 7(6): 2015-2017.
- P PratyushaBhagavati, T. S. K. K. Kiran Patro, N. Vara Prasad, M. Lakshmi Narayana Reddy, N. Emmanuel and **D. R. SalomiSuneetha. 2018.**Correlation for Growth, Quality, Yield and Yield Components in yardlong bean (*Vigna unguiculata* (L.) walp. ssp. sesquipedalisverdc.). International Journal of Current Microbiology and Applied Sciences. 8 (01).
- T. Kranthikumar, B.V.K Bhagavan, K. Mammatha, R. Naga lakshmi and **P. Subbaramamma. 2018.** Influence of 1-MCP on pectin methyl esterase, peroxidase and catalase enzymes in Banana (*Musa paradisiaca* L.) cv. Tellachakkerkeli during storage. International Journal of Current Microbiology and Applied Sciences. 7(12)





- T. Kranthikumar, B.V.K Bhagavan, K. Mammatha, R. Naga lakshmi and **P. Subbaramamma. 2018.** Post harvest fumigation of 1-MCP influences cell wall degrading and antioxidant enzymes in Banana (*Musa paradisiaca* L.) cv. Tellachakkerkeli during storage. *International Journal of Current Microbiology and Applied Sciences.* 7(12).
- T. Kranthikumar, B.V.K Bhagavan, K. Mammatha, R. Naga lakshmi and **P. Subbaramamma. 2018.** Response of 1-MCP on physiological and physical characteristics in Banana (*Musa paradisiaca* L.) cv. Tellachakkerkeli during storage. *International Journal of Current Microbiology and Applied Sciences.* 7(12).
- Dhatrika Rani T, Srihari **D, Dorajee Rao AVD** and P. Subbaramamma. 2018. Effect of rooting media and IBA treatments on root to shoot ratio in terminal cuttings of guava (*Psidium guajava*) cv. Taiwan pink. *International Journal of Chemical Studies.* 6 (4).
- Dhatrika Rani T, Srihari **D, Dorajee Rao AVD** and P. Subbaramamma. 2018. Effect of rooting media and IBA treatments on root production and survival of terminal cuttings in guava (*Psidium guajava*) cv. Taiwan pink under mist house. *International Journal of Chemical Studies.* 6 (5).
- S.Sujatha, V.Suchitra, D.V.Swami, **P.Subbaramamma**, K. Uma Krishna and L.Sravani. 2018. Influence of mulching materials on fruit quality of strawberry (*Fragaria ananassa*Duch.) cv Camarosa grown under shafenet conditions of Coastal Andhra Pradesh. *International Journal of Agricultural Sciences.* 14(1)
- S.Sujatha, V.Suchitra, D.V.Swami, **P.Subbaramamma**, K. Uma Krishna and L.Sravani.2018. Influence of mulching materials on growth and yield of strawberry (*Fragaria ananassa*Duch.) cv Camarosa grown under shafenet conditions of Coastal Andhra Pradesh. *International Journal of Agricultural Sciences.* 14(1)
- R.Dhana Lakshmi, V.Vijaya Bhaskar and **P.Subbaramamma. 2018.** Influence of physiological responses on the establishment of turf grass species under different methods of planting. *International Journal of Agricultural Sciences.* 14(2).
- P.Arun Kumar, T.Suseela, A.V.D.Dorajee Rao and R.V.Sujatha. 2018. Study on heritability and genetic advance of the yield contributing characters of different pumpkin cultivars under coastal A.P. conditions. *International Journal of Current Microbiology and Applied Sciences.* 7(4): 1397-1401
- P.Arun Kumar, **T.Suseela**, R.V.Sujatha and. A.V.D.Dorajee Rao. 2018. Study on economic analysis of different pumpkin cultivars under coastal A.P. conditions. *International Journal of Current Microbiology and Applied Sciences.*
- P. Arun Kumar*, **T. Suseela**, A.V.D. Dorajeero and R.V. Sujatha. 2018. Study on the correlation coefficient analysis of the yield attributing characters of different pumpkin cultivars under coastal Andhra Pradesh conditions. *Journal of Pharmacognosy and Phytochemistry.* 7(2) : 1981-1984





- J.Swetha, **T.Suseela**, AVD. Dorajeerao, Dr.Salomisuneetha and R.V.Sujatha. 2018. Effect of spacing and nitrogen on flowering and vase life of Asiatic lily cv.Tressor under shade net condition.. International Journal of Chemical studies. 6(6): 2674-2678.
- J.Swetha, **T.Suseela**, AVD. Dorajeerao, Dr.Salomisuneetha and R.V.Sujatha. 2018. Effect of spacing and nitrogen on bulb formation of Asiatic lily cv.Tressor under shade net condition. Journal of Pharmacognosy and Phytochemistry. 7(6): 2441-2444.
- Mopidevi M Nagaraju, RVSK Reddy, K Madhavi Reddy, L Naram Naidu, A Snehalata Rani and K Uma Krishna. 2018. Assessment of genetic variability, heritability and genetic advance for quantitative, qualitative traits and ChLCV resistance in chilli (*Capsicum annum L.*). **Journal of Pharmacognosy and Phytochemistry. 7(6): 1467-1472**
- Mopidevi M Nagaraju, RVSK Reddy, K Madhavi Reddy, L Naram Naidu, A Snehalata Rani and K Uma Krishna. 2018. Assessment of genetic diversity in different Chilli(*Capsicum annum L.*) genotypes. **Journal of Pharmacognosy and Phytochemistry. 7(6): 1473-1478**
- **Mopidevi M Nagaraju, RVSK Reddy, K Madhavi Reddy, L Naram Naidu, A Snehalata Rani and K Uma Krishna. 2018.** Performance of Chilli (*Capsicum annum L.*) Genotypes for Yield and Yield Attributing Traits. International Journal of Current Microbiology and Applied Sciences. Volume 7 Number 12. 2252-2260.
- **K. Usha Kumari*, K. Uma Jyothi, R.V.S.K. Reddy, K. Rajendra Prasad, C.P. Viji and R.V. Sujatha. 2018.** Effect of Intercropping and INM Practices on Growth and Yield of Chilli (*Capsicum annum L.*). International Journal of Current microbiology and applied sciences. ISSN: 2319-7706 Volume 7:3325-3336.
- Himabindu, D. Srihari, M. Rajasekhar, **V. Sudhavani**, P. Subbaramamma and K. Uma Krishna. 2018. Characterization and quality assessment of potential indigenous Mango (*Mangifera indica L.*) Cultivars of Coastal, Districts in Andhra Pradesh, India by Bio-Chemical Markers. International Journal of Current Microbiology and Applied Sciences. Volume 7 Number 05C. M. Pradeep Kumar, **A. V. D. Dorajeerao**, T. Suseela and Zehra Salma. 2018. Stability analysis for flowering characters of chrysanthemum genotypes. Plant Archives. Vol. 18 No. 2, 2018 pp. 2609-2616.
- V. N. P Sivarama Krishna*, M. L. N.Reddy, **A.V.D. Dorajee Rao**, K.T. Venkataramana and P. Sudhakar. 2018. Effect of nutritional substitution on growth, flowering & fruit yield of papaya cv. Arka Prabhat. Plant Archives. Vol. 18 No. 1, 2018 pp. 1000-1004.
- M.K.Nagappa, N.Emmanuel, M.L.N.Reddy, **A.V.D.Dorajeerao**. 2018. Path Coefficient Analysis For Grain And Oil Yield In Coriander. International journal of current microbiology and applied sciences. 7(1); 1534-1541
- **M. Paratpara Rao**, B. Selvi, V.K. Gupta, R.V.S.K. Reddy, John Joel, and B. Jaya Kumar. 2018. Antioxidant enzymes and physiological traits associated with heat tolerance in potato. International Journal of Chemical Studies. 6(6): 1894-1899.
- **Paratpara Rao, M**, B. Selvi, V. K. Gupta, R.V.S.K. Reddy, John Joel, and B. Jeyakumar . 2018. Morphological Traits associated with heat tolerance in potato. International Journal of Current Microbiology and Applied Sciences. 7(12): XX-XX





- **K. Siva Kesavao1**, T. Raghavarao and P. Suryanarayana.2018. Bitter-Gourd Attenuates Pre-Diabetes Induced Lens Abnormalities in Neonatal Streptozotocin Induced Rat Model. International journal of pure and applied bioscience. Volume 6, PP. 330-344.
- Suryanarayana P, Arlappa N, Sai Santhosh V, Balakrishna N, Lakshmi Rajkumar P, Prasad U, Raju Bb, K. Siva Kesavao, DivyaShoshanni K, Seshacharyulu M, GeddamJb, Prasanthi Ps And Ananthan R. 2018. Prevalence of vitamin D deficiency and its associated factors among the urban elderly population in Hyderabad metropolitan city, South India. Annals of Human Biology. Vol ume 45, PP. 133-139
- Vadakattu Ss, Ponday Lr, Nimmathota A, Nagalla B, Kondru Ds, Undrajavarapu P, Banavath Br⁴, K. Siva Kesavao, Punjal R And Palla S. 2018. Prevalence of Nutritional Anemia and Hyperhomocysteinemia in Urban Elderly. Indian journal of Clinical Biochemistry. Vol ume34, PP. 330-335
- **K. Siva Kesavao1**, T. Raghavarao and P. Suryanarayana.2019. Beneficial effects of Bitter guard on neonatal streptozotocin (nSTZ) induced pre-diabetic renal alterations in the SD rat model. Bulletin of Environment, Pharmacology and Life Sciences. Volume 8, PP. 93-99
- **K. Siva Kesavao1**, T. Raghavarao and P. Suryanarayana. 2019. Cinnamon Attenuates Neonatal Streptozotocin (nSTZ) Induced Pre-diabetic Renal Alterations in the SD Rat Model via Maintenance of Proper Glucose Homeostasis and Antioxidant Property. International Journal of Current Microbiology and Applied Sciences.
- **K. Siva Kesavao**, T. Raghavarao and P. Suryanarayana. 2019. Modulation of the plasma glucose, insulin and lipid profile levels of neonatal streptozotocin (nstz) induced pre-diabetic rats by bitter gourd (*Momordica charantica*). Plant Archives. Volume 19, PP. 171-75.
- **V. Sekhar**, K. Umakrishna and V. Srinivasa Rao. 2019. Application of T-tests for Horticulture Data (Watermelon, Mangoes) with an Example Problems and Solutions. International Journal of Current Microbiology and Applied Sciences. Volume 8 Number 03.
- **V. Sekhar**, V. Srinivasa Rao, K. Umakrishna and Ch. Satyavani. 2019. Analysis of Simple Correlation Coefficient by using Theoretical and MS-Excel Procedure for Gerebera (Plant Height and Plant Spread). International Journal of Current Microbiology and Applied Sciences. 8(3): 950-953.
- **V. Sekhar**, K. Umakrishna, V. Srinivasa Rao and Ch. Satyavani. 2019. Completely Randomised Design(CRD) Analysis – by Manual and MS-Excel. International Journal of Current Microbiology and Applied Sciences. 8(3): 954-959.
- P. Raviteja, V. Vijaya Bhaskar and **P. Subbaramamma**. 2019. Influence of graded levels of nitrogen and potassium on physiological growth parameters and flower yield of garland chrysanthemum (*Chrysanthemum coronarium* L.). International Journal of Agricultural Sciences. 15(1)

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- Ruth C and Gopal K(2018) Integrated management of wilt *Fusarium oxysporum f. sp. lycopersici* in tomato crop. International journal of Applied and Natural sciences. Vol. 7(3) 49-56



- Ruth C (2018) Insect transmission of Bud necrosis virus infecting tomato (*Lycopersicon esculentum* Mill.) International journal of Agricultural Sciences Vol:10(8)pp. 5842-5845
- Lakshmi Naga Nandini M, Ruth Ch, Gopal K (2018) *In vivo* screening of turmeric (*Curcuma longa* L.) germplasm of different duration groups against rhizome rot caused by *Pythium* and *Fusarium* spp. International journal of plant sciences Vol. 13 (1) 26-34
- Ruth C and Gopal K, Srinivasulu B .Ramakrishna M.(2018) A Novel species of *Staphylotrichumcurcumae* causing Rhizome rot of turmeric. World journal of Pharmacy and Pharmaceutical Sciences. Vol.7 (7) 1030-1032
- Thoyajakshi Bai A, Ruth Ch, Gopal K, Arunodayam K, Tanuja Priya B and Ramakrishna M. (2018) Survey and Identification of Fusarium Wilt Disease in Chilli (*Capsicum annum* L.). International Journal of Current Microbiology and Applied Sciences 7(06):1073-1078
- Jhansi Rani N, G.Rajulu B Ruth Ch, Kavitha M., Madhumathi C, Ramaiah M. and Ramakrishna M. (2018). Studies on leaf spot diseases in acid lime in Nellore region of Andhra Pradesh. Plant Archives Vol.18(2)
- Lakshmi Naga Nandini M, Rajesh Naik S.M., Ruth Ch, Gopal K (2018) Biodiversity and Antimicrobial Activity of Endophytes. International journal of Pure and applied Bioscience 6(5): 1176-1190
- Thoyajakshi Bai A, Ruth Ch, Gopal K. and Surya Prakash Reddy (2018) Effect of volatile and non-volatile inhibitory compounds of rhizosphere fungal antagonistic microbes on the growth and development of chilli wilt pathogen *Fusarium oxysporum* International journal of Chemical studies: 6(6): 1678-1680
- Lakshmi Naga Nandini M, Rajesh Naik S.M., Ruth Ch, Gopal K (2018) Compatibility of biocontrol agents with fungicides used in turmeric cultivation under *invitro* conditions. Journal of Pharmacognosy and Phytochemistry 7(6). 1271-1276
- Thoyajakshi Bai A, Ruth Ch, Dinesh K, Devika Saha (2018) In vitro evaluation of rhizosphere microbial antagonists against wilt pathogen *Fusarium oxysporum* in chilli (*Capsicum annum* L.) Journal of plant development sciences Vol. 10(10): 547-551
- Jhansi Rani N, G.Rajulu B Ruth Ch, Kavitha M., Madhumathi C, Ramaiah M. and Ramakrishna M. (2018). Survey on leaf spot diseases in Acid lime in Nellore Region of Andhra Pradesh. Plant Archives Vol.18 No. 2, pp.2058-2060
- Y Sireesha and DS Reddy, 2018 Mango sudden decline: An emerging threat in nursery and mango orchards of Andhra Pradesh. Journal of Entomology and Zoology Studies 6(4): 449-454.Sadak Peer S, P. Syam Sundar Reddy, Syed Sadarunnisa, D.S. Reddy and S.R. Pandravada (2018) Genetic Variability and Heritability for Yield and Yield Attributes in Field Bean (*Lablab purpureus* L.) genotypes. International Journal of Current Microbiology and Applied Sciences, Vol. 7 (3):2131-2137.
- Sadak Peer S, P. Syam Sundar Reddy, Syed Sadarunnisa, D.S. Reddy and S.R. Pandravada (2018) Genetic divergence in Field Bean (*Lablab purpureus* L.) genotypes. Plant Archives, Vol. 18 (1):690-692.





- G. PurnaDattha Reddy, P. Syam Sundar Reddy, Chandra Mohan Reddy. G and ThanujaSivaram G (2018) Effect of foliar application of micro nutrients on growth and yield parameters in Tomato (*Solanum lycopersicon* L.). International journal of Pure and Applied Bioscience, Vol. 6 (2): 929-934.
- Naveen yadav B, P. Syam Sundar Reddy, Syed Sadarunnisa, G. Srinivasarao, Y. Deepthi Kiran and Lalitha Kadiri (2018) Influence of Organic and Inorganic Sources of Nitrogen on Growth and Yield of Radish (*Raphanus sativus* L.). International Journal of Current Microbiology and Applied Sciences, Vol. 7 (8):4499-4507.
- Naveen yadav B, P. Syam Sundar Reddy, Syed Sadarunnisa, G. Srinivasarao, Y. Deepthi Kiran and Ramanjaneyareddy A (2018) Root yield and nutrient uptake of Radish (*Raphanus sativus* L.) as influenced by the application of organic and inorganic sources of nitrogen and their combinations. International Journal of Chemical Studies, Vol. 6 (4): 3116-3119.
- K. Noorjahan, M. Raja Naik, M. Ramaiah and K. Gopal (2018) Influence of nutrients and *Piriformospora indica* on growth and biochemical attributes of African marigold cv. PusaBasantiGainda. Journal of Pharmacognosy and Phytochemistry 7(4): 55-60.
- M. Raja Naik and D. Sridhar (2018). Growth and yield response of radish cv. PusaHimani to Integrated Nutrient Management practices. International Journal of Agriculture, Environment and Bioresearch. 3(3): 43-49.
- G. Aditya, M. Raja Naik, B. Tanuja Priya, M.Ramaiah and M. Ramakrishna (2018). Response of China Aster (*Callistephus chinensis* L.) genotypes on growth, flowering and yield under shade net conditions. Multilogic in Science - An International Refereed, Peer Reviewed & Indexed Quarterly Journal in Science, Agriculture & Engineering. VOL. VIII, SPECIAL ISSUE (B): 34-38.
- M. Raja Naik, C. H. Ruth and C. H. Chinnabbai (2018). Growth, Flowering and Yield Response of Tomato Varieties under Polyhouse Conditions. International Journal of Pure & Applied Bioscience 6(1): 1303-1307.
- K. Noorjahan, M. Raja Naik, R. Nagaraju, K. Gopal, M. Ramaiah and M. Ramakrishna (2018). Flowering and Physiological Response of African Marigold (*Tagetes erecta* L.) cv. PusaBasantiGainda to Nutrients and *Piriformospora indica* (PGPRE). International Journal of Current Microbiology and Applied Sciences. Special Issue-6: 1963-1973.
- M. Raja Naik (2018). Influence of Micronutrients and Organics on Growth and Yield of Capsicum cv. Solan Bharpur under Shade Net Condition. International Journal of Current Microbiology and Applied Sciences. 7(5): 2166-2171.
- G. Aditya, M. Raja Naik, M. Ramaiah, B. Tanuja Priya and M. Ramakrishna (2018). Physiological response of China aster (*Callistephus chinensis* L.) genotypes under shade net conditions. Madras Agricultural Journal. 105(79)(2): 466-470.
- M. Raja Naik and M. Padmasree (2018). Evaluation of different turmeric (*Curcuma longa* L.) genotypes for growth and yield. Indian Horticulture Journal. 8(1):40-44.
- M. Raja Naik, K. Ajith Kumar, A.V. Santhosh Kumar (2018). Physiological response of *Dendrobium* cv. Earsakul to plant growth promoters and growing conditions. Journal of Agroecology and Natural Resource Management 5(1):4-8.





- Y Sireesha and R Velazhahan, 2018 Assay of cross-infectivity between isolates of *Peronosclerosporasorghica* causing downy mildew on maize and sorghum Journal of Entomology and Zoology Studies 6(5): 444-447.
- Sairam K, Gopal K, Ruth Ch, Arunodhayam K, Ramaiah M, 2019. "Study on efficacy of plant extracts and organic amendments against purple leaf blotch of onion (*Alternaria porri*) in invitro". National conference for post graduate students on novel approaches for doubling farmer income through sustainable agricultural production systems, Tirupati. PP. 83.
- Satyanarayana MSV, Gopal K, Kavitha M, Ruth Ch and Syed Sadarunnisa, 2019. Integrated disease management study on growth and agronomical characters against fusarium root in coriander (*coriandrum sativum* L.). Journal of Pharmacognosy and Phyto Chemistry, P.P.76-79.
- Mounika K.S, Lakshmi K.S, Reddy, P.S.S, Bala Krishna, M (2018). Influence Of Processing Time And Preservative Concentrations On Nutritional Quality Of Tomato Puree (*Lycopersiconesculentum* Mill.). An International Refereed, Peer Reviewed & Indexed Quarterly Journal in Science, Agriculture & Engineering, Vol VIII: 258-261.
- Ch. Sai RatnaSharavani, Swarajya Lakshmi Kode, B. Tanuja Priya, T. Usha Bharathi, M. Reddi
Sekhar, Ch. Ruth and M. Ramakrishna (2019). Studies on effect of Gamma irradiation on Survival and growth of Tuberose (*Polianthes tuberosa* L.). Advance in Bioresearch, Vol 10(1): 109-114.
- Ch. Sai RatnaSharavani, Swarajya Lakshmi Kode, B. Tanuja Priya, T. Usha Bharathi, M. Reddi Sekhar, Ch. Ruth and M. Ramakrishna (2019). Standardization of Lethal Dose of Gamma Radiation and Its Effect On Flowering And Postharvest Quality Of Tuberose. Bulletin of Environment, Pharmacology and life sciences, Vol 8(4): 105-109.
- Ruth C, Tagore Naik M (2018) Incidence of leaf spot disease caused by *Cercosporacapsici* in IPM and non IPM plots chilli (*Capsicum annum* L.) National symposium on plant health management: Embracing Eco-sustainable paradigm, IPS & AAU, Jorhat, February, 15-17, pp 73
- M.S.V. Satyanarayana , K. Gopal, M. Kavitha and Ch. Ruth (2018) In Vivo Screening Evaluation of Coriander (*Coriandrum sativum* L.) Germplasm for Fusarium Root Rot Resistance.) National symposium on plant health management: Embracing Eco-sustainable paradigm, IPS & AAU, Jorhat, February, 15-17, pp 205.
- Ch. S. RatnaSharvani, K. SwarajyaLakshmi, B. Tanuja Priya, U. Bharathi, Ch. Ruth and M.R. Shaker (2018) Studies on effect of gamma irradiation on survival and growth of tuberose variety Hyderabad Single. National conference on floriculture for rural and urban prosperity in the scenario of climate change from 16th to 18th February, pp. 225 CAE & PHT (CAU), Ranipool, Sikkim.
- Ch. S. RatnaSharvani, K. SwarajyaLakshmi, B. Tanuja Priya, U. Bharathi, Ch. Ruth and M.R. Shaker (2018) Standardization of Lethal dose of Gamma radiation and its effect on growth and flowering of tuberose variety Hyderabad Single. National conference for post graduate students on Techno strategic interventions for profitable



- Agriculture March, 26-27, pp.111, Acharya N.G. Ranga Agricultural University, Lam, Guntur
- Mounika Y, ThanujaSivaram G, P. Syam Sundar Reddy and M. Ramaiah (2018). Effect of Bio fertilizers and micro nutrients on growth, leaf yield and quality of Coriander(*Coriandrum sativum*) cv. Sadhana. Abstract published in national seminar on Technological and sustainability of protected cultivation for Hi-valued vegetable crops. ASPEE College of Horticulture & Forestry, NAU, Navsari, Gujarat. , from February 01-03, 2018. Pp: 85.
 - Raja Naik M, Syam Sundar Reddy P M Ramaiah, K. Gopal and M. Rama Krishna (2019). Xeriscaping- A new landscaping approach for dry areas- Review. Abstract published in Two day National symposium on HVCCUE”, 7th& 8th February,2019 conducted by Department of Horticulture, Annamalai University, Coimbatore, T.N. Pp :143.
 - Sireesha, Y Analysis of Defense Genes Expression in Maize upon Infection with *Peronosclerosporasorghi* XIV Agricultural Science Congress, 20-23 February, 2019, NASC, Pusa, New Delhi, India.
 - GeddiPurna Datta Reddy, K.M. Yuvaraj, Sidda Rood M, Saheb Pal, Syam Sundar Reddy P and Syed Sadarunnisa(2018) Utilization of Alien gene through inter specific hybridization in tropical vegetable crops. Book chapter published in “Research trends in Agriculture Sciences (Volume-12)”, Edited by Dr.R.K. Naresh, Professor Dept. of Agronomy, VPUA&T, Meerut, UP. Page No. 145-162.
 - GeddiPurna Datta Reddy, K.M. Yuvaraj, Syam Sundar Reddy P, Saheb Pal and Sidda Rood M (2018) Role of Vegetable grafting on management of abiotic and biotic stress conditions. Book chapter published in “Research trends in Agriculture Sciences (Volume-12)”, Edited by Dr.R.K. Naresh, Professor Dept. of Agronomy, VPUA&T, Meerut, UP. Page No. 163-182.
 - Sarada, G., Nagalakshmi, T., Gopal, K and Yuvaraj, K.M. 2018. Citrus rust mite (*Phyllocoptrutaoleivora* Ashmead): A Review. *Journal of Entology and zoology studies*, 6(6): 151-158.
 - Jahnavi, M., Ramakrishna Rao, A. and Sarada, G. 2018. Biology and morphology of citrus butterfly *Papiliodemoleus* Linnaeus (Lepidoptera : Papilionidae) on acid lime. *Journal of Entology and zoology studies*, 6(1): 1556-1561.
 - Sarada, G., Nagalakshmi, T and Gopal, K. 2019. Management of citrus thrips (*Scirtothripscitri*) in citrus ecosystem. National conference for post graduate students on “ Novel approaches for doubling farmer income through sustainable agricultural production systems” Tirupati from 7-8th, March, pp-160-161.
 - Sunitha, P., Sujatha, A. and Sarada, G. 2019. Incidence of red banded mango caterpillar, *Deanolissublimbalis* on Mango. National conference on identification, convergence, implementation of Science –Tech research on Sustainable Development (ICIESSD), Meerut,20-21, April, pp- 74.
 - D. Rameez Basha, L. Mukunda Lakshmi, Syed Sadarunnisa and K. T. Venkataramana (2018). Genetic Variability Studies for Yield and Yield Components in Onion (*Allium*



cepa) Genotypes. International Journal of Pure & Applied Bioscience. Vol. 6 (5) : 1140-1146

- Sadak Peer S, P. Syam Sundar Reddy, Syed Sadarunnisa, D.S. Reddy and S.R. Pandravada (2018). Genetic Variability and heritability for yield and yield attributes in Field Bean (*Lablab purpureus* L.) genotypes. International Journal of Current Microbiology and Applied Sciences. 7(3): 2131-2137.
- Sadak Peer S, P. Syam Sundar Reddy, Syed Sadarunnisa, D.S. Reddy and S.R. Pandravada (2018). Genetic divergence in Field Bean (*Lablab purpureus* L.) genotypes. Plant Archives. 18 (1):690-692.
- Naveen yadav B, P. Syam Sundar Reddy, Syed Sadarunnisa, G. Srinivasarao, Y. Deepthi Kiran and Lalitha Kadirri (2018). Influence of Organic and Inorganic Sources of Nitrogen on Growth and Yield of Radish (*Raphanus sativus* L.). International Journal of Current Microbiology and Applied Sciences, 7 (8):4499-4507.
- Naveen yadav B, P. Syam Sundar Reddy, Syed Sadarunnisa, G. Srinivasarao, Y. Deepthi Kiran and Ramanjaneyareddy A (2018). Root yield and nutrient uptake of Radish (*Raphanus sativus* L.) as influenced by the application of organic and inorganic sources of nitrogen and their combinations. International Journal of Chemical Studies, 6 (5): 3116-3119.
- Phani Kumar J, Syed Sadarunnisa, P. Syam Sundar Reddy, Mukunda Lakshmi L, and Srinivas Reddy D (2018). Studies on correlation and path-coefficient analysis for yield and its contributing characters in Cucumber (*Cucumis sativus* L.). International Journal of Chemical Studies, 6 (6): 1649-1653.
- Phani Kumar J, Syed Sadarunnisa, P. Syam Sundar Reddy, Mukunda Lakshmi L, and Srinivasa Reddy D (2018). Genetic divergence studies in Cucumber (*Cucumis sativus* L.) genotypes for yield and quality. International Journal of Current Microbiology and Applied Sciences, 7 (12): 2633-2643.
- Indraja G, Sadarunnisa Syed, Madhumathi C, Tanuja Priya B and Reddi Sekhar M (2018). Genetic divergence analysis in muskmelon (*Cucumis melo* L.). International Journal of Chemical Studies, 6(6): 2623-2626.
- S. Suneetha*, B. Tanuja Priya, M. Reddi Shekar, Syed Sadarunnisa and P. Latha (2018). Effect of Gamma Rays Treatments on Percentage Germination, Morphological Variation and Chlorophyll Mutation in Musk Okra (*Abelmoschus moschatus* L.). International Journal of Current Microbiology and Applied Sciences, Special Issue-6: 2875-2884.
- Syed Sadarunnisa*, RVSK Reddy, Hameedunnisa Begum, Narayan Reddy and M Krishna Reddy (2018). Identification of Sources of Bacterial Wilt Resistance in Brinjal (*Solanum melongena* L.). Vegetos An International Journal of Plant Research & Biotechnology, 31(2): 33-38.
- Sadarunnisa Syed, R. V. S. K. Reddy, H. Begum and T. M. Reddy (2018). Performance of Brinjal (*Solanum melongena* L.) Genotypes for Yield and Quality Traits under Southern zone of Andhra Pradesh. International Journal of Current Microbiology and Applied Sciences, Special Issue-7: 4977-4985.



COLLEGE OF HORTICULTURE, PARVATHIPURAM

- Rekha Eda, Swami DV, Prasanna Kumar B, TSKK, Kiran Patro DR SuneethaSalomi and P Subbaramamma.. 2018. Effect of Organic Manures on Fruit Quality of Papaya cv.Arka Prabhat. **Ind.J.Curr. Microbiol.App.Sci.** 7 (12): 3605-3610.
- Hima Bindu, D. Srihari, M. Rajasekhar, V. Sudhavani, P.Subbaramamma, K.UmaKrishna. 2018. Characterization and Quality Assessment of Potential Indigenous Mango (*Mangifera indica* L.) Cultivars of Coastal Districts in Andhra Pradesh, India by Bio-Chemical Markers. International Journal of Current Microbiology and Applied Sciences ,Vol. 7,Issue-5. 2141-2151, 5.38
- K Vidyasagar, RVSK Reddy, K Venkata Subbaiah, M Madhavi, SS Vijayapadma. 2018. Effect of integrated weed management practices on weed control efficiency, yield and economics in brinjal. Journal of Pharmacognosy and Phytochemistry 2018; 7(5): 2716-2719
- K Vidyasagar, RVSK Reddy, K Venkata Subbaiah, M Madhavi, SS Vijayapadma. 2018. Weed Management Practices on Nutrient Uptake, Growth Parameters and Yield in Kharif Season Brinjal..International Journal of Current Microbiology and Applied Sciences. 7. 3745-3752.
- K. Vidyasagar, R.V.S.K. Reddy, K. Venkata Subbaiah, M. Madhavi, S. Vijayapadma.2018. Efficacy of Herbicides and Cultural Practices on Weed Flora and Weed Density at Different Days after Transplanting in Kharif Brinjal Crop . Int. J. Pure App. Biosci. 6 (5): 854-862 (2018).

HORTICULTURE POLYTECHNIC, MADAKASIRA

- Ramana. V, Srihari. D, Reddy. R.V.S.K, Sujatha. M and Bhave. M.H.V. (2018) Estimation of Heterosis in Tomato (*Solanum lycopersicum* L.) for Yield attributes and Yield. Journal of Phormacognasy and Phytochemistry, SPI:
- Ramana. V, Srihari. D, Reddy. R.V.S.K, Sujatha. M and Bhave. M.H.V. (2018) Combining ability studies in Tomato (*Solanum lycopersicum* L.) for Yield attributes, Yield and Quality. Journal of Phormacognasy and Phytochemistry, SPI: 933-937.

CITRUS RESEARCH STATION, TIRUPATI

- Rajesh Naik, S.M., Venkata Ramana, K.T., Mukunda Lakshmi, L.,Nagaraju, R., and Sreenivasa Rao, G., 2018., Studies on effect of organic amendments and bio- agents on seedling growth of acid lime (*Citrus aurantifolia* Swingle) cv. Balaji., *Int. Curr.Microbiol.App.Sci.*, 2018, 7(7): 78-89.
- Rajesh Naik, S.M., Mukunda Lakshmi, L.,Venkata Ramana, K.T., and Lakshmi Naga Nandini, M.,2018, Effect of different potting media, bio-agents and organic amendments on nutrient uptake, percentage of saleable seedlings and root rot disease of of acid lime seedlings cv. Balaji., *Int. Curr.Microbiol.App.Sci.*, 2018, 7(12):
- Rajesh Naik, S.M., Venkata Ramana, K.T., Mukunda Lakshmi, L and Lakshmi Naga Nandini, M., 2018., Effect of organic amendments and bio- agents on growth of acid lime (*Citrus aurantifolia* Swingle) cv. Balaji seedlings in the nursery *Journal of pharmacology and phytochemisty*, 2018, 7(6): 1611-1616.



- D.Rameez Basha, L.Mukunda Lakshmi, Syed Sadarunnisa and K.T.Venkata Ramana, 2018, Genetic variability studies for yield and its components in onion (*Allium cepa* L.) genotypes, *Int. J. of Pure App. Biosci*:6(5):1140-1146.
- D.Rameez Basha, L.Mukunda Lakshmi, Syed Sadarunnisa and K.T.Venkata Ramana, 2018, Genetic divergence studies in onion (*Allium cepa* L.) genotypes for growth and yield parameters, *Int. J. of Pure App. Biosci*:6(5):1198-1203.
- D.Rameez Basha, L.Mukunda Lakshmi, 2018, Correlation and path coefficient analysis for some yield and related traits in onion (*Allium cepa* L.) genotypes, *Int. J. of Pure App. Biosci*:6(5):1249-1254.
- Srivastava, A K., Paithankar, D H., Venkataramana, K T., Binita Hazarika and Prakash Patil.,2019, INM in fruit crops: Sustaining quality production and soil health,*Indian Journal of Agricultural Sciences* **89** (3): 379–95, March 2019/Review Article
- Phani Kumar, J., Sadarunnisa Syed, Shyam Sundar Reddy, P., Mukunda Lakshmi, L and Sreenivasa Reddy, D., 2018, Studies on correlation and path coefficient analysis for yield and its contributing characters in cucumber (*Cucumis sativus* L.), *International Journal of Chemical studies*: 6(6): 1649-1653.
- Phani Kumar, J., Sadarunnisa Syed, Shyam Sundar Reddy, P., Mukunda Lakshmi, L and Sreenivasa Reddy, D., 2018, Genetic divergence studies in studies in cucumber (*Cucumis sativus* L.) genotypes for yield and quality, *Int. Curr.Microbiol.App.Sci.*, 2018, 7(12):
- P T Srinivas and L Mukunda Lakshmi, 2018, Study on Evaluation of Gladiolus Varieties for Cut Flower Production under Tropical Conditions of Tirupati, *The Andhra Agric. J* 65 (2): 384-387.
- P T Srinivas and L Mukunda Lakshmi, 2018, Performance of Some Gladiolus Hybrid Varieties under Tropical Conditions of Tirupati,*The Andhra Agric. J* 65 (3): 640-643
- P T Srinivas and L Mukundalakshmi, 2018, Path Coefficient Analysis of Floret Diameter with Growth and Floral Characters in Gladiolus, *The Andhra Agric. J* 65 (4): 922-926.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Chalapathi Rao, N.B.V., Nischala, A., Ramanandam, G. and Maheswarappa, H.P. 2018. Biological suppression of coconut black headed caterpillar *Opisina arenosella* outbreak in East Godavari district of Andhra Pradesh – eco friendly technology. *Current Science* Vol.115 (8) : 1588-1594.
- Neeraja, B., Snehalatharani, A., Maheswarappa, H.P., Ramanandam, G., Chalapathi Rao, N.B.V. and Padma, E. 2018. Management of Basal Stem Rot (*Ganoderma* Wilt) in Coconut with Effective Bioagents under Field Condition. *International Journal of Current Microbiology and Applied Sciences* 7(9): 1051-1060.
- Neeraja, B., Ramanandam, G., Chalapathi Rao, N.B.V. and Padma, E. 2019. Evaluations of fungicides on *Phytophthora palmivora* incitant of bud rot disease in coconut under in vitro. *International Journal of Chemical Studies* 7(1): 208-210





CASHEW RESEARCH STATION, BAPATLA

- Article on “Innovative Strategy in Augmenting Quality Planting Material Production” by Umamaheswara Rao. K, Nagendra Reddy. B and Dhanumjaya Rao. K published in Souvenir of National Conference on Cashew: “Productivity Enhancement and Value Addition for Doubling Farmer’s Income” at Vijayawada on 22nd – 23rd Feb, 2019.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Neeraja, B, Snehalatharani, A, Maheswarappa, H.P, Ramanandam, G, Chalapathi Rao, N.B.V. and Padma, E. 2018. Management of Basal Stem Rot (*Ganoderma Wilt*) in Coconut with Effective Bioagents under Field Condition. *International Journal of Current Microbiology and Applied Sciences*. 7(9): 1051-60.
- Chalapathirao, N.B.V, Snehalatha Rani, A, Nischala, A, Ramanandam, G. and Maheswarappa, H.P.2018. Management of rhinoceros beetle (*Oryctes rhinoceros* L.) by biological suppression with *Oryctes baculovirus* in Andhra Pradesh. *Journal of Plantation crops* .46 (2):124-27.
- Chalapathirao, N.B.V, Snehalatha Rani, A, Emmanuel, N, Ramanandam, G. and Maheswarappa H. P. 2018. Impact of Innundative Releases of Bio Agents in the Management of Coconut Black Headed Caterpillar *Opisinaarenosella* in Andhra Pradesh under Out Break Conditions.*International Journal of Pure and Applied Biosciences*. 6 (2): 427-33.
- Nagaraju, M.M, Reddy,R.V.S.K, Madhavi Reddy, K, Naram Naidu, L, SnehalataRani, A. and Uma Krishna, K.2018. Performance of Chilli (*Capsicum annum* L.) Genotypes for Yieldand Yield Attributing Traits. *International journal of current microbiology and applied sciences*. 7(12): 2252-60.
- Bhanu Prakash, G.C, Ramesh Babu, B, Mamatha, K, Snehalatha Rani, A and Umayjothi, K. 2019. Genetic divergence studies in colocasia [*Colocasia esculenta* (L.) Schott] germplasm. *International Journal of Chemical Studies*. 7(1): 998-1002.
- Ravindra Kumar, K,Kanwar Pal Singh, Jain, P.K, Raju, D.V.S, Prabhat Kumar, Reeta Bhatia and SapnaPanwar. 2018. Influence of growth regulators on callus induction and plant regeneration from anthers of *Tagetes* spp. *Indian Journal of Agricultural Sciences*.88(06): 970-77.
- Ravindra Kumar, K, Kanwar Pal Singh, Raju, D.V.S, SapnaPanwar, Reeta Bhatia, Surendra Kumar and Pavanesh Kumar Verma. 2018. Standardization of in vitro culture establishment and proliferation of micro-shoots in African and French marigold genotypes. *International Journal of Current Microbiology and Applied Sciences*. 7(1): 2768-81.
- Ravindra Kumar, K, Kanwar Pal Singh, Raju, D.V.S, SapnaPanwar and Reeta Bhatia. 2018. Circumventing phenolic exudation and poor survival in micro propagation of marigold. *Indian Journal of Horticulture*. 75 (02): 273-78.
- Kranthi Kumar, T., Bhagavan, B.V.K., Mamatha, K., Nagalakshmi, R. and Subbaramamma, P. 2018. Influence of 1-MCP on Pectin Methylesterase, Peroxidaseand Catalase Enzyme in Banana (*Musa paradisiaca* L.) cv. TellaChakkerakeliduring storage. *International journal of current microbiology and applied sciences*.7(12): 3126-3134.





- Kranthi Kumar, T., Bhagavan, B.V.K., Mamatha, K., Snehalatha Rani, A. and Subbaramamma, P. 2018. Response of 1-MCP on Physiological and physical characteristics in Banana (*Musa paradisiaca* L.) cv. TellaChakkerakeliduring storage. *International journal of current microbiology and applied sciences*. 7(12):3135-3144.
- Kranthi Kumar, T., Bhagavan, B.V.K., Mamatha, K., Snehalatha Rani, A. and Subbaramamma, P. 2018. Postharvest fumigation of 1-MCP influences Cell wall degrading and Antioxidant Enzymes in Banana (*Musa paradisiaca* L.) cv. Grand Naineduring storage. *International journal of current microbiology and applied sciences*. 7(12): 3145-3153.
- Ravindra Babu, M, R.V.S.K. Reddy, Ravinder Reddy, K, Snehalatha Rani, A and Saidaiah, P. 2018. Genetic improvement for yield, quality and leaf curl virus resistance in tomato (*Solanum lycopersicum* L.). *Journal of Pharmacognosy and Phytochemistry*. SP1: 1048-55.
- Ravindra Babu, M, Reddy, R.V.S.K, Ravinder Reddy, K, Saidaiah, P. and Snehalatha Rani, A. 2018. Studies on genetic diversity in tomato (*Solanum lycopersicum* L.). *Journal of Pharmacognosy and Phytochemistry*. SP1: 13-17.
- Ramanandam, G, Padma, E, Kalpana, M, Ravindra Kumar, K, Rao, N.B.V.C. and Maheswarappa, H.P. 2018. Evaluation of Promising Hybrids and Varieties of Coconut in East Coast Region of Andhra Pradesh. *International Journal of Pure and Applied Bioscience*. 6(6): 207-211.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

- Naga Lakshmi, T., Gopal, K. and Sarada, G. 2018 “Management of sweet orange (*Citrus sinensis* (L.) Osbeck) scab caused by *Elsinoefawcettii*” *International Journal of Current Research in Life Sciences*, 7, (08), 2627-2630.
- Sarada, G., Nagalakshmi, T., Gopal, K. and Yuvaraj, K.M. 2018 Citrus rust mite (*Phyllocoptuta oleivora* Ashmead) A Review. *Journal of Entomology and Zoology Studies*. 6 (6): 151-158.
- C Madhumathi, V Bhargav, D Srinivasa Reddy, D Sreedhar and T Naga Lakshmi. “Evaluation of tuberose genotypes for vegetative, flowering and yield traits.” 2018. *International Journal of Chemical Studies*; 6(6): 88-90.
- Naga Lakshmi, T., Gopal, K. and Sarada, G. 2018 “Management of sweet orange (*Citrus sinensis* (L.) Osbeck) scab caused by *Elsinoefawcettii*” *International Journal of Current Research in Life Sciences*, 7, (08), 2627-2630.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- V. Sivakumar, V.A. Celine and V.K. Girija. 2018. Evaluation of yard long bean (*Vigna unguiculata* subsp. *sesquipedalis*) genotypes for collar rot and web blight *Int. J. Curr. Microbiol. App. Sci.* 7(7): 4238-4245.
- V. Sivakumar, K. Uma Jyothi, C. Venkataramana, R. Rajyalakshmi, M. Paratpara Rao and K. Umakrishna. 2018. Stability analysis of brinjal (*Solanum melongena*) hybrids and parents for yield and yield. *Multilogic in Science*. Spl. Issue (A). 35-39



- Vamshikrishna, S., Sivakumar, V., Umajyothi, K., Dorajeerao, A.V.D. and Umakrishna, K. 2019. Evaluation of turmeric (*Curcuma longa* L.) genotypes for yield and quality characters under high altitude and tribal zone of Andhra Pradesh. *International Journal of Chemical Studies*. 7(1): 1480-1483.
- Vamshikrishna, S., Sivakumar, V., Umajyothi, K., Dorajeerao, A.V.D. and Umakrishna, K. 2019. Genetic variability, heritability and genetic advance as per cent mean in turmeric (*Curcuma longa* L.) genotypes. *Journal of Pharmacognosy and Phytochemistry*. 8(1): 1799-1801.
- Vamshikrishna, S., Sivakumar, V., Umajyothi, K., Dorajeerao, A.V.D. and Umakrishna, K. 2019. Performance of Turmeric (*Curcuma longa* L.) Genotypes for Growth and Yield under High Altitude and Tribal Zone of Andhra Pradesh. *Int.J.Curr.Microbiol.App.Sci*. 8(2): 156-162.

HORTICULTURAL RESEARCH STATION, MAHANANDI

- M. Tagore Naik, D. Srihari, A.V.D.Dorajeerao, K. Sasikala, K. Umakrishna and D.R.S.SalomiSuneetha (2018). Fresh and dry weight of seed guar cultivars influenced by spacing and nutrition under Mahanandi conditions. *Int. J. Pure App. Biosci*. 6 (2): 504-510.
- M. Tagore Naik, D. Srihari, A.V.D.Dorajeerao, K. Sasikala, K. Umakrishna and D.R.S.SalomiSuneetha (2018). Effect of spacing and nutrition on seed characters of guar varieties. (Manuscript No: IJPAB-2017-5918) *Int. J. Pure App. Biosci*. 6 (2): 599-604
- M. Tagore Naik, D. Srihari, A.V.D.Dorajeerao, K. Sasikala, K. Umakrishna and D.R.S.SalomiSuneetha (2018). Yield and biochemical quality in relation to spacing and nutrition interactions in seed guar varieties. *Plant Archives* Vol. 18 No. 1, pp. 199-206.
- M. Tagore Naik, D. Srihari, A.V.D.Dorajeerao, K. Sasikala, K. Umakrishna and D.R.S.SalomiSuneetha (2018). Influence of spacing and nutrition on pod characters in promising varieties of cluster bean under Mahanandi conditions, *Plant Archives* Vol. 18 No. 1, 2018 pp. 375-381

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

- **M. Janaki**, J. Dilip Babu, L. Naram Naidu, C. Venkata Ramana, K. Koteswara Rao and K. Uma Krishna. 2018. Combining Ability Analysis for Biochemical Traits in Chilli (*Capsicum annum* L.). *Bulletin of Environment, Pharmacology and Life Sciences*, 7 (9): 84-90.
- **M. Janaki**, C. Venkata Ramana, L. Naram Naidu, J. Dilip Babu, K. Koteswara Rao and K. Uma Krishna. 2018. Character association and path co-efficient analysis studies on yield and yield attributing characters in chilli (*Capsicum annum* L.). *Electronic Journal of Plant Breeding*, 9 (2): 558-563.
- **M. Janaki**, J. Dilip Babu, L. Naram Naidu, C. Venkata Ramana, K. Koteswara Rao and K. Uma Krishna. 2018. Estimation of heterosis for earliness, yield and yield



attributing traits in chilli (*Capsicum annum* L.). *Electronic Journal of Plant Breeding*, 9 (2): 543-550.

- **M. Janaki**, L. Naram Naidu, C. Venkata Ramana, J. Dilip Babu, K. Koteswara Rao and K. Uma Krishna. 2018. Correlation and path analysis studies among biochemical traits and yield in chilli (*Capsicum annum* L.) genotypes. *Electronic Journal of Plant Breeding*, 9(4): 1563-1569.

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

- P.C. Vengaiah, G.N. Murthy and H.P. Maheswarappa 2018. Studies on suitability of existing climbing devices for palmyrah palm (*Borassus flabellifer* L.). *Journal of Plantation Crops*, 2018, 46(2): 147-150
- Usha KK Umajyothi K Reddy RVSK **Prasad KR**Vizi CV and Sujatha RV 2018 Effect of Intercropping and INM practices on growth and yield of chilli (*Capsicum annum* L.). *Inter.Journal of current microbiology and applied sciences* Vol:7(11),pp:3325-3336

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Babu Rao B, Swami D V, Ashok P, Kalyana Babu B, Ramajayam D and Sasikala K, Genetic diversity studies based on principal component analysis for yield attributes in Cassava genotypes, *Int.J.Curr.Microbiol.App.Sci* (2018) 7(12): 1424-1430
- Lokeswari S, Ashok P, Reddy R V S K and Sasikala K, Studies on combining ability and gene action for yield and yield contributing characters in okra (*Abelmoschus esculentus* (L.) Moench) *Journal of Pharmacognosy and Phytochemistry*, 2018, 7(6):2013-2016.
- Tanuja Priya B, Rama Devi P and Sunitha P. 2018. Effect of spacing and FYM on growth and yield of sweet flag (*Acorus calamus* L.): *Journal of Pharmacognosy and Phytochemistry* SP3. 354-357. "National conference on "Conservation, Cultivation and Utilization of medicinal and Aromatic plants". College of Horticulture, Mudigere, Karnataka, 2018.
- Divya Vani V, Vinaya Kumar Reddy P, Sudha Vani V, Rama Devi P and SalomiSuneetha. 2018. Effect of growing media and biofertilizers on seed germination and Growth characters of custard apple. *Progressive Research – An International Journal*. Volume 13 (4): 343-348.
- M.Ravindra Babu, R.V.S.K.Reddy, K.Ravinder Reddy, P.Saidaiah and A.Snehalatha Rani, 2018. Studies on genetic diversity in tomato (*Solanum lycopersicum* L.), *Journal of Pharmacognosy and Phytochemistry*, Vol.7 Issue:1S PP: 13-17
- M.Ravindra Babu, R.V.S.K.Reddy, K.Ravinder Reddy, A.Snehalatha Rani and P.Saidaiah, 2018, Genetic improvement for yield and leaf curl virus resistance in tomato (*Solanum lycopersicum* L.), *Journal of Pharmacognosy and Phytochemistry*, Vol.7 Issue:1S PP: 1048-1055
- Ramesh Babu Boggala, Kulbir Singh, Salesh K. Jindal, Sukhjit Kaur Jawandha, KairamNarsaiah and MS Alam (2018). Storage behaviour of modified atmospheric



- packed tomato (*Solanum lycopersicum* L.) treated with aqueous 1-methylcyclopropene. *Plant Archives* 18(2): 1809-1813.
- Chnadrsekhar V, Ramesh Babu and Rajasekhar M. (2018). Evaluation and genetic variability studies in germplasm of jackfruit available in certain districts of Andhra Pradesh. *Plant Archives* 18(2): 2047-2052.
 - V Sravani, P Ashok, K Sasikala and B.Ramesh babu. (2018). Induction of parthenecarpy through growth regulators in watermelon (*Citrullus lanatus* Thunb.). *International Journal of Chemical Studies* 6(6): 182-184.
 - Ramesh babu B, Kulbir Singh and salesh K Jindal (2018). Influence of type and thickness of packaging film on quality attributes of tomato (*Solanum lycopersicum* L.) treated with 1-methylcyclopropene during cold storage. *Vegetable Science* 45(1): 50-54
 - V Sravani, P Ashok, B.Ramesh Babu and K Sasikala (2018). Induction of parthenocarpy through intergeneric pollen and growth regulators in horticultural crops: A Review. *International Journal of Chemical Studies*. 6 (6): 2438-2441.
 - Bhanu prakash G.C, Ramesh Babu B, Mamatha K, Snehalatha Rani A and Umajyothi K (2019). Genetic divergence studies in colocassia (*Colocasia esculenta* L. Schott) germplasm. *International journal of chemical studies* 7 (1): 998-1002.

MANGO RESEARCH STATION, NUZVID

- R.Rajyalakshmi* and Sravanthi Guntupalli,, ‘Studies on Effect of Pre harvest Treatment for Extending the Post – Harvest Life of Mango cv.Kesar’ *International Journal of Current Microbiology and Applied Sciences* ISSN: 2319 – 7706 Volume 7 Number 06 (2018)
- Sivakumar,V¹.,Uma Jyothi, K¹., VenkataRamana, C².,Rajyalakshmi, R³., ParatparaRao, M¹. And Uma Krishna,K¹ 2018. ‘**Stability analysis of brinjal (*Solanum melongena*) Hybrids and parents for yield and yield components**’ An International Refereed, Peer Reviewed & Indexed Quarterly Journal in science, Agriculture & Engineering VIII(Special issue (A)) : 35 to 39
- R.Rajya Lakshmi, and G.Sravanthi – 2018 ‘**Studies on Effect of Pre Harvest Treatment for Extending the Post – Harvest Life of Mangicv.Kesar**’ *International journal of current microbiology and applied sciences* 7 (06) P: 1527 to 1532
- Rajya Lakshmi .R, NaramNaidu.L, Vijayapadma.S.S, Sravanthi.G – 2018 ‘**Studies on molecular divergence in egg plant (*Solanum melongena* L)**’ using SSR markers *Agriculture update vol -12 /1753 -1761*
- Sravanthi.G, Kalyanasundaram.M, and Rajya Lakshmi .R – 2018 ‘‘**Screening the populations of *Malladaboninensis* for cross resistance to newer molecules of insecticides**’’ *Agriculture update vol -12 /1775 -1781*
- G.Sravanthi, M.Kalyanasundaram, and R.Rajya Lakshmi, – 2018 ‘‘**Diversity and Abundance of Chrysopids in Different Ecosystems**’’*International journal of current microbiology and applied sciences* 7 (06) P: 790 to 799

POST HARVEST TECHNOLOGY RESEARCH STATION, V.R.GUDEM

- S.Sujatha, V.Suchitra, D.V.Swami, P.Subbaramamma, K.Uma Krishna and L.Saravanan (2018). Influence of mulching materials on fruit quality of strawberry



- (*Fragaria ananassa*Duch.) cv. CAMAROSA grown under shade net conditions of coastal Andhra Pradesh. Published on International Journal of Agricultural Sciences.
- S.Sujatha, V.Suchitra, **D.V.Swami**, P.Subbaramamma, K.Uma Krishna and L.Saravanan (2018). Influence of mulching materials on growth and yield of strawberry (*Fragaria ananassa*Duch.) cv. CAMAROSA grown under shade net conditions of coastal Andhra Pradesh. Published on International Journal of Agricultural Sciences.
 - Pranuthi, P., T. Suseela, **D.V. Swami**, D.R. SalomiSuneetha and Sudha Vani, V (2018). Effect of Different Packing and Storage Conditions on Biochemical Parameters in Extending the Vase Life of Cut Carnation cv. Kiro. Published on International Journal of Current Microbiology and Applied Sciences.
 - Pranuthi, P., T. Suseela, **D.V. Swami**, D.R. SalomiSuneetha and Sudha Vani, V (2018). Effect of Packing and Storage Conditions on Physical and Physiological Parameters in Extending the Vase Life of Cut Carnation cv. Kiro. Published on International Journal of Current Microbiology and Applied Sciences.
 - Pranuthi, P., T. Suseela, **D.V. Swami**, D.R. SalomiSuneetha and Sudha Vani, V (2018). Effect of Holding Solutions on Biochemical and Microbial Observations in Extending the Vase Life of Cut Carnation cv. Kiro. Published on International Journal of Current Microbiology and Applied Sciences.
 - Pranuthi, P., T. Suseela, **D.V. Swami**, D.R. SalomiSuneetha and Sudha Vani, V (2018). Effect of Holding Solutions on the Water Relations in Vase Life of Cut Carnation cv. Kiro.. Published on International Journal of Current Microbiology and Applied Sciences.
 - B. Babu Rao, **D.V. Swami**, P. Ashok, B. Kalyana Babu, D. Ramajayam and K. Sasikala. Estimation of Genetic Variability and Heritability for Yield and Its Related Components in Cassava (*Manihot esculenta* Crantz) Genotypes (2018). Published on International Journal of Current Microbiology and Applied Sciences.

C.ABSTRACTS

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Sunitha P, Sujatha A, Rama Devi P and Rajasekhar M. 2019. Lepidopteran pest complex on sapota. Innovations for Agricultural Transformation, XIV Agricultural Science Congress from 20th to 23rd February, 2019, at National Academy of Agricultural Sciences, New Delhi.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Mamatha, K, Naidu, M.M, Naga Lakshmi, R, Bhagavan, B.V.K. and Ravindra Kumar, K. 2019. Studies on the effect of different biofertilizers and organic manures on growth and yield of commercial cultivars of banana under Godavari alluvial soils of Andhra Pradesh. *In 5th National Asian PGPR Conference for Sustainable and Organic Agriculture Souvenir*.pp: 178.





- Ravindra Kumar, K, Singh, K.P, Bhatia, R. and Raju, D.V.S, 2019. Production of doubled haploids (DH) through colchicine treatment of anther and ovule culture derived plants of marigold (*Tagetes* spp.). In *National conference on Ornamental Horticulture to Uplift Rural Economy, Book of Abstracts: 2*.
- Naga Lakshmi, R, Lakshminarayana Reddy, M, Bhagavan, B.V.K. and Dorajee Rao, A.V.D. 2019. Impact of flower inducing chemicals on flowering, floral attributes and spike yield of tube rose cv. Prajwal. In *National conference on Ornamental Horticulture to Uplift Rural Economy, Book of Abstracts: 73*.
- Naga Lakshmi, R, Murthy, G.N, Padma, E, Bhargavan, B.V.K, Mamatha, K, Naidu, M.M. and James George. 2019. Profitability of organic farming in elephant foot yam cv Gajendra. In *5th National Asian PGPR Conference for Sustainable and Organic Agriculture Souvenir*. pp: 70.
- Naga Lakshmi, R, Murthy, G.N, Padma, E, Mamatha, K, Bhargavan, B.V.K, Naidu, M.M. and James George. 2019. Integrated nutrient management for higher productivity and quality in elephant foot yam cv. Gajendra under alluvial soils of Andhra Pradesh. In *5th National Asian PGPR Conference for Sustainable and Organic Agriculture Souvenir*. pp: 90-91.
- Mamatha, K, Naidu, M.M, Nagalakshmi, R, Bhagavan, B.V.K. and Ravindra Kumar, K. 2019. Studies on the effect of different biofertilizers and organic manures on growth and yield of commercial cultivars of banana under Godavari alluvial soils of Andhra Pradesh. In *5th National Asian PGPR Conference for Sustainable and Organic Agriculture Souvenir*. pp: 178.
- Mamatha, K, Nagalakshmi R, Ravindra Kumar K, Bhagavan, B.V.K. and Kishore Kumar, Ch.S 2019. Effect of different weed management practices on growth and tuber yield in elephant foot yam (*Amorphophaluspeoniifolius*). In National Symposium on “Horticulture in the Vanguard of Climate Change and Urban Environment” at, Annamalai University, Annamalai Nagar, Tamil Nadu from 7th to 8th February, 2019.
- Mamatha, K, Naidu, M.M, Nagalakshmi, R. and Bhagavan, B.V.K. 2019. Evaluation of different culinary cultivars of banana under Godavari alluviums of Andhra Pradesh. In National Symposium on “Horticulture in the Vanguard of Climate Change and Urban Environment” at, Annamalai University Annamalai Nagar, Tamil Nadu from 7th to 8th February, 2019.
- Naga Lakshmi, R, Mamatha, K, Bhagavan, B.V.K, Ravindra Kumar, K, Kishore Kumar, Ch.S. 2019. Diversity of *Musa* sp. in Andhra Pradesh. In National Symposium on “Horticulture in the Vanguard of Climate Change and Urban Environment” at, Annamalai University Annamalai Nagar, Tamil Nadu. from 7th to 8th February, 2019.
- Naga Lakshmi, R, Mamatha, K, Bhagavan, B.V.K. and Naidu, M.M. 2019. *In vitro* multiplication of banana cultivars using *meta*-topolin. In National Symposium on “Horticulture in the Vanguard of Climate Change and Urban Environment” at, Annamalai University Annamalai Nagar, Tamil Nadu from 7th to 8th February, 2019.





- Mamatha, K, Naga Lakshmi, R, Bhagavan, B.V.K, Ravindra Kumar, K, Ramanandam, G, Snehalatha Rani, A. and Kishore Kumar, Ch.S. 2019. Molecular genetic diversity analysis of *Amorphophallus paeoniifolius* (dennst.) Germplasm identified by SSR markers. In National conference on “Horticulture for Sustainability and Nutritional Security” held from 19th -20th December, 2019 at KRC College of Horticulture, Arabhavi, UHS, Bagalkot.
- Mamatha, K, Naga Lakshmi, R, Bhagavan, B.V.K, Ravindra Kumar, K, Ramanandam, G, Snehalatha Rani, A. and Kishore Kumar, Ch.S. 2019. Variability in open pollinated seedling progenies of Elephant foot yam *Amorphophallus paeoniifolius* (dennst.). In National conference on “Horticulture for Sustainability and Nutritional Security” held from 19th -20th December, 2019 at KRC College of Horticulture, Arabhavi, UHS, Bagalkot.
- Vimatha, P, Mamatha, K, Umajyothi, K, Sasikala, K. and Deepika, V.S.N. 2019. Effect of organic sources of nutrients on yield and quality of sweet potato (*Ipomoea batatas* L.) hybrid PSP-1 under Godavari alluvial soils. In National conference on “Horticulture for Sustainability and Nutritional Security” held from 19th -20th December, 2019 at KRC College of Horticulture, Arabhavi, UHS, Bagalkot.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Sivakumar, V., K. Uma Jyothi, C. Venkataramana, R. Rajyalakshmi, M. Paratpara Rao and K. Umakrishna. 2018. G x E interaction of brinjal genotypes against fruit borer. *DAE-BRNS Life Sciences Symposium 2018* held at BARC, Mumbai on 26th-28th April, 2018.
- Sivakumar, V., Celine,V.A. and VenkataRamana, C. 2018.Discriminant function method of selection in vegetable cowpea genotypes. *National seminar on vegetables for livelihood and nutritional security under changing climate scenario* held at BCKV, Mohanpur, Kalyani, West Bengal on 6th -7th December, 2018.
- Sivakumar, V., Uma Jyothi, K., Venkataramana, C., Rajyalakshmi, R., Paratparao, M. and Umakrishna, K. 2018. Study on yield potential of brinjal (*Solanum melongena* L.) genotypes under high altitude region of Andhra Pradesh. *National seminar on vegetables for livelihood and nutritional security under changing climate scenario* held at BCKV, Mohanpur, Kalyani, West Bengal on 6th -7th December, 2018.
- Vamshi Krishna, S. and Sivakumar, V. 2018.Shifting to sustainable vegetable production system. *National seminar on vegetables for livelihood and nutritional security under changing climate scenario* held at BCKV, Mohanpur, Kalyani, West Bengal on 6th -7th December, 2018.
- Sivakumar, V. 2019. Scope of strawberry cultivation in high altitude and tribal area of Visakhapatnam. *8th Indian Horticultural Congress* held at IGKV, Raipur, Chattishgarh on 17th - 21st January 2019.
- Sivakumar, V. 2019. Performance of black pepper genotypes under high altitude tribal area of Andhra Pradesh. *8th Indian Horticultural Congress* held at IGKV, Raipur, Chattishgarh on 17th - 21st January 2019.





- Sivakumar, V. and Ravindra Kumar, K. 2019. Pro Tray Technology in Turmeric: A Rapid Multiplication Technique. National Conference on “*Resilience And Resource Management Including ICT For Sustainable Agriculture & Biotechnology*” held at J. P. Sabhagaar, Dr. Bhim Rao Ambedkar University, Agra, Uttar Pradesh, India on February 23-24th 2019.
- Sivakumar, V. 2019. Effect of application of micronutrients on growth and yield of ginger. *National Seminar on “Use of Agro-chemicals for a Sustainable Agriculture and Environment* held at BCKV, Mohanpur, Kalyani, West Bengal on 27th March 2019.
- Sivakumar, V. and Vamshi Krishna, S. 2019. Importance of development of value chain in spice crops under high altitude and tribal area of Visakhapatnam. *National Seminar on “Use of Agro-chemicals for a Sustainable Agriculture and Environment* held at BCKV, Mohanpur, Kalyani, West Bengal on 27th March 2019.

HORTICULTURE POLYTECHNIC, MADAKASIRA

- “ Estimation of Heterosis in Tomato (*Solanum lycopersicum* L.) for Yield attributes and Yield” PP-PPMB-097
- “ Combining ability studies in Tomato (*Solanum lycopersicum* L.) for Yield attributes, Yield and Quality” PP-PAG-0513.

KRISHI VIGYAN KENDRA, PERIYAVARAM

- L.Ranjith Kumar, B.V.Patil, L.Rajesh Chowdary. 2018. Baseline susceptibility of South Indian populations of Brinjal shoot and root borer, *Leucinodes orbonalis* (Guenee) to Cry1Ac insecticidal protein. Indian Science Congress Association.
- L.Ranjith Kumar, R.V.S.K.Reddy. 2018. Dimensions of insecticide usage pattern for the management of Brinjal shoot and root borer, *Leucinodes orbonalis* (Guenee) in Nellore district of Andhra Pradesh. Indian Science Congress Association.

D.TECHNICAL BULLETINS

CITRUS RESEARCH STATION, TIRUPATI

- Rajesh Naik, S.M., Viswanath, M., Lakshmi Naga Nandini, M., Venkata Ramana, K.T. and Mukunda Lakshmi, L., 2019, Plant growth regulator application in fruit crops. Sarvesh Kumar Lodhi, 2019, *Advances in Horticulture*(PP139), Akinik Publications, New Delhi

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Padma, E.,Ramanandam, G., Chalapathi Rao, N.B.V. and Neeraja, B. 2018. Scientific management practices in cocoa cultivation.

HORTICULTURAL RESEARCH STATION, KOVVUR



- “Horticulture Nursery men, Be Aware of Nematodes”, A Sneha latha rani, B.V.K.Bhagavan, K. Ravindra Kumar, K.Mamatha, R Naga Lakshmi and J.DilipBabu.
- “Scientific cultivation of Banana” R. Naga Lakshmi, B.V.K. Bhagavan, K.Mamatha, K. Ravindra Kumar, Ch.S. Kishore Kumar, J.DilipBabu, Prakash Patil. V.N.S.Deepika and M.L.Nandini.
- “Cultivation practices of Elephant foot yam, Taro and greater yam in Andhra Pradesh” K. Mamatha, B.V.K.Bhagavan, R.Naga Lakshmi, K. Ravindra Kumar and Ch.S. Kishore Kumar, J. Dilip Babu and James George.
- “Varieties released by Horticultural Research Station, Kovvur” B.V.K. Bhagavan, R. Naga Lakshmi, K. Mamatha, K. Ravindra Kumar, Ch.S. Kishore Kumar and J.Dilip Babu.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Rama Devi P, Aparna D and Saranya V.S.L. May, 2018. Achievements of AICRP on MAP & Betelvine
- Rama Devi P, Aparna D and Saranya V.S.L. May, 2018. Scenario of medicinal, aromatic plants and betelvine in Andhra Pradesh
- Rama Devi P, Aparna D and Saranya V.S.L. May, 2018. Scope for promotion of medicinal and aromatic plants in Andhra Pradesh
- Rama Devi P, Sunitha P, Sireesha K, Thanuja Priya B and Janaki Ratnam N May, 2018. Compendium on Pests and Diseases of Medicinal and Aromatic Plants in Andhra Pradesh

MANGO RESEARCH STATION, NUZVID

- R. Rajyalakshmi, G. Sravanthi and B.K.M.Laxmi technical bulletin on ‘Mamidisamagrayajamanyapaddatulu’ 2018

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

S.No	Item	Year	Authors	Title	Publisher
1	Books		Dr. K. Venkata Subbaiah, Sri. G. Shali raju, Dr. E. Karunasree, A.Devivaraprasad Reddy, Dr. T. Vijaya nirmala and Dr. V. Deepthi.	Melainayajamany apaddathulathoja masagu.	Dr.YSR. Horticultural university. Telugu book. 1/2018-19.





2	Book chapters / manuals				
3	Training manuals	2018	Dr. T. Viaya Nirmala, Dr. A.Devivaraprasad Reddy, Dr. E.Karunasree, Dr. K. Venkata Subbaiah, G. Shaliraju, Dr.V. Deepthi and B.Rupadevi..	Chinnatharahapar ishramagakollape mpakam.	KVK Training manual 1, December.
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	2018.	Dr. T. Vijaya Nirmala, Dr. A.Devivaraparasad Reddy, Dr. E. Karunasree, Dr. K. Venkata Subbaiah, Sri G.Shaliraju, Dr. V.Deepthi and Dr. R.V.S.K. Reddy.	Kodipillalapempakam lo patinchavalasina melainayajamany apaddathulu.	Agriclinic telugu magazine. April issue Pg no:16-17.
		2018.	Dr. T. Vijaya Nirmala, Dr. A.Devivaraparasad Reddy, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. K. Venkata Subbaiah, Sri G.Shaliraju and Dr. V.Deepthi	Napier pasugrasalaloraru – Super napier.	Agriclinic telugu magazine. August issue Pgno:62.
		2018.	T. Vijaya Nirmala, A.Devivaraparasad Reddy, E. Karunasree, R.V.S.K.Reddy, K. Venkata Subbaiah, G.Shaliraju, V.Deepthi and R.V.S.K. Reddy.	Padipashuvulamet halo bypass fat prayojanalulu.	Agriclinic telugu magazine. October issue, 6 (11) Pg no:8.





		2018	K. Venkat Subbaiah, S.L.Jagadeesh, Manjula Rakshi , E. Karunasree, G.Shaliraju, T. Vijaya Nirmala, A.Devivaraparas ad Reddy,	“Value added studies in banana as a commercial enterprise” during	1st International Extension Congress on New Horizons of Extension: Challenges and Opportunities which was held from February 1-3, 2018 at ICAR – Central nstitute for Women in Agriculture, Bhubaneswar.
5	Technical bulletin/ Folders	2018	Dr. T. Viaya Nirmala , Dr. E.Karunasree, Dr. A.Devivaraprasa d Reddy, Dr. K. Venkata Subbaiah, G. Shali raju and Dr.V. Deepthi.	Melujathiperatiko llapempakam.	KVK Technical Bulletin;2018.
		2018	Dr. RVSK Reddy, Dr. E. Karunasree, Dr. K. Venkata Subbaiah, Sri. G. Shali raju, Dr. V. Deepthi, Dr. A.Devivaraprasa d Reddy and Dr. T. Vijaya nirmala.	Mokkalarakalapar irakshnamariyuryt huhakkulapradhik arasamstha.	Dr. YSR. Horticultural university. tech. bulletin.3/2018-19.
6	Reports				
7	Others (CDS)	2018.	.T.Vijaya Nirmala, E.Karunasree, A.Devivaraprasa d Reddy, K. Venkata Subbaiah, K. G.Shaliraju and V.Deepthi.	1Assel jaathiperatikollap empakamdharag irijanakutumbalaj eevanopadhivrud di.	KVK, VR gudem
		2018	Dr. T. Vijaya	Kodipillalapempa	Agriclinictelugu





			Nirmala, Dr. A.Devivaraparas ad Reddy, Dr. E. Karunasree, Dr. K. Venkata Subbaiah , Sri G.Shaliraju, Dr. V.Deepthi and Dr. R.V.S.K. Reddy.	kam lo patinchavalasina melainayajamany apaddathulu.	magazine. April issue Pg no:16-17.
		2018	Dr. K. Venkata Subbaiah , Sri G.Shaliraju, Dr. T. Vijaya Nirmala, Dr. V.Deepthi and Dr. A.Devivaraparas ad Reddy, Dr. R.V.S.K. Reddy and Dr. E. Karunasree,	Melainayajamany apaddathullodond asaagu.	Agriclinictelugu magazine. April issue Pg no:21-24.
		2018	Dr. K. Venkata Subbaiah , Sri G.Shaliraju, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. V.Deepthi, Dr. T. Vijaya Nirmala and Dr. A.Devivaraparas ad Reddy.	Surakshithamynat hakkuvakharchut hokoodinaparigna namthomamidipandlanumagabettevidhanam.	Agriclinictelugu magazine. May issue Pg no:09-10.
		2018	Sri G.Shaliraju, Dr. K. Venkata Subbaiah , Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. V.Deepthi, Dr. T. Vijaya Nirmala and Dr. A.Devivaraparas ad Reddy.	Vanga lo sasyarakshana. May issue Pg no:29-30.	Agriclinictelugu magazine. May issue Pg no:29-30.
		2018	Dr. K. Venkata Subbaiah , Sri G.Shaliraju, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr.	Melainayajamany apaddathulalthoA nasasagu.	Agriclinictelugu magazine. June issue Pg no:15-17.





			T. Vijaya Nirmala, Dr. A.Devivaraparas ad Reddy and Dr. V.Deepthi,		
		2018	Dr. K. Venkata Subbaiah , Sri G.Shaliraju, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. T. Vijaya Nirmala, Dr. V.Deepthi and Dr. A.Devivaraparas ad Reddy.	Neredupandlatho wine thayarividhanam.	Agriclinictelugu magazine. July issue Pg no:05-06.
		2018	Dr. T. Vijaya Nirmala, Dr. A.Devivaraparas ad Reddy, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. K. Venkata Subbaiah , Sri G.Shaliraju and Dr. V.Deepthi	Napier pasugrasalalaraju – Super napier.	Agriclinictelugu magazine. August issue Pgno:62.
		2018	Sri G.Shaliraju, Dr. K. Venkata Subbaiah , Dr. V.Deepthi, Dr. R.V.S.K. Reddy, Dr. E. Karunasree, Dr. T. Vijaya Nirmala and Dr. A.Devivaraparas ad Reddy.	Pesara, minumulosasyara kshnapaddatulu.	Agriclinictelugu magazine, September issue Pg no: 10-13.
	TV programmes	Telecasted between 06.00 PM to 07.00 PM on 04.07.2018	T.Vijaya Nirmala	Topic on “Vermicompost thayarimariyupra mukhyatha”	PasidiPantalu program of DD Sapthagiri channel.
		04.07.2018	T.Vijaya Nirmala	Explained about Annual and Perennial fodder management t	Maha TV channel.





		telecasted between 06.00 PM to 07.00 PM on 06.07.2018	T.Vijaya Nirmala	Topic on “Peratikollapempakam”	PasidiPantalu program of DD Sapthagiri channel.
		telecasted between 06.00 PM to 07.00 PM on 03.10.2018	T.Vijaya Nirmala	Topic on “Tholakarilojeeva layajamanyam”	PasidiPantalu program of DD Sapthagiri channel.
		telecasted between 06.00 PM to 07.00 PM on 02.11.2018	T.Vijaya Nirmala	Topic on “Azolla importance and its cultivation “	PasidiPantalu program of DD Sapthagiri channel.
		04.07.2018	K. Venkata Subbaiah	Hybrid vegetable seedlings in pro trays	PasidiPantalu program of DD Sapthagiri channel.
		29-9-2018	K. Venkata Subbaiah	“Cashew nursery raising and its management in coastal area of Andhra Pradesh”	Annadatha program of ETv channel.
		9-10-2018	K. Venkata Subbaiah	Cashew nursery management with respect to plant protection aspects’	PasidiPantalu program of DD Sapthagiri channel.
		04.07.2018	K. Venkata Subbaiah	“Different horticultural activities under taken by KVK for the welfare of farming community.	Maha TV channel
		4-12-2018,	K. Venkata Subbaiah	“multiplication of Guava plants via Air layering method.	Annadatha program of ETV channel

KRISHI VIGYAN KENDRA, PERIYAVARAM

1	Technical bulletin/ Folders	2018	Dr.P.Manjari, Dr.M.Kavitha,	Kollapempakam lo	ATMA, Nellore
---	-----------------------------	------	--------------------------------	------------------	---------------





			Dr.L.Ranjith Kumar, Ch.Sindhu, D.Vinod Kumar, S.M.Sailaja	melainayamany apadhatulu	
2		2018	S.M.Sailaja, Dr.M.Kavita, D.Rameez Basha, Dr.P.Manjari, Dr.L.Ranjith Kumar, T.Vikaskumar, Ch.Sindhu, R.V.S.K.Reddy	Chemasagu lo melainayamany apadhatulu	Dr.YSRHU
3		2019	Ch.Sindhu, Dr.M.Kavita, Dr.P.Manjari, Dr.L.Ranjith Kumar, D.Vinod Naik, S.M.Sailaja, R.V.S.K.Reddy	Chiru dhanyalaviluvaaa dharitautpattulu	ATMA, Nellore

E.LEAFLETS/PAMPHLETS

CITRUS RESEARCH STATION, TIRUPATI

- Released one folder on “BathailoSamagraEruvulaYajamanyam” in ZREAC18-19

HORTICULTURAL RESEARCH STATION, KOVVUR

- “Management of nematodes in Horticultural crops”Ch.S. Kishore Kumar, B.V.K. Bhagavan, K. Mamatha, R.Naga Lakshmi, K. Ravindra Kumar, J.Dilip Babu, V.N.S.Deepika and M.L.N. Nandini.
- “Management practices for turmeric” K. Mamatha, B.V.K. Bhagavan,K. Ravindra Kumar, R.Naga Lakshmi, Ch.S. Kishore Kumar and J.Dilip Babu.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

- Folder on “**Jaama lo Saagu**” published by Nagaraju, R, ,Sreedhar, D. Naga Lakshmi, T. and Sharatkumar Reddy, Y. 2018
- Folder on “**JaamaloSaagu – SasyaRakshna**” published by Nagaraju, R., Naga Lakshmi, T., Sreedhar, D.andSharatkumar Reddy, Y.2018
- Folder on “**MamidiloYeruvula - Yajamanyam**” published by Nagaraju, R, ,Sreedhar, D.. Sharatkumar Reddy, Y.and **Naga Lakshmi, T 2018**
- Folder on “**Poothapindedasa lo Mamidiyajamanyam**” published by Nagaraju, R, ,Naga Lakshmi, T., .Sreedhar, D.and and Sharatkumar Reddy, Y.2018

HORTICULTURAL RESEARCH STATION, CHINTAPALLI



a. Package of practices of Ginger (Telugu)- **Booklet****POST HARVEST TECHNOLOGY RESEARCH STATION, V.R.GUDEM**

- Chinnataraha yantra samagrito tomato ketchup mariumisramapandla jam tayari (2018)
- Technical bulletin on preparation of mixed fruit jam and tomato ketchup (2018)

KRISHI VIGYAN KENDRA, PERIYAVARAM

1	Others (Pamphlet)	2018	Dr.P.Manjari, Dr.M.Kavitha, Dr.L.Ranjith Kumar, S.M.Sailaja, Ch.Sindhu, D.Rameez Basha, T.Vikaskumar, R.V.S.K.Reddy	Super napierpashugrasa mu	Dr.YSRHU
---	----------------------	------	---	---------------------------------	----------

1	Pocket cards	2019	S.M.Sailaja, Dr.M.Kavita, Dr.L.Ranjith Kumar, Dr.P.Manjari, Ch.Sindhu, D.Vinod Naik, R.V.S.K.Reddy	Minumupantallo melainayajamany apadhatulu	Dr.YSRHU
---	--------------	------	---	---	----------

F.POPULAR ARTICLES**COLLEGE OF HORTICULTURE, ANANTHARAJUPETA**

Y. Sireesha Diagnosis of Plant Viral Diseases, Agrobios Newsletter 4 (17) Page 94.

COLLEGE OF HORTICULTURE, PARVATHIPURAM

S. No.	Name	Title	News Paper	Date
1.	Dr. B.Prasanna Kumar	BhavitakubharosaUdyana Vidya	ANDHRA JYOTHI	07-01-2018
2.	Dr. B.Prasanna Kumar	Eepolambadichebuthondidigubadi	EENADU	23-07-2018

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

S. No.	Title of the papers	Authors	Journal
1.	MamidiThotalloKothaAnantharamCheya valasinaPanulu	Dr.P.Vijaya Lakshmi	Rythulokam, 2018-July Pp 20-21





2.	PanasathoPaluRakalaVantalu	Ch.Shanmukhi P.Vijaya Lakshmi S.Surekha P. Anji Babu	Agri clinics, June 2018 Pp 58-60
3.	Tomato Saagulo Pinworm Bedadha	Dr.P.Vijaya Lakshmi	Paadipantalu – Sakshi 29.06.2018 pp 14
4.	Pin warm kutata..Niganigala tomato	Dr.P.Vijaya Lakshmi	Paadipantalu. Sakshi 12.09.2018pp 14
5.	Naalugunelaluathayanthakeelakam,	Dr.P.Vijaya Lakshmi	Paadipantalu. Sakshi 9.10.2018pp 10
6.	Ponchiunnarogose	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 12.11.2018 pp 14
7.	Tomato sagulo pin warm bedada	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 29.06..2018 pp 12
8.	UdhyanaPantalloSasyarakshanacharyalue eve	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 12.07.2018 pp 10
9.	Jaamasagu lo kommantlumeelu	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 07.02.2019 pp 12
10.	Naarusaagu...Labalabaagu	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 21.02.2019 pp 10
11.	Vesavilo- tomato labadayakam	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 16.03.2019 pp 14
12.	Vesavilo-sora saagu—labalauouraa	Dr.P.Vijaya Lakshmi	Paadipantalu Sakshi 27.03.2019 pp 10
13.	Fertigation Dwarra –eruvuluaada	Dr.P.Vijaya Lakshmi	RythuLokam March-2019. pp11-12
14.	Kommaantupaddathi lo jaamasaagu	Dr.P.Vijaya Lakshmi	RythuLokam March-2019. Pp19-20
15.	KommaantupaddathiloJaamaSaagu	Dr.P.Vijaya Lakshmi	Praza shakthi.05.03.2019

CITRUS RESEARCH STATION, TIRUPATI

- Mukunda Lakshmi, L., Venkata Ramana, K.T., Sreenivasulu Reddy, D., Rajasekharam. T., 2018, Integrated nutrient Management in Sweet Orange (“BathailoSamagraEruvulaYajamanyam”), Published by Citrus Research Station, Dr. YSRHU, Tirupati

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- KobbariniAasinchu Ganoderma Tegulu – YajamanyaPaddathulu (Ganoderma disease management in coconut) was published by Neeraja, B. Ramanandam, G., Chalapathi Rao, N.B.V. Padma, E. 2018. in Rythunestam. Vol. 13 (9): 59-60 – A monthly magazine in Telugu.
- Neeraja, B. Ramanandam, G., Chalapathi Rao, N.B.V. Padma, E. 2018. Cocoa PantanuAasincheTegullu – Nivarana. Annadata. Vol. 50 (7): 12.

HORTICULTURAL RESEARCH STATION, KOVVUR





- V. Sivakumar, K.Mallikharjuna Rao, K. Ravindra Kumar and S. Vamsi Krishna. 2018. Aadhunikapadhathilo Allam Saagu. Annadata, April issue.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA

- Dr. R. Nagaraju, D. Sreedhar, Dr. Y. Sharth Kumar Reddy and T. Nagalakshmi 'Pandlathotaloyeruvulayajamanyam' published in Annadatha July-2018.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI

- Dr. V. Sivakumar and Dr. K. Ravindra Kumar. 2018. AdhunikaPaddatulalo Allam Saagu. Annadaata, April 2018.
- Dr. V. Sivakumar. 2018. Coffee totalaloippuduemicheyaalante, Andhra Jyothi, April 2020
- Dr. V. Sivakumar. 2018. Naanyatha tone coffee gubhalimpu. Sakhsi, April 2018
- Dr. V. Sivakumar. 2019. UdyanaPantalalo Mulching yokkaPramukyatha, Vyavasaayam, January 2019.

HORTICULTURAL RESEARCH STATION, PEDDAPURAM

- M. Janaki. Popular article on sweet potato production, Annadatha, November, 2018.

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

- Dr.K.Rajendra Prasad, "Jeeva kanchegavakkayaSagu" Vyavasayam, ANGRAU August 2018
- Dr.K.Rajendra Prasad, "Polyhouse lo gerbera pula sagu" Vyavasayam, ANGRAU December 2018
- Vengaiah , P C., 2019, Tati chettukupaivelui, Sakshi daily, 19.02.19.
- Vengaiah , P C., 2019, Tati Satileniruchulu, Andrajyoti daily 09.01.2019.
- Vengaiah , P C., 2018, Tati labhalameti, Andrajyoti daily 02.11.2018.
- Vengaiah , P C., 2018, Tati panduviluvaaadaritautpatulu, Vyavasayam ANGRAU, September, 2018.
- Vengaiah , P C., 2018, Tati bellamtayarilomelukuvalu, Vyavasayam ANGRAU , May, 2018.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Ravindra Babu.M, R.V.S.K.Reddy, P.Ramadevi. Polyhouselopoolukoorageyalasaagulumelakuvalu, Rythunestham, October, 2018
- Ravindra Babu.M, T.Thomson, P.Ramadevi, Rabi KooragayalaSaagu, Agrilclinic, November, 2018
- Ravindra Babu.M, R.V.S.K.Reddy, P.Ramadevi. PutteduAadayanikipuchchapandiddam. December, 2018
- M.Ravindra Babu M, R.V.S.K.Reddy, TheegajaathikooragayalaSaagu, Annadata, February, 2019





- Kiriti A, Ravindra babu M, Ramesh babu B and Ramadevi P. Mamidithotalayajamanyam. Agriclinic, page. 56-58, June, 2018.

MANGO RESEARCH STATION, NUZVID

- Dr.**R.Rajyalakshmi**, Scientist (Hort) & Head 'MamidiAgumathiPramanalu' Annadhatha P. no.24, April -2018
- Dr.**G.Sravanthi**, Scientist (Ento), 'Varshakalam lo mamidithotala lo jagrathalu' Rythulokam , P. no 14, July – 2018
- Dr.**R.Rajyalakshmi**, Scientist (Hort) & Head 'Mamidikothaanantharamsankethikaparignanam' P. no 22, July – 2018
- Dr.**G.Sravanthi**, Scientist (Ento), 'Mamidisagulosamagrasasyarakshana' Rythulokam , P. no 27, July – 2018
- Dr.R.Rajyalakshmi, Scientist (Hort) & Head 'Mamidilonanyamainadigubadikimundugachepattavalasinacheryalu'. Rythulokam'' P.no 20, November -2018

POST HARVEST TECHNOLOGY RESEARCH STATION, V.R.GUDEM

- **D.V. Swami**, B. Baburao and G. Rakesh (2018). **Kutirapariramagamamiditandratayari'**. Published on **Annadata, June, 2018**.

KRISHI VIGYAN KENDRA, PERIYAVARAM

- P.Manjari, L.Ranjith Kumar, Dr.M.Kavitha, N. Srividya Rani. 2018. Osmanabadimeklapempakam: Raithulakusarikottaadayamargam. Agriclinic magazine-July 2018.
- T.Vikas Kumar, M.Kavitha. 2018. Sarikottavarivangadam NLR-3042. Agriclinic magazine-July 2018.
- D.Rameez Basha, S.M.Sailaja, M.Kavita. 2018. Mulching pradhanyata-upayogalu. Agriclinic magazine- July 2018.
- T.Vikas Kumar, M.Kavita, S.M.Sailaja. 2018. Boron deficiency in fruit crops. Simhapuri-July, 2018.
- Ch.Sindu, M.Kavitha. 2018. Thalli paalu—SisuvuArogyanikienthomelu. Agriclinic magazine- August 2018.
- D.Rameez Basha, S.M.Sailaja, M.Kavita. 2018. Mulch and its importance. Agriclinic magazine- August 2018.
- P.Manjari, L.Ranjith Kumar, N. Srividya Rani, Ch.Sindhu, D.Vinod Naik. 2018. Dhanyapujaati, pappujaatipashugrasamrakalu- saaguvidhanam, vaatiposhakaviluvu. Agriclinic magazine- December 2018.
- L.Ranjith Kumar. 2018. Ullilosasyarakshanacharyalu. Agriclinic magazine- December 2018.





- Ch.Sindhu, P.Manjari, D.Vinod Naik. 2019. Meluposhakalamonaga- miracle tree. Agriclinic magazine- January 2018.
- P.Manjari, L.Ranjith Kumar. 2019. Osmanabadi Goat rearing- A profitable enterprise for marginal farmers. Indian Farmers' Digest magazine- Feb-2019.
- P.Manjari, I.Hyder, L.Ranjith Kumar, N. Srividya Rani. 2019. Kolla farm lo patinchavalsinajeevaniyantranacharyalu. Agriclinic magazine- Feb 2018.
- P.Manjari, A.K.Dang. 2019. Implantation induced differential cytokine and neutrophil gene expression patterns as potential peripheral markers of bovine endometrial receptivity. Indian Society for the Study of Reproduction and fertility.
- Ch.Sindhu, M.Kavitha, D.Vinod Naik P.Manjari, L.Ranjith Kumar, S.M.Sailaja. 2019. Minimization of nutrient loss during cooking. Agriclinic magazine- Feb 2018
- S.M.Sailaja, M.Kavitha. 2019. Adhikalabhalakumelainapucchasaagu. Agriclinic magazine- Feb 2018

G.PARTICIPATION OF TEACHRS/SCIENTISTS IN INTERNATIONAL AND NATIONAL CONFERENCES/SYMPOSIUMS/WORKSHOPS & HRD PROGRAMMES

COLLEGE OF HORTICULTURE, PARVATHIPURAM

- R.Poorna Chaitanya, Assistant Professor (Horticulture), attended to Recent Advances in Genetic Exploration and Conservation of Genetic Resources in Ornamental Plants at Kittur Rani Channamma College of Horticulture, Arabhavi, Belgavi from 8th to 28th (21 days), February, 2018.
- Dr. B. Prasanna Kumar, Associate Dean, attended to National Conference on Strategic Approaches for Developing World Class Agricultural Universities at COAE ,Baptla on 19 to 20th March, 2019.

HORTICULTURE POLYTECHNIC, RAMACHANDRAPURAM

- Pathipati VL, Vijaya Lakshmi T, Rajani, Ramana C.V and NaramNaidu.L. 2018. Neem- Effective Phytochemical for chilli flowers Pests in Andhra Pradesh.

Authors (As given in the publications)	Year	Title of Publications	Nature of the Publications	Name of the Journal/Conference/Seminar/Symposia	Vol.no & page No.
	2018		Research Note	National Seminar on Botanical Insect Pest Management. Feb11-14,2018 at Annamalai University, Tamilnadu	Souvenir and Abstract pp: pp:98
Dr. P.Vijaya Lakshmi and Dr. Radha	2018	Bio-diversity of Bees, Conservation	Research Note	Two day State level Seminar on Awareness, Motivation &	Souvenir and Abstract pp: pp:90 & 91





Rani.K Oral Presentation		of wild bees & Suitable harvesting of Honey		Technology Transfer for Development of Beekeeping in Andhra Pradesh. 27-28 October,2018 at KVK, Venkataramannagudem , Dr YSR Horticultural University.AP	
Dr. P.Vijaya Lakshmi Oral Presentation	2018	Pesticide residues in fruits and vegetables	Research Note	One day National Seminar on Current issues and challenges in plant sciences-2018 on 30 th May-2018 by department of Botany, Osmania University, Hyderabad, Telangana.Souvenir cum lead/Abstract Proceedings.	Souvenir and Abstract pp: pp:68
Dr. P.Vijaya Lakshmi	2018	Pesticide usage in Vegetable and fruits cultivation- Boon or Ban	Research Note	4 th Andhra Pradesh Science Congress (APSC-2019) at Yogi Vemana University, Kadapa,Andhra Pradesh from 9-11 .November.2018	Souvenir and Abstract pp: pp:146
Pathipati VL , Vijaya Lakshmi T, Rajani, Ramana C.V and NaramNaidu. L	2018	Bio-ecology and Management of chilli Blossom Midge, <i>AsphondyliaCa psici</i> Barens	Research Note	National Symposium on Entomology 2018: Advances and Challenges, 10-12, December,2018 at Professor Jaya Shankar Telangana Agricultural University.	Souvenir and Abstract pp: pp:89-90
Pathipati VL , Vijaya Lakshmi T, Rajani, Ramana C.V and NaramNaidu. L	2018	Dissipation studies of thiamethoxam on capsicum under field and poly house conditions.	Research Note	International Conference on Advances in Agriculture and Allied Science Technologies for sustainable Development, Feb 10-11,2018 at Prof. RamiReddycentre for Distance Education, Osmania University, Hyderabad, Telangana. Souvenir pp: 115-116	Souvenir and Abstract pp: pp:37

HORTICULTURE POLYTECHNIC, MADAKASIRA





- “Influence of Azospirillum and phosphorus solubilizing bacteria on growth and biological nitrogen fixation of banana cv. Giant Cavendish” National Seminar on “Futuristic Agriculture for Sustainable Food Security” from 21st to 23rd February, 2018. SV Agricultural College, Tirupati.
- “Effect of Azospirillumbrasilenses and AMF (Glomus mosseae) on Growth and quality of Guava” National Seminar on “Futuristic Agriculture for Sustainable Food Security” from 21st to 23rd February, 2018. SV Agricultural College, Tirupati.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Dr.N.B.V.Chalpathi Rao, Principal Scientist (Ent.) attended and presented the abstract paper on “Field efficacy of *Pediobius imbrues* (Hymenoptera:Eulophidae) Parasitoid on coconut slug caterpillar *Macroleptractanararia* Moore (Limacodidae:Lepidoptera)” in 1st International Conference on Biological control from 27-29th September, 2018 at Bengaluru being organized by ICAR – NBAIR, Bengaluru.
- The Scientists of HRS, Ambajipeta participated in International symposium on plantation crops (PLACROSYM XXIII) from 6th – 8th March, 2019 at Chikkamagaluru, Karnataka and made oral presentation of research papers and posters as detailed below.
- Ramanandam, G., Padma, E. Dilip Babu J. and Maheswarappa, H.P. 2019. Evaluation of new coconut hybrids (Tall X Tall) for its suitability to coastal Andhra Pradesh.
- Neeraja, B. Snehalatha Rani, A., Chalpathi Rao, N.B.V., Ramanandam, G. and Maheswarappa, H.P.2019. Studies on different formulations of bio agent, *Trichoderma* in the management of stem bleeding disease in coconut.

HORTICULTURAL RESEARCH STATION, KOVVUR

- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, HRS, Kovvur participated in the 18th Annual Group Meeting and Golden Jubilee celebration of AICRP on Tuber Crops held on 26-28th April, 2018 at ICAR-CTCRI, Thiruvananthapuram. Also acted as Co- Chairmen for the technical session II on Varietal evaluation on 26.04.2018.
- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur participated in the 18th Annual Group Meeting and Golden Jubilee celebration of AICRP on Tuber Crops held on 26-28th April, 2018 at ICAR-CTCRI, Thiruvananthapuram. Also presented the research work carried out at HRS, Kovvur under AICRP on Tuber crops and acted as rapporteur in technical session III on Agro Techniques on 26.04.2018.
- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head, and Dr. A. Snehalatha Rani, Scientist (Plant Pathology) HRS, Kovvur participated in the one day workshop on Rugose spiralling white fly organised by ICAR-CPCRI and Department of Horticulture, Rajahmundry, at ICAR-CTRI, Rajahmundry on 07.05.2018.





- Dr. B. V. K. Bhagavan Principal Scientist (Hort.) & Head participated in the annual group meeting of AICRP on Palms at ICAR-IIOPR, Pedavegi on 24.05.2018.
- Dr. K. Ravindra Kumar, Scientist (Hort.) participated and assisted for organizing work shop on “Processing and Value Addition in Spices” on 7th June, 2018 at Horticultural Research Station, Chintapalli organized by Indian Institute of Spices Research, Calicut and AICRP on spices, Chintapalli.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Dr. A. Snehalatha Rani, Scientist (Pl Path), HRS, Kovvur attended the QRT review meeting of sapota, papaya and Jack fruit at HC&RI, Periyakulam, on 14.6.18 and presented the research achievements of the centre for the past five years.
- Dr. A. Snehalatha Rani, Scientist (Pl. Path) briefed the “Nematode infestation in protected cultivation and their management” to all the DDH’s and ADH’s of Department of Horticulture, Andhra Pradesh at Office of the Commissionerate of Horticulture, Guntur on 4.07.2018.
- Dr. B.V.K. Bhagavan, Principal Scientist (Hort) & Head, HRS, Kovvur participated in the workshop on “Doubling the farmers income and follow up action of 5th GD” of ICAR-AICRP on Fruits from 17th to 19th September 2018 at IIHR, Bengaluru.
- Dr. R. Naga Lakshmi, Scientist (Hort.) attended to “Workshop on Bougainvillea” at Farmers training centre, State water Resources Department, Vijayawada organized by Andhra Pradesh Greening & Beautification Corporation on 28.9.2018.
- Sri Ch.S. Kishore Kumar, Scientist (Pl. Path.) participated in the Panel Discussion and appraisal meeting of ICAR-AICRP on Nematodes in Agriculture from 12th Nov-13th Nov 2018 at Assam Agricultural University, Jorhat and presented the work done report for the year 2017-18.
- Dr B.V.K.Bhagavan, PS (Hort) & Head HRS, Kovvur and M.L.N. Nandini, RA (PP) participated in the 6th Annual Group meeting of AICRP on Fruits from 14th to 16th February 2019 at AAU, Jorhat and presented the technical programme of work.

CITRUS RESEARCH STATION, PETLUR

- Dr.M.G.BalaHussaini, Senior Scientist (Hort), Participated in 21 days CAFT Training programme on “Conservation and utilization of plant genetic resources in plantation and spice crops” at UHS Campus, Bengaluru from 11-10-2018 to 31-10-2018.

HORTICULTURAL RESEARCH STATION, ANANTHAPURAMU

- Dr. P. Deepthi attended Training programme on Nematodes at IARI, New Delhi from 17.8.18 to 27.8.18.

HORTICULTURAL RESEARCH STATION, CHINTAPALLI





- Dr. V. Sivakumar, Scientist (Hort.) & Head participated in National group meeting of research workers (XXIX Workshop) of ICAR-AICRP on Spices held at Dr.YSPUHF, Solan, H.P. on 4th-6th October 2018.
- Dr. V. Sivakumar, Scientist (Hort.) & Head participated and presented a paper in 8th Indian Horticultural Congress held at IGKV, Raipur, Chattishgarh from 17-01-2019 to 21-01-2019.
- Dr. V. Sivakumar, Scientist (Hort.) & Head participated and presented a paper in National Seminar on Use of Agro-chemicals for a Sustainable Agriculture and Environment held at BCKV, Mohanpur, Kalyani, West Bengal on 27-03-2019.

HORTICULTURAL RESEARCH STATION, PANDIRIMAMIDI

- P.C. Vengaiyah, G.N. Murthy and H.P. Maheswarappa 2019. Development of technology for fresh sap collection from Palmyrah (*Borassus Flabellifer* L.) for promotion of health drink. ISAE symposium during 28-30 January 2019.
- P.C. Vengaiyah, G.N. Murthy and H.P. Maheswarappa 2018..Physico-chemical and functional characteristics of Palmyrah Spongy Endosperm flour (*Borassus flabellifer* L)” PLACROCYM XXIII during 6-8th March, 2019

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Dr. P. Ashok, Scientist (Hort.) attended “Jack Fruit Conclave” at College of Horticulture, Tamaka, Kolar, Karnataka from 01.06.2018 to 02.06.2018.
- P. Rama Devi, SS(PP) participated in workshop on “tomato learning modules “ at ICRIAT on 12.6.2018.
- P. Rama Devi, SS(PP) participated in technical screening committee meeting of APMAPB at Vijayawada on 28.6.2018
- P. Rama Devi, SS(PP), D. Aparna, S(H) & V.S.L. Saranya, RA(Ento) participated in XXVI Annual Group Meeting of AICRP on MAP & Betelvine, AAU, Jorhat, Assam from 28th to 30th September, 2018.
- P. Rama Devi, SS(PP) participated in workshop on “Status and Scope for Promotion of Medicinal Plants Cultivation in Andhra Pradesh” at Sri Yerramilli Narayana Murty College, Narsapur, Andhra Pradesh on 6.10.2018
- D. Aparna, S(H) attended farmers meeting on “Basil crop cultivation” organized by Jai Kisan Seva Samstha an NGO and Department of Horticulture at Addanki on 11.10.2018
- P. Rama Devi, SS(PP) and V.S.L. Saranya, RA (Ento) participated in work shop on “Awareness, Motivation and Technology Transfer for Development of Bee keeping in Andhra Pradesh” at Dr YSRHU, VR Gudem on 27th and 28th October, 2018

MANGO RESEARCH STATION, NUZVID

- Dr. B.K.M.Lakshmi, Scientist (Plant Pathology), MRS, Nuzvid. Attended 5th National Asian PGPR Conference for Sustainable and Organic Agriculture Eco –



friendly Bio-Innovations for Integrated Crop management & Soil Health held from 23-25 th February 19 at Acharya Nagarjuna University, Guntur

KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

- On 14-12-2018 Sri. G. Shaliraju attended awareness work shop on “Plant parasitic Nematode: A hidden threat to nursery industry” at CTRI, Rajahmundry which was organised by ICAR-Directorate of Floriculture research, Pune.
- On 15-12-2018, Krishi Vigyan Kendra, Venkataramannagudem in collaboration with Horticulture Department conducted “Farmers-Department Officers – Scientists” interaction meeting at KVK, Venkataramannagudem. In this program Dr. J. Dilip babu, Director of Research, Dr. A. Sujatha, Dean of student affairs, Dr. M.Venkata Swamy, Principal scientist, PHTRS, Dr. Rama Devi, Senior scientist and Head, HRS, Venkataramannagudem, Scientists from HRS and KVK VR Gudem, Sri. T.V. Subbarao, DDH, Sri. P. Balaji, ADH, Eluru, Sri. Ch. Satyanarayana, APMIP West Godavari, Horticulture officer, Tadepalligudem along with MPEOs were participated. In this program farmers interacted with scientists and clarified their doubts on their farming activities. Pests and disease management in coconut, guava, oil palm, water melon and vegetables were explained by the scientists.



Farmers scientist interaction meeting was conducted in KVK, Venkataramannagudem on 19-01-2019. In this program more than 200 farmers have participated and expressed their problem and cleared the same. In this program our honourable Vice-Chancellor Sri Chiranjiv Choudhary, IFS and Commissioner of Horticulture and Sericulture and Ex-officio Secretary to Govt. of Andhra Pradesh has participated

as chief guest and our respected university officers Dr.M.L.N.Reddy, Dean of Horticulture, Dr.R.V.S.K. Reddy, Director of Extension, Dr.A. Sujatha, Dean of student affairs, Dr. YSR Horticultural University, Venkataramannagudem and Sri. T.V. Subbarao, DDH, West Godavari district have participated as Guests of Honour to this program.

On 16-2-2019, Krishi Vigyan Kendra, Venkataramannagudem in collaboration with horticulture department conducted farmers-Scientists interaction meeting at KVK Venkataramannagudem on Rugose Spiralling white fly management in horticultural crops. In this program our respected university officer Dr. J. Dilipbabu, Director of research, Dr. YSR Horticultural university have participated as chief guest and Dr. Ramanandam, Principal Scientist(Horticulture), Dr. Chalapathirao, Principal Scientist (Entomology) HRS, Ambhajipet, from horticultural department Sri. T. Subbarao, DDH, ADH-Eluru and ADH- Jangareddygudem, West Godavari and other KVK scientists were participated. In this program many of the farmers interacted with eminent scientists and clarified their doubts.





VII. FINANCE AND BUDGET

The major financial grants to Dr.Y.S.R.Horticultural University comes from the A.P.Government under Plan by way of grants-in-aid for running the institution. The bulk grants approved in the budget for the year 2018-19 was Rs.99,41,55,000/- including salaries grant and other grants-in-aid.

The ICAR assistance was Rs.8,98,78,000/- (including NAIP) and the Govt. of India assistance was Rs.1,07,80,000/- while the amount received from other agencies was Rs.3,55,46,000/- and Departmental sponsored schemes (RKVY) Rs.3,90,00,000/-.

Thus, the total budget of the University for the year 2018-19 was Rs. 99,41,55,000/- (Rupees ninety nine crores forty one lakhs and fifty five thousand six only).





VIII. AWARDS AND HONOURS

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

Hon'ble Chief Minister of Andhra Pradesh Sri N. Chandrababu Naidu garu has presented the first prize of A.P.Green Awards to College of Horticulture, Venkataramannagudem, respectively under the category of colleges (public) for the year, 2017 on 14.07.2018



Dr.M.Rajasekhar, Professor (Hort.) has received Business Leadership award-2018 under Academician category at Indian Business Summit organized by Sun Media group on 02-11-2018 at Hyderabad, Telangana

Dr.K.Uma Jyothi, Associate Dean and Dr.E.Padma, Associate Professor of College of Horticulture, Venkataramannagudem were felicitated in the Diamond Jubilee Celebrations of Horticultural Research Station, Kovvur conducted on 08-01-2019 for their contribution in the development of research station during their tenure of work at HRS, Kovvur.



COLLEGE OF HORTICULTURE, ANANTHARAJUPETA



Dr. M. Rama Krishna, Associate Dean, College of Horticulture, Anantharajupeta has received the “A.P.Green Award - 2017” award from Hon'ble Chief Minister of Sri. Nara Chanhdra Babu Naidu, organized by A.P. Greening and Beautification Corporation, Vijayawada, held at IIIT campus, Nuziveedu, Krishna district on 14-07-2018 in the category of College

(Public) level.

Dr. M. Raja Naik, Assistant Professor (Horticulture), College of Horticulture, Anantharajupeta has received the “Outstanding Faculty in Agricultural Sciences (in the field of Floriculture)” award from Venus International Foundation, Centre for Advanced Research and Design, Chennai on 7-7-2018.





Dr. C. Madhumathi, Professor (Horticulture), COH, Anantharajupeta has received “Scientist Award” on the occasion of RythuNesthampuraskaralu -2018 on 07-10-2018 at Swarna Bharathi trust, Hyderabad from Hon’ble Vice President of India Sri. M. Venkaiah Naidu.

Dr. V. Vijaya Bhaskar, Professor (Horti) of College of Horticulture, Anantharajupeta has received the “Fellow of ISOH (Indian Society for Ornamental Horticulture) -2017” award during the ‘National Conference on Ornamental Horticulture to uplift rural economy’ held at MPUAT (Maharana Pratap University of Agriculture and Technology), Udaipur from 11th to 13th January, 2019.



- Dr. M. Rama Krishna, Associate Dean, College of Horticulture, Anantharajupeta received the “A.P.Green Award - 2017” from Hon’ble Chief Minister of Sri. Nara Chanhdra Babu Naidu, organized by A.P. Greening and Beautification Corporation, Vijayawada, held at IIIT campus, Nuziveedu, Krishna district on 14-07-2018 in the category of College (Public) level.
- Dr. V. Vijaya Bhaskar, Professor (Horti) of College of Horticulture, Anantharajupeta received the “Fellow of ISOH (Indian Society for Ornamental Horticulture) -2017” award during the ‘National Conference on Ornamental Horticulture to uplift rural economy’ held at MPUAT (Maharana Pratap University of Agriculture and Technology), Udaipur from 11th to 13th January, 2019.
- Dr. Ch. Ruth, Professor(Pl.Path) received Achiever award 2018 in recognition to the outstanding contribution made by her to the society especially in the field of farming/agriculture directly or indirectly which was organised by SADHANA (society for advancement of Human and Nature) at Dr. Y.S Pramar university of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh, India.
- Dr. K.M. Yuvaraj, Professor (Horticulture) received Best Tteacher award 2018-19, Sept 5th at Amaravathi.
- Dr. C. Madhumathi, Professor (Horticulture), COH, Anantharajupeta has received “Best Scientist Award” on the occasion of RythuNesthampuraskaralu -2018 on 07-10-2018 at Swarna Bharathi trust, Hyderabad from Hon’ble Vice President of India Sri. M. Venkaiah Naidu.
- Bharat Ratna Dr. Abdul Kalam Gold medal award 2019 was presented to Dr. Y. Sireesha, Asst. Professor (Pl. Path), COH, Anantharajupeta on the occasion of 66th National Unity Conference for Individual Achievement and National Development by Global Economic Progress & Research Association, New Delhi.
- “Kanwar Virender Singh Memorial All India Best Publication Award, 2019” was received by Dr. Y. Sireesha, Asst. Professor (Pl. Path), COH, Anantharajupeta which was announced by SADHANA (Society for Advancement of Human and Nature), Dr.





YS Parmar University of Horticulture and Forestry Nauni, Solan, Himachal Pradesh, India.

- Dr. M. Raja Naik, Associate Professor (Horticulture) received Excellence in Teaching Award presented by Genesis Urban and Rural Development Society, Hyderabad, Telangana [A Professional and Scientific Society] [UN-FAO-GSP-PARTNER] held at International Conference on ‘Advances in Agriculture and Allied Sciences Technologies for Sustainable Development’ – ICAAASTSD – 2018, February 10-11, 2018 at Osmania University, Hyderabad, Telangana.
- Dr. M. Raja Naik, Associate Professor (Horticulture) received Braja Gopal Sharma Memorial ‘All India Best Agricultural Extension Worker Award – 2018’ presented by Society for Advancement of Human and Nature [SADHNA], Solan, Himachal Pradesh held at Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh on 28 February, 2019.
- Dr. M. Raja Naik, Associate Professor (Horticulture) received Outstanding Faculty in Agricultural Sciences for the contribution and achievement in the field of ‘Floriculture’ presented by Venus International Foundation [Centre for Advanced Research and Design] held at 7th July, 2018 at Chennai, Tamil Nadu.
- Dr. M. Raja Naik, Associate Professor (Horticulture) received Young Scientist Award presented by Science and Tech Society for Integrated Rural Improvement [S and T, Siri], Thorrur, Mahabubabad, Telangana – 506 163 held at National Conference on ‘Doubling Farmers Income for Sustainable and Harmonious Agriculture’ [DISHA-2018], 11-12 August, 2018 at Ranchi, Jharkhand.
- Dr. M. Raja Naik, Associate Professor (Horticulture) received Excellence in Extension Award presented by Science and Tech Society for Integrated Rural Improvement, Thorrur, Mahabubabad, Telangana – 506 163 held at National Conference on ‘Doubling Farmers Income for Sustainable and Harmonious Agriculture’ [DISHA-2018], 11-12 August, 2018 at Ranchi, Jharkhand.

HORTICULTURE POLYTECHNIC, MADAKASIRA

Dr. V. Ramana, Principal got Best Teaching Award(ICFA2018) in 2018

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

The Non-teaching staff of Horticultural Research Station, Ambajipeta Sri. Ch. Gangachalam, AEO, Smt. P.Sasikala, AEO, Sri. P. Ananda Rao, office Subordinate and Sri. J. Krishnamurthy, office Subordinate were given incentive meritorious awards for the year 2018 and were presented by the Registrar, Dr.YSRHU, VR Gudem during the 72nd Independence day celebrations.

HORTICULTURAL RESEARCH STATION, KOVVUR





- Dr.K.Ravindra Kumar, Scientist (Horticulture) was received “Meritorious student award (Gold medal)for outstanding academic performance in Doctor of Philosophy Degree Programme (In-service) from Hon’ble President of India Shri Ram Nath Kovind during the year 2018.
- Dr.K.Ravindra Kumar, Scientist (Horticulture) was received ‘Best Dissertation Award for Ph.D. Thesis -2017’ from Indian Society of Ornamental Horticulture during the year 2018.
- Dr.K.Ravindra Kumar, Scientist (Horticulture) was received best oral presentation award for presenting on “Direct Plant Regeneration from Leaf and Ovary Explants of *Tagetes spp.* and Assessment of their Genetic Fidelity by Using SSR Markers”
- Dr.K.Ravindra Kumar, Scientist (Hort.) confers ‘Best Dissertation Award for Ph.D. Thesis -2017’ from Dr.K.V.Prasad, Director, DFR, Pune in the presence of Dr.H.P. Singh, Former DDG (Hort.), Chairman, ISOH, New Delhi, Dr. S.K.Malhotra, Agriculture Commissioner, Min. of Agri. And Farmers Welfare (GOI) and Dr. T. Janakiram, ADG (Hort.), Vice President, ISOH in National Conference on Ornamental Horticulture to Uplift Rural Economy held at Maharana Pratap University of Agriculture and Technology, Udaipur on 10thJanuary, 2019 for his research work entitled “Studies on plant regeneration in marigold through *in vitro* culture of male and female gametophyte in *Tagetes spp.*”
- Dr.K.Ravindra Kumar, Scientist (Hort.) received ‘Best Oral Presentation Award’ from Dr. S.K.Malhotra, Agriculture Commissioner, Ministry of Agri. and Farmers Welfare (GOI) in the presence of Dr.U.S.Sharma, Vice Chancellor, MPUAT, Udaipur, Dr. H.P. Singh, Former DDG (Hort.), Chairman, ISOH, New Delhi, and Dr. T. Janakiram, ADG (Hort.), Vice President, ISOH in National Conference on Ornamental Horticulture to Uplift Rural Economy held at Maharana Pratap University of Agriculture and Technology, Udaipur on 11th January, 2019 for the oral paper entitled “Production of doubled haploids (DH) through colchicine treatment of anther and ovule culture derived plants of marigold (*Tagetes spp.*)”.
- Dr.K.Ravindra Kumar, Scientist (Horticulture) was received JawaharLal Nehru award citation, gold medal and Rs. 50,000/- in cash prize for P.G. Outstanding Doctoral Thesis Research in Agricultural and Allied Sciences 2018 - Horticulture, from Dr.Trilochan Mohapatra, Secretary (DARE), ICAR during the year 2019.
- Dr. R Naga Lakshmi, Scientist (Hort.)received 3rd prize for poster presentation in National Conference on Ornamental Horticulture to Uplift Rural Economy held at Maharana Pratap University of Agriculture and Technology, Udaipur on 11th January, 2019 for the paper entitled “Impact of flower inducing chemicals on flowering, floral attributes and spike yield of tube rose cv. Prajwal”.

CITRUS RESEARCH STATION, PETLUR



- Sri.K.Munichandra, AEO, CRS, Petlur, Sri. K.Guravaiah, Mali, CRS, Petlur, and Sri.K.Chandraiah, Office Subordinate, CRS, Petlur received meritorious awards for non-teaching staff for the year-2018 during 72nd Independence day celebrations on 15.08.2018.

HORTICULTURAL RESEARCH STATION, VIJAYARAI

- Received the "The Best All India Coordinated Research Centre on Palms Award for the Year 2018-19" awarded at 28th Annual Group Meeting of AICRP on Palms held at TNAU, Coimbatore on 6-6-2019.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

- Dr M. Ravindra Babu, Senior Scientist (Hort.) HRS, Venkataramannagudem received Dr.I.V.Subba Rao Memorial Award conferred by Rythunestam Foundation and Swarna Bharathi Trust in the year 2018 for the contributions made in Horticultural Extension.
- Dr. D. Aparna, Scientist (Hort.) HRS, Venkataramannagudem received best presentation award under crop production session during XXVI Group Meeting of All India Coordinated Research project on Medicinal and Aromatic Plants & Betelvine (AICRP-MAP&B) at AAU, Jorhat, from 28th -30th September, 2018.

MANGO RESEARCH STATION, NUZVID

- Dr. B.K.M.Lakshmi, Scientist (Plant Pathology), MRS, Nuzvid. Attended the National Symposium on 'Recent Challenges and Opportunities in Sustainable Plant Health Management' at BHU, Varanasi, UP on February 26-28, 2019 for ORAL presentation of research paper and for receiving the 'Fellow of Indian Phytopathological Society (FPSI) award from AP

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

Attended Farm Innovator meet at CRIDA, Santhosh Nagar, Hyderabad organized by ICAR, ATARI

On 14.04.2018, Miss Srividya Rani.N, Scientist (Extension) from Krishi Vigyan Kendra, Pandirimamidi, attended Farm Innovator meet at CRIDA, Santhoshnagar, Hyderabad, organized by ICAR, ATARI. In this programme Smt. Illa Somalamma, farm Innovator from Peddageddada village of Rampachodavaram mandal presented her work on Mixed farming of vegetables on Pandal system. Poster and power point presentation was done by her. In this programme **farmer and**



scientist received appreciation from Dr.A.K.Singh, DDG, ICAR, Dr.Y.G.Prasad, Director, ICAR, ATARI and Dr.Raji Reddy, DE, PJTSAU. 60 farmers from AP, Telangana and Tamilnadu presented their innovations. All the farmers were felicitated and certificates were provided to the farm innovators.

Attended Annual Zonal Workshop organized by ICAR, ATARI at Hyderabad.



From 20.09.2018 to 22.09.2018 Dr.A.Srinivas, Principal Scientist & Head from Krishi Vigyan Kendra, Pandirimamidi attended Annual Zonal Workshop at ATARI, Hyderabad. In this programme Dr.A.Srinivas presented work done for the year 2017-18, presented poster on cashew grafting technology, received **Best Poster Award** and CD was released on Cashew Grafting & Nursery Management by DG, DDG, ADG- ICAR, Govt of India in the presence of Director – ICAR, ATARI, Zone-X, Hyd, VCs of ANGRAU, PJTSAU & TANUVAS. Heads from all the KVKs of Zone-X attended and presented their work done for the year 2017-18.

Received Rampa Vibhushan Award on the occasion of 70th Republic Day Celebrations at Rampachodavaram.

On 26.01.2019, Dr.A.Srinivas, Principal Scientist & Head, Krishi Vigyan Kendra, Pandirimamidi received **Rampa Vibhushan** Award from the hands of Sri Nishanth Kumar, IAS, Project Officer, ITDA, Rampachodavaram for the meritorious work done in the agency area of Rampachodavaram division, East Godavari district & significant contributions in Extension services in Agri. & allied sectors for uplifting the Tribal families.





X. OTHER SIGNIFICANT EVENTS IF ANY

COLLEGE OF HORTICULTURE, VENKATARAMANNAGUDEM

AP educational tour scheduled from 26th August 2018 to 01st September, 2018 has commenced on 26th August, 2018. A total number of 90 students of second year B. Sc (Hons.) Horticulture have participated in this activity under the guidance of Dr.K. Umakrishna, Professor (Statistics), Dr. K. Usha Kumari, Asst Prof (Hort.) and Dr G. Kranthi Rekha, Asst Prof (Hort.).

M.Sc. (Hort.) second year students of College of Horticulture, Venkataramannagudem have visited the National Horticulture Fair 2019 at IIHR, Bengaluru on 24-01-2019 as part of Educational tour along with tour leaders Sri M.Paratpara Rao, Assistant Professor and Sri P. Vinay Kumar Reddy, Assistant Professor. They have also visited International Flower Auction Centre, Biodiversity International and Flower Show at Lalbagh, Bengaluru on 25-01-2019.

South India Educational tour from 13-02-2019 to 26-02-2019 was completed with leadership of Dr.T.Suseela, Associate Professor, Dr.K.Sasikala, Associate Professor and Dr.B.Peda Babu, Assistant Professor along with 72 students of final year B.Sc. (Hons.) Horticulture.

Final year students of COH, VRGudem viz., Ms.M.Tejaswini, Ms. M.Yamuna and Mr.S.Sainadh Reddy were selected for In-plant training in ITC, Guntur through interview under 'STUDENT READY programme-Placement in Industries'. The students will undergo training in ITC, Guntur during II semester, 2018-19.

Seven students participated along with Dr.B. Ambedkar, Teaching Associate have participated in one day Australian Education fair organized by IDP (International Education Placement Consultancy) in Vijayawada on 4th Feb, 2019.

Self defense training programme was organized to the UG girl students at College of Horticulture, Venkataramannagudem on 23-03-2019

COLLEGE OF HORTICULTURE, ANANTHARAJUPETA

- 11th Annual day was celebrated at COH, Anantharajupeta on 12-05-2018.
- Celebrated Babu Jagjivan Ram's 111th Birthday on April 5th, 2018, Dr. B. R. Ambedkar Birthday on April 14th, 2018.
- Farewell day of 2015 batch was celebrated at COH, Anantharajupeta, on 29-04-2018.
- The World Environment Day was celebrated on 05-06-2018 at College of Horticulture, Anantharajupeta, by NSS unit I and II.
- The International Day of Yoga on 21st June 2018 was conducted at College of Horticulture, Anantharajupeta.
- In addition to that, important days like Teachers Day on 05-09-2018, 71st Independence day and 70th Republic Day, National Agricultural Educational Day on 03-12-2018, International Women's Day on March 8th, 2019, South India Educational





Tour was conducted from 12-11-2017 to 23-11-2017 for final year B.Sc., (Hons.) Horticulture students. Dr. M. Raja Naik, Asst. Professor (Hort.) and Dr. Y. Sireesha, Asst. Professor (Plant Path.) accompanied the students. Students were taken to reputed institutes like IIHR, Bengaluru, CFTRI, Mysore, Regional Horticultural Experimental Station, Chattali, IISR, Kozikod, HRS, Ooty, CTCRI, Thiruvananthapuram, TNAU, Coimbatore, NRC, Banana, Tiruchirapalli etc.

- AP Educational Tour was conducted from 01-09-2018 to 05-09-2018.
- South India Educational Tour was conducted from 11-02-2019 to 23-02-2019.
- The VanamManamProgramme on 1st July 2018 was held at College of Horticulture, Dr. YSRHU, Anantharajupeta.
- On 22.07.2018, a camp on 'Voter Awareness Campaign' was conducted at College of Horticulture, Anantharajupeta.
- Orientation programme was conducted to RHWEP & ELP students on 25-07-2018. Dr. M. Ramakrishna, Associate Dean is explained about the importance of the RHWEP & ELP.
- All the staff of COH, Anantharajupeta participated in Gandhi Jayanthi celebration on 02-10-2018 and many staff members spoke on the occasion.
- Fresher's day celebrated at College of Horticulture, Anantharajupeta on 05-11-2018.
- An 'Anti Ragging Awareness camp' was organized by the Associate Dean Dr. M. Ramakrishna at College of Horticulture, Anantharajupeta on 25-09-2018.
- National Agricultural Educational Day was conducted at College of Horticulture, Anantharajupeta on 03-12-2017 by involving teaching staff, PG & UG students and students from local colleges. Dr. M. Ramakrishna, Associate Dean speaks about the importance of Agriculture education and ongoing academic activities initiated by the Indian Council of Agricultural Research (ICAR).
- Farewell day was celebrated at COH, Anantharajupeta, on 15-03-2019. The third year students (2015) arranged a warm farewell to their senior 2014 admitted batch.

COLLEGE OF HORTICULTURE, PARVATHIPURAM

Sl. No.	Date	Events
1	10-10-2018	Conducted Elocution competition on topic "Importance of vote in Indian Democracy" on 10-10-2018 and Ms. T.Sindhu III year BSc. (Horticulture) won 1 st prize in the competition
2	15-10-2018	Dr .B.Prasanna Kumar, Associate Dean conducted Awareness Campaign in Titli cyclone affected villages in Garugubilli and Jiyyammavalasamandals of Vizianagaram district and explained post cyclone measures to be taken up in Banana and Vegetable crops to the farmers on 15-10-2018





3	22-10-2018	Dr. M.Laxminarayana Reddy, Dean of Horticulture, Dr.YSRHU inaugurated the land leveling operations by AP Agros Development Corporation, Vizainagaram at College Farm, College of Horticulture, Parvatipuram.
4	22-10-2018	Dr. M.Laxminarayana Reddy, Dean of Horticulture and Dr. A.Sujatha, Dean of Student Affairs Dr.YSRHU visited the newly installed shade net house in the College farm of College of Horticulture, Parvatipuram.
5	22-10-2018	Inauguration of Health Clinic by Dr. A.Sujatha, Dean of Student Affairs, Dr.YSRHU on 22 nd October 2018 at College of Horticulture, Parvathipuram
6	22-10-2018	Dr. M.Laxminarayana Reddy, Dean of Horticulture and Dr. A.Sujatha, Dean of Student Affairs Dr.YSRHU interacting with students in the newly established Health Clinic at College of Horticulture, Parvathipuram
7	22-10-2018	Inauguration of new RO unit by Dr. M.Laxminarayana Reddy, Dean of Horticulture and Dr. A.Sujatha, Dean of Student Affairs, Dr.YSRHU on 22 nd October, 2018 in the dining hall at College of Horticulture, Parvathipuram

HORTICULTURE POLYTECHNIC, KALIKIRI

- The officers from the Amara Raja Pvt., Ltd., company conducted **campus selections** at Horticulture Polytechnic, Kalikiri for the post of Assistant Trainee on 09-05-2018 for 2nd year Diploma students. Written examination and interview were conducted. 3 students were selected for the posts.
- Fourth International Day of Yoga was celebrated at Horticulture Polytechnic, Kalikiri on 21-06-2018.
- Planted **lime seedlings** of two varieties namely **Balaji (25 nos.)** and **Petlur selection (24 nos.)** in the campus.
- **Planted Neem seedlings** (50nos.) at HPT, Kalikiri.
- Planted Tamarind grafts (100 nos) of two varieties viz., Red Tamarind and Tettuamalika and also Custard apple Var. Balanagar procured from HRS, Ananthapuram.
- Awareness meeting was conducted on Health and personal hygiene for NSS Volunteers by Dr.V.M.Sankaraiah&Dr.E.Pushpakumari, Medical doctors, Community Health Center, Kalikiri on 22-09-2018.
- **“Rashtriya Ekta Diwas”** (National Unity Day) was celebrated on 31st October, 2018. The following activities were organized.
 1. Meeting
 2. Pledge
 3. Run for unity





- Guest lecture was organized on 17-11-2018 for students on the topic “**Breeding methods in Horticultural Crops**”. Dr.M.Reddy Sekhar, Professor of Plant Breeding, S.V.Agricultural College, Tirupati participated as a resource person.
- 9th National Voters Day was organized on 25-01-2019. A Rally and competitions (Essay writing and Elocution) were conducted for the NSS volunteers. A meeting was organized to create awareness about the importance of voting, enrolment of the new voters and to elect right leaders.
- Birthday celebration of Sri Potti Sriramulu was conducted at HPT, Kalikiri on 16-03-2019.

HORTICULTURAL RESEARCH STATION, AMBAJIPETA

- Dr.P. Chowdappa, Director CPCRI along with Dr.Vinayak Hegde, Head, Division of Pl. Path. CPCRI, Kasaragod and Dr. Joseph Rajkumar, Principal Scientist (Ent.), CPCRI – Regional center, Kayankulam visited Horticultural Research station, Ambajipeta on 06.05.18 and interacted with scientists and were briefed about the ongoing research project on AICRP (Palms) by the scientists of HRS, Ambajipeta
- Dr. V. Damodar Naidu, Hon’ble Vice Chancellor, ANGRAU & Member, Board of management, Dr.YSRHU visited Horticultural Research station, Ambajipeta on 16.05.18 and review the ongoing research projects and interacted with the scientists and complemented the scientists for their efforts for mass multiplication of bioagents and planting material and supply to the farmers.
- Sri. Lakshmi Narayana, IPS, CBI, Joint Director (Retd.), Maharashtra cadre visited Horticultural Research Station, Ambajipeta and appreciated the efforts of biocontrol lab in managing pests of coconut on 19.07.08.
- Commissioner of Horticulture & Hon’ble Vice Chancellor, Dr.YSRHU Sri. Chirajeev Chowdary, IFS, visited Horticultural Research Station, Ambajipeta and interacted with scientists and were briefed about ongoing research activities on 10.08.18 where Hon’ble Member, Board of Management, Dr.YSRHU Sri. B.Nageswara Rao also participated.
- Dr. A.M.K. Mohan Rao, Emeritus Scientist of NIPHM, Hyderabad visited Horticultural Research Station, Ambajipeta to interact with Scientists to assess the extent of damage caused by the rodents and to prepare action plan for its management during 2019-20 on 28.09.18.
- Dr. B.Srinivasulu, Registrar, Dr.YSRHU, VR Gudem visited Horticultural Research Station, Ambajipeta and observed the ongoing experiments of Plant pathology and to interact with the scientists of HRS, Ambajipeta on 19.11.2018.
- Dr. B. Ramanujam, Principal Scientist (Plant Pathology) and Dr. S. Selvaraj, Scientist (Entomology) from National Bureau of Agriculturally Important Pests, Bangalore made a visit on biocontrol laboratories of Entomology and Plant Pathology on 04.01.2019.





- Dr.A.Sujatha, Dean of Student Affairs, University head (Entomology), Dr.YSRHU visited Horticultural Research Station, Ambajipeta and reviewed the Entomology technical programme (Plan and non-plan) on 05.01.19.

HORTICULTURAL RESEARCH STATION, KOVVUR

“Horticultural Research Station, Kovvur celebrated its **Golden Jubilee on 8.1.2019** on successful completion of fifty years of research. The programme was inaugurated by Sri Somireddy Chandra Mohan Reddy, Hon’ble minister for Agriculture, Horticulture, Sericulture and Agri processing, Sri K.S. Jawahar, Hon’ble minister for Excise and prohibition presided over the function. New tissue culture laboratory and office building was inaugurated by the dignitaries. An exhibition was arranged by different institutes and line departments. Sri Chiranjeev Chowdary, Hon’ble Vice Chancellor, DrYSRHU, Dr.B. Srinivasulu, Registrar, Dr. J. Dilip Babu, Director of Research, Dr. R.V.S K. Reddy, Director of Extension, Hon’ble board members of the University, Sri Bonam Nageswara Rao, Dr. K. Umajyothi, Dr. K.T.V. Ramana, Dr. L. Naram Naidu and Sri Narasimhulu, Estate officer, Dr,YSRHU, participated in the programme. Smt. J. Radha Rani, Municipal Chairman, Kovvur, Sri. D. Raja Ramesh, Municipal Vice chairman, Sri Vegi Satyanarayana, AMC Chairman, Kovvur, Smt. Gousia Begum, Joint Director of Agriculture, Scientists from various research stations and officers from different line departments and about 870 farmers from various districts have participated in the celebrations. All the previously worked scientists and non-teaching staff and progressive farmers from different districts were felicitated in the programme. In this occasion released Folders and booklets on cultivation aspects of banana, turmeric, tuber crops and nematodes.”



- Dr. R.Naga Lakshmi, Scientist (Hort.), visited Sri Rama Krishna Nursery, Kadiyam and Indian Green nursery, Kadiyapulanka, East Godavari district on 21.05.2018 as a member in the team of Accreditation and rating of horticulture nurseries under NHB scheme.
- Dr. K. Ravindra Kumar, Scientist (Hort.), Sri.Chttibabu, ADH, Rajahamundry along with NHB team inspected M/s A.K.S.V.Nursery, Kadiyam and M/s Sri Sreenivasa Gardens, Kadiyapulanka for accreditation and rating of nurseries under NHB scheme on 22.05.2018. Evaluated nurseries based on the maintenance of scion blocks, nursery



plant maintenance, infrastructure facilities, labeling and maintenance of records and registers.

- Dr. K. Ravindra Kumar, Scientist (Hort.), Dr. K. Rajendra Prasad, Scientist (Hort.) and Sri. Mallikharjun, HO, Kadiyam inspected nine horticulture nurseries located at Kadiyam and Alamuru mandals on 14.06.2018 as members in accreditation and rating of Horticulture nurseries. Evaluated nurseries based on the maintenance of scion blocks, nursery plant maintenance, infrastructure facilities, labeling and maintenance of records and registers.
- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur attended the selection committee as a member (Outside expert) and SC/ST representative for the selection of Lab/ field Assistant on temporary basis at ICAR – IIOPR, Pedavegi on 23.06.2018.
- Dr. S. Uma, Director, National Research centre for Banana visited Horticultural Research Station, Kovvur on 25.06.2018 and reviewed the ongoing research programmes of banana being carried out at the station. Dr. B.V.K. Bhagavan, Principal Scientist (Hort.) & Head, Dr. K. Mamatha Senior Scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.), Dr. K. Ravindra Kumar, Scientist (Hort.) and Dr. A. Snehalatha Rani, Scientist (Plant Pathology), HRS, Kovvur explained in detail about the research programmes.
- Dr. K. Mamatha, Senior Scientist (Hort.), HRS, Kovvur attended the selection committee as a member (Outside expert) and SC/ST representative for the selection of Research Associate on temporary basis at ICAR – IIOPR, Pedavegi on 27.06.2018.
- Dr. K. Ravindra Kumar, Scientist (Hort.) along with Shri Murali Krishna, In-charge, North Coastal and Shri Dhanunjay, Horticulture Consultant visited General Hospital and AdikaviNannayya University at Rajahamundry on 05.07.2018. Inspected and recorded data on survival and establishment of avenue plantations, block plantations, landscape works done by AP Urban Greening & BC.
- Dr. K. Ravindra Kumar, Scientist (Hort.) as a member along with horticulture departmental officials, bankers, and agriculture finance corporation representatives inspected tissue culture laboratory of M/s ABT Tissue culture, Anantapuramu on 11.07.2018.
- Dr. K. Ravindra Kumar, Scientist (Hort.), HRS, Kovvur along with Shri Siva Kumar, Horticulture Consultant, West Godavari visited Government General Hospital, Eluru on 21.07.2018 for inspection to record data on survival and establishment of avenue plantations, block plantations, landscape works done by AP Urban Greening & BC.
- Dr. K. Mamatha, Senior Scientist (Hort), Dr. R. Naga Lakshmi, Scientist (Hort) and Dr. K. Ravindra Kumar, Scientist (Hort.) HRS, Kovvur along with Sri.Mallikharjun, HO, Kadiyam inspected a total of sixteen horticulture nurseries located in Kadiyam and Alamuru mandals on 18.08.2018, 20.8.18 and 21.8.18 respectively for nursery registration. Evaluated nurseries based on the maintenance of scion blocks, nursery plant maintenance, infrastructure facilities, labelling and maintenance of records and registers.



- Dr. M.Loganathan, Principal Scientist (Pl. Path.), NRC Banana, Trichy and Sri. Ch.S. Kishore Kumar, Scientist (Pl. Path.) surveyed and collected rhizome rot samples from Kovvur on 7.09.2018.
- Dr. B. Srinivasulu, Registrar, Dr.YSRHU and University Head, Dept of Plant pathology and Dr. B. Gopal, Controller of Examinations, Dr. YSRHU visited HRS Kovvur on 24.11.2018 and reviewed the ongoing experiments of Plant pathology and visited tissue culture laboratory and experimental plots.
- Ex. Project Coordinator on Nematodes, Dr. Raman KumarWalia visited the HRS, Kovvur and observed the present ongoing experiments on 15.12.2018.

Dr. James George, Project coordinator, AICRP on tuber crops visited Horticultural Research Station, Kovvur on 6.1.2019 and reviewed the progress of ongoing experiments under AICRP on tuber crops.



- Dr. B.V.K Bhagavan, PS (Hort) & Head attended as an Expert member of the selection committee for conducting interviews for the selection of Research Associate (Horticulture) on 21.03.2019.

Student's visits

- Eighty second year B.Sc (Ag.) students along with Dr. Srinivasa Raju, Assistant Professor (Hort.) visited Horticultural Research Station Kovvur on 09.04.18 as a part of their exposure visit. Dr.K.Ravindra Kumar, Scientist (Hort.) explained about the cultivation practices for tissue culture banana and tuber crops.
- 53 Students of Sri Krishnadevaraya College of Horticultural Science, Anantapuram visited HRS, Kovvur on 17.05.2018 as part of their educational tour. Dr.K. Ravindra Kumar, Scientist (Hort.) and Dr. R. Naga Lakshmi, Scientist (Hort.) briefed about the ongoing research activities, achievements and commercial multiplication of banana through tissue culture.
- Students of 2nd year B.SC (Agriculture) of Agricultural College, Rajamahendravaram accompanied by teaching faculty visited HRS, Kovvur on 15.6.18 as a part of their educational tour. Dr. K. Mamatha, Sr. scientist (Hort.), Dr. R. Naga Lakshmi, Scientist (Hort.) and Dr. K. Ravindra Kumar, HRS, Kovvur explained about the ongoing research programmes in banana and tuber crops and tissue culture propagation in banana.
- Eighteen numbers of final year B.Sc. (Hort.) students from College of Horticulture, Venkataramannagudem, DrYSRHU were attached to HRS, Kovvur under RAWEP programme and were allotted in Pasivedala, Malakapalli and Kalavalapalli villages of West Godavari District on 20.7.2018.
- Fifty three agricultural polytechnic students from Sri Chegondi Venkata Hara Rama Jogaiah Educational Society visited Horticultural Research Station, Kovvur on 20.8.18. Dr. R. Naga Lakshmi, Scientist (Hort) and Dr. K. Ravindra Kumar, Scientist





(Hort) explained about various research programmes and ongoing programmes at HRS, Kovvur.

- Dr. K. Mamatha, Senior scientist (Hort), HRS, Kovvur explained about the identification of nutrient deficiencies, pest and diseases in tuber crops to RHWEP students allotted to HRS, Kovvur on 21.8.18
- II year BSc (Hort) students of College of Horticulture, Parvathipuram visited HRS, Kovvur as a part of their educational tour on 25.8.18. Dr. R. Naga Lakshmi, Scientist (Hort) and Dr. K. Ravindra Kumar, Scientist (Hort) explained about banana, tubercrops, turmeric, tuberose and tissueculture production of banana respectively at HRS, Kovvur.
- III year B.Sc, Microbiology students of St. Theresa's college, Eluru visited HRS, Kovvur as a part of their educational tour on 7.9.18. Dr.K.Mamatha, Sr. Scientist (Hort) and Sri. CH.S. Kishore Kumar, Scientist (Pl. Path.) explained about various research programmes, tissue culture propagation in banana. Demonstrated the explant preparation in banana.
- Dr. K. Mamatha, Senior Scientist (Hort), HRS, Kovvur explained about recording of meteorological observations to the RHWEP students allotted to HRS, Kovvur on 25.9.18.
- Seventy 2nd Year B.Sc Agriculture students from KadiriBaburao College of Agriculture from Prakasam district visited HRS,Kovvur on 14.2.19 as a part of their educational tour. Dr K. Mamatha Senior Scientist (Hort), Dr R. Naga Lakshmi, Scientist (Hort),Dr.K. Ravindra Kumar, Scientist (Hort) and Sri Ch.S. Kishore Kumar, Scientist (Pl. Path) explained about production technology of banana tuber crops and tissue culture technology.

CITRUS RESEARCH STATION, PETLUR

- All Teaching and Non Teaching participated and celebrated the 72nd Independence day at CRS, Petlur on 15-08-2018.
- All Teaching, Non-teaching Staff & Time scale workers of Citrus Research Station, Petlur celebrated the "Constitution day" on 26th November 2018 and paid tributes to Dr.B.R.Ambedkar for his invaluable efforts.
- All Teaching, Non- teaching Staff & Time Scale workers celebrated "Republic Day" on 26th January, 2019 at Citrus Research Station, Petlur.
- Dr.B.Sathya Narayana Reddy, Special officer & Director of Education (Rtd.), UHS, Bagalkot and Dr. P. Karthik Reddy, Asst. Professor, SVAC, Tirupati visited CRS, Petlur on 28.02.2019.

HORTICULTURAL RESEARCH STATION, ANANTHARAJUPETA





Padmashri. Dr. K.L. Chadha as a Chairman along with Dr. B.M.C. Reddy, Ex. Vice Chancellor, Dr.Y.S.R.H.U, Dr. Prakash Patil, Project Co-ordinator, AICRP (Fruits), Dr. J. Dileep babu, Director of Resaerch, Dr.Y.S.R.H.U. and other QRT members visited HRS, Anantharajupeta on 05-04-2018 to monitor the progress of AICRP (Fruits) projects on 05-04-2018. The team inspected the research blocks and has given valuable suggetions to the Scientists to improve the quality of resaech to benefit the farming community.

HORTICULTURAL RESEARCH STATION, DARSI



Dr. M. Mutyala Naidu, Senior Scientist (Horti.) & Head attended to meeting on Ulavapadu Mango at AP Secretariat, Amaravati along with Director of Research, Dr. YSRHU, VR Gudem.Sri. Chiranjiv Choudhary, Honourable Vice Chancellor, Dr. YSRHU, Dr. J. Dilip Babu, Director of Research, Dr. YSRHU Participated in meeting on Ulavapadu mango at AP Secretariat, Amaravati.

HORTICULTURAL RESEARCH STATION, VIJAYARAI

Under AICRP on Palms, NRCOP-4 was identified for release under the name of Godavari Swarna for commercial cultivation in Andhra Pradesh during the 28th Annual Group Meeting, Coimbatore.

HORTICULTURAL RESEARCH STATION, V.R.GUDEM

1. Paid up trials:

Dr. V.S.L. Saranya, Research Associate (Ento.) conducted paid up trial on

- Efficacy evaluation of Tetraniliprole 120 G/L + Thiacloprid 360 G/L w/v SC in Brinjal.
- Evaluation of bio-efficacy and phtotoxicity of BAS 325 01 I against spodoptera and diamondback moth of cabbage.
- Evaluation of bio-efficacy and phtotoxicity of BAS 306 02 I 240 SC (Chlorfenapyr 240 SC) against spodoptera and diamondback moth of cabbage.
- Evaluation of bio-efficacy and phtotoxicity of BAS 450 01 I 300 SC against leaf miner pest of cucurbits.
- Evaluation of bio-efficacy and phtotoxicity of BAS 450 01 I 300 SC against thrips of cucurbits.
- Evaluation of bio-efficacy and phtotoxicity of BAS 306 02 I 240 SC (Chlorfenapyr 240 SC) against mites of brinjal.

Dr P. Rama Devi, Senior Scientist (PP) conducted paid up trial on





- Evaluation of bioefficacy of BAS 71700 F 125 SC (Fluaxapyroxad 75g/l + Difenconazole 50g/l) against early blight in tomato
- Evaluation of bioefficacy and phytotoxicity of Pyraclostrobin 4% + Dithianon 12% against early blight in tomato
- Evaluation of bioefficacy of BCS CS 55621 SC 20G/l against downy mildew of cucumber
- Evaluation of bioefficacy and phytotoxicity of Pyraclostrobin 4% + Dithianon 12% against downy mildew of cucumber

2. External funded Projects:

RKVY project:

- Dr. P. Rama Devi, Principal Investigator monitored the sale of bio-fertilizers and supervised the installation of equipment for liquid bio-fertilizer production, solid packing machine and bottling unit under strengthening of Bio-fertilizer production unit.
- Dr. P. Rama Devi, Principal Investigator, monitored the production of 38.974 tonnes biofertilizers worth Rs. 15,58,960/- which was supplied to the Department of Agriculture.

3. Centre of Excellence for Protected Cultivation (CEPC) :

- Dr M. Ravindra Babu, Senior Scientist (H), has taken up vegetable seedling production at Hitech Nursery under Centre for Research and Development at Dr YSRHU Campus, Venkataramannagudem since 2016.

S. No	Crop	No of seedlings produced in 2018-19
1	Watermelon seedlings	29,68,994
2	Muskmelon seedlings	77,140
3	Tomato seedlings	1,46,667
4	Brinjal seedlings	50,961
5	Chilli seedlings	4,70,176
6	Capsicum seedlings	2,915
7	Marigold seedlings	1,44,121
8	Chrysanthemum cuttings	15,340
9	Other seedlings	5,654
	Total	38,81,984

MANGO RESEARCH STATION, NUZVID





- Attended Pre ZREAC meeting at Guntur on 06.04.18
- Attended ZREAC meeting at Anakapalli on 13.04.18
- Presented the work done report for the year 2017-18 and tentative technical programme of work for the year 2018-19 and budget review meeting at Examination hall, Dr.YSRHU,V.R.gudem on 17.04.18 to 20.04.18
- As per memo no.4153 / training/Res.1/2018,dt.31.05.2018 of the Director of Research, Dr.YSRHU, V.R.Gudem attended the Mango Festival exhibition organized by the Dept. of Horticulture for 2days on 2.6.18 & 3.6.18 at Vijayawada Sidhardha hotel management collages
- As per memo no. 4304 / Spl.cell / 2018, dt.30.05.2018 of the Registrar, Dr.YSRHU,V.R.Gudem attended NAVA NIRMANA DEEKSHA (NND) PROGRAMME AT Mylavaram on 04.06.2018
- As per memo no. 5151 / Res.1/ 2018,dt.23.06.2018 of the Director of Research, Dr.YSRHU, V.R.Gudem attended in the Eruvaka Purnima Festival organized by the Department of Agriculture at Vijayawada on 28.06.2018
- As per memo no. 6530 / Dr.YSRHU / Research / 2018,dt.28.07.2018, of the Director of Research, Dr.YSRHU,Venkataramannagudem attended as member in committee constituted by the NHB to visit the Mango orchards in Ulavapadu area, Prakassam District of Andhra Pradesh from 30thjuly to 3rd Aug -18
- Audit for the year 2017-18 was done by State audit officers on 18.09.2018
- As per memo no.9/COH/VRgudem/UG Acad/2018,dt.5.11.2018, of the Associate Dean, Dr.YSRHU, Venkataramannagudem, allotted RHWEP students for the first time to Mango Research Station, Nuzvid.
- Sri Padmanabhanaidugaru, Board member, Visited Mango Research Station & Horticulture polytechnic, Nuzvid on 11.11.18
- Sri. Chiranjiv Chowdhary, I.F.S., Hon'ble Vice chancellor, Dr. YSRHU Venkataramannagudem, visited Mango Research Station & Horticulture polytechnic, Nuzvid on 19.11.18
- Dr.A.Sujatha, Dean of Students Affair, Dr.YSRHU,Venkataramannagudem visited Mango Research Station & Horticulture polytechnic, Nuzvid on 20.11.18
- Hon'ble Agriculture,Horticulture & Sericulture minister Sri.Somireddy Chandra Moham Reddy, Sri. Chiranjivchowdary, I.F.S., Hon'ble Vice – chancellor, Dr..B.Srinivasulu, Registrar and University Heads, attended Horticulture Polytechnic college in connection with inauguration of girls hostel & boys hostel and visited exhibition conducted by RHWEP students at MRS, Nuzvid on 30.12.18
- Dr.G. Sravanthi, Scientist, (Ento.) MRS, Nuzvid, visited Coconut research station, Ambajipeta for explaining, developing and mass culturing of spiralling whitfly predator *Malladaboninensis* on 1.12.18
- Hon'ble Board member Sri.G.Padmanabhanaidugaru visited the Mango Research Station, Nuzvid on 23.01.2019





- Dr.R.Rajya Lakshmi, Scientist (Hort) & Head, Dr. B.K.M.Lakshmi, Scientist (Pl.Patho) MRS, Nuzvid. As per Lr.no.919/Res.1/Training/2019,dt.05.02.19. Proceeded to Garikapadu to attended the exposure visit Skill Training of Rural Yuth (STRY) – ‘Mango grower’ organised by Agriculture Skill council of india at KVK,Garikapadu on 20.2.19
- As per memo.no1626/Res.1/2018, dt.27.2.19 of the Director of Research, Dr.YSRHU, V.R.Gudem, attended as a member of the technical committee meeting conducting by the department of horticulture on Finalization of unit cost and specifications of mango fruit covers at O/o Commissioner of Horticulture, Guntur

MANGO RESEARCH STATION, NUZVID

- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **auction of coconut & write off articles at HRS, Ambajipeta, on 18-10-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to one day **workshop on “Farmer Producer Organization (FPOs) & Tomato Value Chain Intervention” on 24-10-2018** at Padmavathi Mahila University, Tirupati.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **Two day State Level Seminar on “Awareness, Motivation & Technology Transfer for Development of Beekeeping in Andhra Pradesh”** at Dr.YSRHU, Venkataramannagudem on **27&28-10-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **T&V (West Godavari) meetings at KVK,Venktaramannagudem, on 14-11-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **auction of write off articles at Lam farm, Guntur, on 19-11-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **National Soil Day meeting at KVK, Venkataramannagudem, on 05-12-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **T&V (West Godavari) meetings at KVK, Venktaramannagudem, on 14-12-2018.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **Central warehousing corporation meetings, at Tadepalligudem on 23-01-2019** to enlighten on post harvest handling of fruit and vegetables.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **HRS, Ambajijpeton 19-02-2019** to Tender Final Openings.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **T&V (West Godavari) meetings at KVK, Venktaramannagudem, on 24-02-2019.**
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **HRS, Ambajijpet on 27-03-2019** to Tender Final Openings.
- Dr. D.V. Swami, Principal Scientist (Hort.) & Head, attended to **T&V (West Godavari) meetings at KVK,Venktaramannagudem, on 28-03-2019.**



KRISHI VIGYAN KENDRA, VENKATARAMANNAGUDEM

Babu jagjivan ramJyathi Celebration 5th April 2018 at KVK, Venkataramannagudem

Babu jagjivan ramcelebration for the year 2018 of the Krishi Vigyan Kendra, Venakataramannagudem was done at Meeting hall. In this programme, Staff of KVK, farm workers and college students were participated in the program.



Dr.B.R. Ambedkar Jyathi celebration for the year 2018 of the Krishi Vigyan Kendra, Venakataramannagudem was done at Meeting hall. In this programme, Staff of KVK, farm workers and college students were participated in the program



Krishi Vigyan Kendra, Venkataramannagudem distributed one month old Rajasri variety birds to twenty tribal farmers of Jeelugumilli, Buttaigudem & Polavaram mandals. On 24.04.2018 under tribal sub plan as a part of on farm trial. In this programme, Dr. R.V.S.K. Reddy, Director of Extension, Dr. YSR Horticultural University distributed Rajasri variety birds to tribal women to assess the performance of this breed against the country fowls in weight gain and egg laying and disease resistance.

KVK, Venkataramannagudem initiated FLD on kitchen garden kits at Erramalla and Kothagudem villages of Ungaturu mandal on 25.06.18. In this programme 20 kits were distributed to the Kamadenu society women group members later explained the importance of vegetable cultivation to the women. Dr.E.Karunasree, senior scientist and Head and Dr.V.Deepthi, scientist (Agricultural Extension) participated in this programme.



KVK, Venkataramannagudem initiated OFT on introduction of improved paddy variety DRR Dhan-45 in tribal areas of east and west Rekulagunta on 26.06.18. In this programme Dr.V.Deepthi, scientist (Agricultural Extension) explained the package of practices for paddy cultivation to the tribal farmers later distributed the seed to the farmers.

KVK, Venkataramannagudem initiated FLD on 'promotion of short duration red gram variety PRG-176' in tribal areas of KothaPatiseema village of Polavaram mandal on 26.06.18. In this programme Dr.V.Deepthi, scientist (Agricultural Extension) explained the package of practices and pest and disease



management aspects in redgram later seed treatment method demonstration conducted in front of farmers after that seed distributed to the tribal farmers and also collected soil samples from identified fields.

Swachhata Hi Sevaprogramme was initiated at Government school, Venkataramannagudem on 15.09.2018. Importance of cleanliness, Source of drinking water, Segregation of bio degradable waste was explained to the students. In this programme KVK staff participated and cleaned the school premises along with students and teachers. Series of activities related to “Swachhata Hi Seva” were conducted daily at KVK Campus, Government School-PrakashraoPalem, Telikicharla, Kamaiahkunta, Pandugudem, Nutiramannapalem and Doramamidi Villages as per the action plan given by the ICAR-ATARI.



Conducted essay writing, drawing and elocution competitions to the Venkataramannagudem, Telikicherla, Prakasaraopalem school children on 29.09.2018 as a part of Swachhata Hi Sevaprogramme at KVK Meeting hall. About 35 students participated in competitions and the winners will be felicitated during 150th Gandhi Jayanthi celebrations at KVK, VR Gudem on 2nd October.

On 01.10.2018 Dr.A.Devivaraprasad Reddy, Scientist (Fishery Science) and Dr.V.Deepthi, Scientist (Agrl.Extension) conducted Essay and drawing competition to the school children of TWGABS, Nutiramannapalem and Doramamidi students of Buttaiahgudem mandal.



On 02.10.2018 Gandhi Jayanthi celebration and awards ceremony as a part of Swachhata Hi Seva from 15th September, 2018 to 02nd October, 2018 was conducted at KVK, Venkataramannagudem. In this programme Dr.R.V.S.K.Reddy, Director of Extension, Dr.J.Dilipbabu, Director of Research, Dr.D. Srihari, Dean of PG Studies, Dr.M.Gopal, Controller of Examinations, Dr.E.Karunasree, Principal Scientist & Head, Dr.V.Deepthi, Sri G.Shali Raju, Dr.A.Devivaraprasad Reddy, Dr.T.Vijaya Nirmala, Smt.P.SaiSatyanarayanamma, Head Master and teaching staff of Venkataramannagudem, Telikicherla, Prakasaraopalem and other staff of KVK were participated. Programme was started with the invocation and vowed to the Gandhi. Followed by prizes were distributed to



the school children who won in the Essay, Drawing and elocution and staff of KVK for cleanliness drive among staff and laboratory rooms.



Dr. A. Devivaraprasad Reddy, Scientist and Dr. V. Deepthi, Scientist has conducted Essay writing and drawing competition among tribal school children at TWGBS Nuthiramannapalem and Doramamidi on 01.10.2018.

KVK, Venkataramannagudem has celebrated Gandhi Jayathi and Swatchhara he seva on 02.10.2018 in collaboration with TGWBS Nuthiramannapalem. In this program, Sri. Harendra Prasad, IAS, Project Officer, ITDA, K.R.Puram and Dr. R. V.S.K. Reddy, Director of Extension, DrYSRHU, Venkataramannagudem has chief guest and guest of honor. On this occasion, the awards were presented to the winners of the various events conducted by the KVK, Venkataramannagudem. Dr. E. Karunasree, Principal Scientist & Head, Dr. A. Devivaraprasad Reddy, Scientist, Dr. T. Vijaya Nirmala, Scientist, Dr. V. Deepthi, Scientist were participated in this program.



On 12.11.2018, T. Vijaya Nirmala, Scientist (Veterinary Science) KVK, Venkataramannagudem provided bypass fat to the dairy farmers of Manchuvarigudem village, Buttaihgudem mandal to assess the milk production performance of dairy animals as a part of TSP technical program of KVK for the year 2018-19.

On 08.11.2018, Dr. K. Venkata Subbaiah, Scientist (Horticulture) and B. Rupa Devi, Research Associate (Soil Science) distributed need based crop inputs (Vermicompost and Biofertilizers like Azatobacter and PSB) under integrated crop management in cashew. Scientists explained about cashew orchard management to the farmers and more than 30 farmers have participated in this programme.



KVK, Venkataramannagudem distributed vegetable planting material as part of FLD on nutritional kitchen garden at tribal welfare school of Nuthiramannagudem on 15.11.18. In this programme explained the advantages of kitchen garden to the school children. In this programme Dr. V. Deepthi, Scientist (Agril. Extension) and Sri. B. Rupa Devi (SSAC) participated.



Krishi Vigyan Kendra, Venkataramannagudem celebrated the Ambedkar Vardhanti on 06.12.2018. In this program, Dr. R. V. S.K. Reddy, Director of Extension and Dr. A. Sujatha, Dean of Student of Affairs, Dr. M. Venkata swamy, Principal Scientist & Head, PHTRS, Dr. E. Karuna Sree, Principal Scientist & Head, KVK along with the staff of KVK and the Apiary trainees have participated and floral tributes to the National leader.



On 11.12.2018 Sri. G.Shali Raju, Scientist (Entomology), KVK, V.R.Gudem supplied sesame seed Var.YLM - 66 & other critical inputs to the farmers from Gundepalli&Ananthapalli village, Nallajarla Mandal under cluster front Line demonstrations on Oilseeds.



KVK, Venkataramannagudem initiated Cluster frontline demonstration on black gram var TBG-104 for the year 2018-19 Rabi season. Seed treatment chemicals, bio fertilizers, and pre-emergence herbicide were distributed to the farmers of Takkilapadu village of Dwaraka Tirumala mandal on 14.12.2018. In this programme Dr. V.Deepthi, Scientist (Agril Extension) explained improved management practices for blackgram. later demonstrated seed treatment of black gram with carbendizam @ 2.5gm/kg and imadachlopride @ 5ml/kg.

On 24-12-2018, Dr. K. Venkata Subbaiah, Scientist (Horticulture), supplied and transplanted tomato F1 Hybrid Arka Samrat seedlings in Gubbisavarigudem of Buttaiahgudem mandal under KVK technical programs.



Dr. E. Karunasree, Principal scientist and Head, Dr. V. Deepthi, Scientist (Extension), KVK, Venkataramannagudem and Sri. Harindra Prasad, Project office, ITDA, K.R. Puram West Godavari district inaugurated spice mixing unit at ITDA premises for tribal women for creating a self-employment among them on 1-1-2019.

KVK, Venkataramannagudem has started a honey-based products stall on trial basis to get the feedback from the customers at ITDA campus, KR Puram, West Godavari District. The displayed products are dry fruits with honey, Chocolate with



honey, Amla with honey, Lip cream, Vaseline prepared using honey, Honey Soap etc were displayed and sold on 11.01.2019.



On 28.01.2019 G.Shali Raju, Scientist (Entomology), KVK, Venkataramannagudem attended as a resource person to the training programme on Beekeeping organised by Regional Horticultural Training Institute (RHTI), Gopannapalem at Buttaigudem village and explained about scientific beekeeping practices.

V. Gopi, farmer from Ramannagudem established a vermicompost unit with technical support from KVK scientific staff Dr.T.Vijaya Nirmala, Scientist (Veterinary Science) KVK, VR gudem. he is producing vermicompost and using for his own field and also supplying to need farmers on cost basis and also taken this unit as small-scale entrepreneur.



On 6-02-2019 Technical team from NABARD were visited KVK, Venkataramannagudem. In this visit, Dr. E. Karunasree, Principal Scientist and Head along with other teaching staff explained about different demonstration plots of KVK and also Dr. M. Ravindra Babu, Senior scientist (Horticulture) delivered a lecture on different technologies suitable for funding from banks for establishing own enterprise for self-employment for an individual.

KRISHI VIGYAN KENDRA, PANDIRIMAMIDI

Participated in two days National level seminar on Awareness, motivation and technology transfer for development of scientific beekeeping in the country held at Vijairai, West Godavari district.

From 24.03.2018 to 25.03.2018 Dr. S.Adarsha Scientist (Entomology) from Krishi Vigyan Kendra, Pandirimamidi participated in two days National level seminar on **Awareness, motivation and technology transfer for development of Scientific beekeeping in the country** organised by Dabur India Ltd. in collaboration with Dr. YSRHU,



Venkataramannagudem sponsored by National bee board, Govt. of India. An exhibition was arranged at the seminar for explaining the beekeeping activities of Dr.YSRHU Krishi Vigyan Kendras Venkataramannagudem and Pandirimamidi. Sri Chiranjiv Choudary, IFS., Commissioner of Horticulture & VC of Dr.YSRHU addressed about the importance of beekeeping in various crops as chief guest in this program. Dr. RVSK Reddy, Director of Extension, Dr YSRHU, Dr. J.Dilip Babu, Director of Research, Dr YSRHU, Dr. A. Sujatha, DSA, Dr YSRHU, Dr. B. L. Sarswat, Executive Director, NBB, Dr. JLN Sastry, DRDC,



Dabur India Ltd., and successful beekeeper Sri Narasimha Rao attended as guests for this program. Conservation of wild bees, scientific approach in handling wild bees, current problems faced in beekeeping were discussed at the seminar.



On 17.05.2018 Dr. V.Damodar Naidu, Vice Chancellor, ANGRAU visited Krishi Vigyan Kendra, and HRS, Pandiriamamidi. Interacted with scientists of KVK & HRS, regarding the activities and trainings taken up by them, visited demonstration units of KVK& HRS, Palmyra processing unit and appreciated the activities taken by KVK and HRS for the farming community.

On 18.07.2018 Dr.A.Srinivas, Sr.Scientist& Head from Krishi Vigyan Kendra, Pandirimamidi addressed a group of members from Lee Kuan Yew school of Public Policy Asia Competitiveness Institute-Singapore who visited ITDA-Rampachodavaram to know the tribal development activities in the agency area also visited Cage Aquaculture at Bhupatipalem Reservoir, interacted with Tribal Fishermen. Dr.A.Srinivas, Sr.Scientist& Head, explained KVK activities conducted with ITDA-Cage culture, Honey bee units, Cashew grafting, Rubber Processing, Value addition, other income generating activities & presented a brief note to the members. The Singapore members were appreciated KVK activities and expressed that they will support to strengthen the activities in future.



On 08.01.2019, Krishi Vigyan Kendra, Pandirimamidi administrative building (First Floor) was inaugurated by Sri.SomireddyChandraMohan Reddy gaaru, Hon'ble **Minister for Agriculture, Horticulture, Sericulture and Agri-Processing for the State of AP**, Smt.Vanthala Rajeswari, MLA, Rampachodavaram, Sri.Babu Ramesh and Ex-MLA, Sri SeethamSettyVenkateswarlu.Sri.Chiranjiv Chowdary, Commissioner of Horticulture, AP & Vice Chancellor, Dr.YSRHU, Dr.B.Sreenivasulu, Registrar &Dr.R.V.S.K Reddy, Director of Extension, Dr.Dilip Babu, Director of Research, Sri. Narasimhulu, Estate Officer were participated. In this programme Poultry &Osmanabadi Goat Units and Millet Biscuit making Unit and Azolla units were distributed to the tribal beneficiaries through Minister and guests . The dignitaries were visited the exhibition stall arranged on Cashew grafts, Honey beekeeping unit, Soil testing laboratory, Cage Culture and Millet Biscuits arranged by KVK, Scientists and released CD on Jeedimamidi lo antukattupaddathi. Press meet was arranged and Sri SomireddyChandramohanreddy spoke about the Agriculture and Horticulture sector development and praised the activities of KVK, Pandirimamidi which is being done in the agency area.



KRISHI VIGYAN KENDRA, VONIPENTA



On 20.02.2018, the Technical team of KVK, Vonipenta organized 2nd Scientific Advisory Committee meeting. Dr. R.V.S.K Reddy, Director of Extension, Dr. YSRHU attended as Chief Guest and acted as Chairman to the SAC body and addressed the Scientific Advisory Committee members, other Agri and Allied Departmental representatives and farmer friends. Dr. R.V.S.K Reddy stressed the importance of Krishi Vigyan Kendra and its services and activities for the sake of farmers' wellbeing. Dr Chari Appaji, Principal Scientist, ICAR- ATARI, Zone –X, Hyderabad addressed the members regarding importance of Krishi Vigyan Kendra's in doubling farmers income, Integrated Farming System (IFS). During the meeting KVK scientist introduced about the mandate and activities of KVK, Vonipenta and presented the detailed information on agriculture, horticulture and other allied sectors. The KVK team has also presented the discipline wise work done for the year 2018-19 and action plan proposal for the year 2019-20. The SAC members motivated the KVK team by inputting suggestions and discussing the strategies for better work achievements. Later Farmers – Scientists interaction was made to address the problems faced by the farmers in field.

