



ANNUAL REPORT

2008-09



Andhra Pradesh Horticultural University
Venkataramannagudem, West Godavari District – 534 101, A.P.



Foundation stone for Andhra Pradesh Horticultural University building complex was laid by Dr.Y.S.Raja Sekhara Reddy Garu, Hon'ble Chief Minister of A.P. on 1.2.2009 at Andhra Pradesh Horticultural University, Venkataramannagudem.



ANDHRA PRADESH HORTICULTURAL UNIVERSITY, VENKATARAMANNAGUDEM



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APHU, Annual Report, 2008-09

Published by

Dr. S.D. Shikhamany

VICE - CHANCELLOR

Andhra Pradesh Horticultural University

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Dr.S.D.SHIKHAMANY
VICE-CHANCELLOR
Andhra Pradesh Horticultural University



Foreword

I am happy to present the First Annual Report of Andhra Pradesh Horticultural University (APHU). It is a compiled document of the university's activities during the year 2008-09.

Andhra Pradesh Horticultural University was established at Venkataramannagudem, West Godavari District, Andhra Pradesh on 26th June, 2007. Andhra Pradesh Horticultural University second of its kind in the country, established for the benefit of all the stake holders dealing with horticulture and allied sectors like processing industries, landscape designing etc., with the mandate for research, education and extension related to horticulture and allied subjects. The university at present has 4 Horticultural colleges, 5 Polytechnics and 28 Research Stations located in 9 agro-climatic zones of the state.

Andhra Pradesh Horticultural University offers B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture and Landscaping, Spices, Plantation, Medicinal and Aromatic crops. The university runs on the land grant pattern followed in the USA, integrating Horticultural Education, Research and Extension.

With an intension to provide self employment to rural youth and also to make use the services of rural youth, the university has established five horticultural polytechnics to offer two year Diploma in Horticulture.

The Andhra Pradesh Horticultural University is conducting basic, applied, location / region specific and anticipatory research for the overall development of horticultural crops in the state at 28 research stations.

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, *Krishi melas*, *Rythu chaitanya yatra*, *Raithu Sadassulu* and *Adarsha Rythu* programmes.

I take this opportunity to thank the Indian council of Agricultural Research and Government of Andhra Pradesh for their financial and technical support to the university.

I am thankful to Hon'ble members of Board of Management, Academic council, Research and Extension Council for their timely guidance and cooperation extended in the university administration.

I am whole heartedly thankful to university officers, Associate deans, principals, Heads of Research Stations and supporting staff for their cooperation in preparation of the Annual Report. I appreciate the sincere effort of Dr.B.Srinivasulu, Controller of Examinations and the supporting staff for their sincere efforts in preparation of the report.



(S.D.SHIKHAMANY)





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SUMMARY

The Andhra Pradesh Horticultural University (APHU) was established by the Government of Andhra Pradesh with its headquarters at Venkataramannagudem, near Tadepalligudem in West Godavari District, Andhra Pradesh. It is the second Horticultural University in the country. Started functioning with effect from 26th June, 2007, the university was managed by the Agricultural Production Commissioner and Principal Secretary to Government, ATM as the Special Officer supported by an Officer on Special Duty from the Acharya NG Ranga Agricultural University. Three new Colleges of Horticulture, one each at Venkataramannagudem in West Godavari District, Mojerla in Mahaboobnagar District and Anantharajupeta in Kadapa District were started in the 2007-08 academic year. The UG and PG educational programmes being offered at Rajendranagar, Hyderabad under Acharya NG Ranga Agricultural University were also brought into the fold of Andhra Pradesh Horticultural University from 2007-08 academic year onwards.

The Board of Management of the university was constituted on 16th February, 2008 and the first Vice-Chancellor Dr.S.D.Shikhamany was appointed on 26.02.2008. Consequently 28 Research Stations dealing with Horticultural Research were also brought into administrative fold of APHU with effect from 01.04.2008. The Andhra Pradesh Horticultural University started functioning independently from 10.05.2008 onwards at its headquarters at Venkataramannagudem. The University runs on the Land Grant pattern followed in the USA, with emphasis on Education, Research and Extension of Horticulture.

This university offers B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in 1) Fruit science, 2) Vegetable science, 3) Floriculture and Lanscaping and 4) Spices, Medicinal and Plantation crops and Ph.D (Horticulture). The course curriculum prescribed by the IV Deans' committee of Indian Council of Agricultural Research is being followed for the degree programme. Students besides course work, they shall also undergo Rural Horticultural Work Experience Programme (RHWEPP) and 'Hands on Training / Experimental learning of 14 weeks each on specialized subjects, namely, (1) protected cultivation of high value crops (2) post-harvest technology and value addition (3) nursery production and management (4) floriculture and landscape gardening, dealing with commercialization of horticulture in addition to rural training for the award of Bachelor's degree. In RHWEPP the final year students are deputed to stay in villages along with farmers for full one year, where they will interact with farmers of the village, work with them, understand their problem, apply the latest knowledge, acquire necessary skills and gain self confidence. These rural based training programmes i.e., RHWEPP, Hands on Training/ Experimental Learning will be useful to develop the manpower requirement with a different technical expertise in view of the globalization of Horticultural trade and for imparting quality education and training in horticulture to the students to develop into well trained personnel, a part of rural development programme.





With an intention to provide self employment to rural youth, and also to make use the services of rural youth in rural development, the University has established five Horticultural Polytechnics in rural areas to offer two year Diploma in Horticulture. The Horticultural Polytechnics are at Dasnapur (Adilabad district), Madakasira (Anantapur district), Ramachandrapuram (East Godavari district), Ramagirikhila (Karimnagar district) and Kalikiri (Chittoor district).

Ongoing research programmes at 28 Research Stations have been reoriented into eight thrust areas identified based on the present day need. Nineteen 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 scientists are involved in popularizing the proven technologies and improved varieties developed through various extension activities, namely; All India Radio, print and visual media, participation in exhibitions, Krishi Melas, Rythu Chaitanya Yatra, Raithu Sadassulu and Adarsha Rythu Training Programmes.





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. It is the second Horticultural University in the country. Andhra Pradesh being the leader in the production of mango, oil palm, chillies, turmeric, sweet orange, acid lime, papaya and second largest producer of total fruits and spices, richly deserves a Horticultural University to increase the productivity, sustaining the productivity and commercialization of Horticulture in the State. Started functioning with effect from 26th June, 2007, the university was managed by the Agricultural Production Commissioner and Principal Secretary to Government, ATM as the Special Officer supported by an Officer on Special Duty from the Acharya NG Ranga Agricultural University. Three new Colleges of Horticulture, one each at Venkataramannagudem in West Godavari District, Mojerla in Mahaboobnagar District and Anantharajupeta in Kadapa District were started in the 2007-08 academic year. The UG and PG educational programmes being offered at Rajendranagar, Hyderabad under Acharya NG Ranga Agricultural University were also brought into the fold of Andhra Pradesh Horticultural University from 2007-08 academic year onwards. The university has the mandate for research, education and extension related to horticulture and allied subjects.

The Board of Management of the university was constituted on 16th February, 2008 and the first Vice-Chancellor appointed on 26.02.2008. Consequently 28 Research Stations dealing with Horticultural Research were also brought into administrative fold of APHU with effect from 01.04.2008. The Andhra Pradesh Horticultural University started functioning independently from 10.05.2008 onwards as its headquarters at Venkataramannagudem. The University runs on the Land Grant pattern followed in the USA, with emphasis on Education, Research and Extension of Horticulture.

The University is governed by a Board of Management comprising of 21 members headed by the Vice-Chancellor. The Vice-Chancellor is supported by University Officers viz., Registrar, Dean of Horticulture, Director of Research, Director of Extension, 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).

The Registrar has the responsibility of university administration. The Dean of Faculties are responsible for the organization and activities in the concerned faculty. The Director of Research coordinates the planning and execution of research by the University. The Director of Extension is responsible for formulating and functioning of university extension services.

The Dean of Student Affairs looks after the students welfare measures. The Controller of Examinations is responsible for admissions, preparation of academic calendars and conducting of common semester final theory examinations. The Estate Officer is responsible for civil works and maintenance of University buildings and lands. The Comptroller looks after university budget and





financial matters. The University Librarian maintains all the campus libraries and organizes their services. The academic and administrative matters of the constituent colleges are looked after by the respective Associate Deans

This university offers B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in i) Fruit Science ii) Vegetable Science iii) Floriculture and Landscaping and iv) Spices, Plantation, Medicinal and Aromatic crops and Ph.D (Horticulture). The course curriculum prescribed by the IV Deans' committee of Indian Council of Agricultural Research is being followed for the degree programme. Students besides course work, they shall also undergo Rural Horticultural Work Experience Programme (RHWEP) and 'Hands on Training / Experimental learning of 14 weeks each on specialized subjects, namely, (1) protected cultivation of high value crops (2) post-harvest technology and value addition (3) nursery production and management (4) floriculture and landscape gardening, dealing with commercialization of horticulture in addition to rural training for the award of Bachelor's degree. In RHWEP the final year students are deputed to stay in villages along with farmers for full one year, where they will interact with farmers of the village, work with them, understand their problem, apply the latest knowledge, acquire necessary skills and gain self confidence. These rural based training programmes i.e., RHWEP, Hands on Training/ Experimental Learning will be useful to develop the manpower requirement with a different technical expertise in view of the globalization of Horticultural trade and for imparting quality education and training in horticulture to the students to develop into well trained personnel, a part of rural development programme.

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The first Annual Report of APHU presents on overview of the university activities in Teaching, Research and Extension.





II. UNIVERSITY ADMINISTRATION

His Excellency, the Governor of Andhra Pradesh, Sri Narayan Datt Tiwari is the Chancellor of the University.

Dr. S.D.Shikhamany, the first 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 1.

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 APHU 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), the Horticulture industry (2) and State Chamber of Panchayat Raj (1) as well as Horticultural Scientific Community (1). 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 Agricultural and Animal Husbandry are also the Members of the Board of Management of APHU.

Members of Board of Management, APHU

Chairman	Dr. S.D. Shikhamany Vice-Chancellor, APHU
Official Members	<p>Dr.P. Raghava Reddy Vice-Chancellor, ANGRAU</p> <p>Dr. D.V.G.Krishna Mohan Vice-Chancellor, SVVU</p> <p>Dr. S. Chellappa, I.A.S. Agril. Production Commissioner & Principal Secretary to Government, ATM</p> <p>Sri Dinesh Kumar I.A.S. Principal Secretary to Government</p> <p>Sri K. Madhusudhan Rao, I.A.S. Commissioner of Horticulture, Directorate of Horticulture</p> <p>Dr. K. Malla Reddy, Professor (Horticulture) upto 30-9-2008</p> <p>Dr. S. Amarender Reddy, Professor (Horticulture) from 27-11-2008</p> <p>Dr. K. Purushotham, Director of Research, APHU</p> <p>Dr. D.V. Raghava Rao, Dean of Horticulture, APHU</p>





Non-Official Members

Sri Jayarami Reddy, Assistant Professor of Horticulture (Retd.),
Distinguished Horticultural Scientist

Sri Merla Veeraiah Chowdary
Progressive Farmer of Horticulture

Sri H. Venugopal
Progressive Farmer of Horticulture

Smt. M. Sreevani
Progressive Farmer of Horticulture

Dr. Y. Narayana Reddy, Professor (Horticulture) & Head (Retd.)
Progressive Farmer of Horticulture

Sri Tulasi Ramachandra Prabhu
Horticulture Industrialist / Other Entrepreneurs.

Sri J. Devi Prasad
Horticulture Industrialist /Other Entrepreneurs.

**Members of Parliament/
Legislature**

Sri S.P.Y.Reddy
Member of Parliament, Nandyal

Sri Kottu Satyanarayana
Member of State Legislature, Tadepalligudem.

Sri M. Rajasekhar
Member of State Legislature, Chilakaluripeta

Sri Rao Venkata Sujaya Krishna Ranga Rao
Member of State Legislature, Bobbili

Sri Challa Amarnatha Reddy
Member from State Chamber of Panchayat Raj

ICAR Representative

Dr. B. Venkateswarlu, Director, CRIDA from 13.8.2008

Member – Secretary

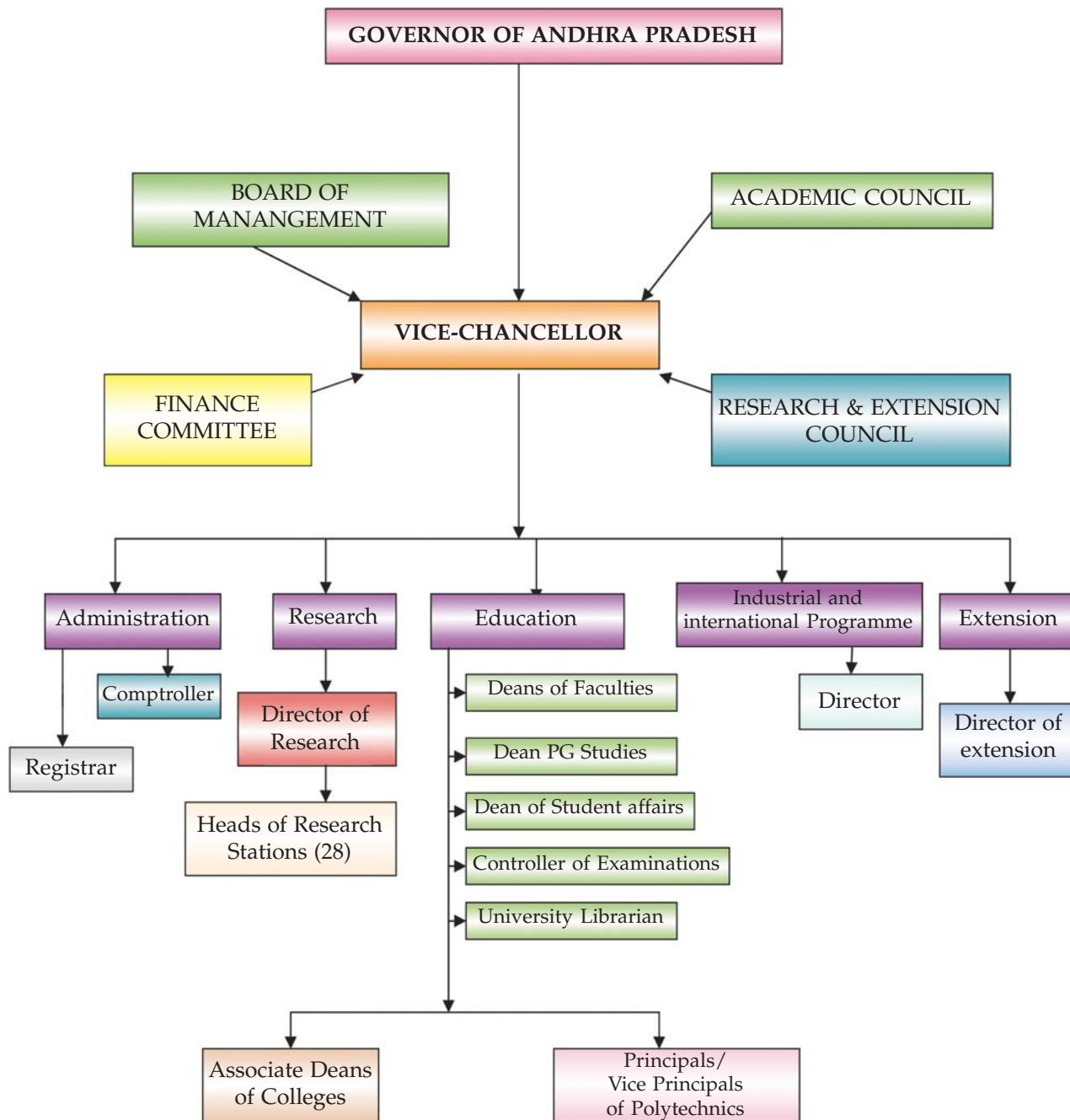
Dr. D.V. Raghava Rao , Registrar i/c. APHU upto 3.9.2008

Dr. P. Suryanarayana Reddy, Registrar, APHU from 4.9.2008





ORGANIZATIONAL STRUCTURE OF ANDHRA PRADESH HORTICULTURAL UNIVERSITY





2. Officers of the University

The list of University Officers for the year is given below

University Officers

Vice-Chancellor	Dr. S.D.Shikhamany
Registrar	Dr. P.Suryanarayana Reddy (04.09.2008 on wards)
Comptroller i/c.	Dr. P.Suryanarayana Reddy (03.10.2008 onwards)
Dean of Horticulture	Dr. D.V.Raghava Rao (17.05.2008 onwards)
Dean of Postgraduate Studies i/c.	Dr. D.V.Raghava Rao (17.05.2008 onwards)
Director of Research	Dr. K.Purushotham (09.05.2008 onwards)
Director of Extension i/c	Dr. K.Purushotham (09.05.2008 onwards)
Dean of Student Affairs	Dr. K.Hari Babu (06.03.2009 on wards)
Controller of Examinations i/c	Dr. R.Chandrasekhar (upto 11.03.2009)
Controller of Examinations	Dr. B.Srinivasulu (from 12.03.2009)
Estate Officer i/c	M. Srimannarayana

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, Controller of Examinations, Dean of Student Affairs, 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 vested with the powers and responsibilities for the academic administration.

Members of Academic Council

Chairman	Dr. S.D.Shikhamany Vice-Chancellor, APHU
Ex-Officio Member Secretary	Dr. P.Suryanarayanareddy Registrar, APHU
Members	Dr. P.Raghava Reddy Vice-Chancellor, A.N.G.R.A.U Dr. D.V.G.Krishna Mohan Vice-Chancellor Sri Venkateswara Veterinary University Dr. D.V. Jayaramireddy Hon'ble Member, Board of Management Sri. H. Venugopal Hon'ble Member, Board of Management





Dr. Y. Narayana Reddy

Hon'ble Member, Board of Management

Dr. D.V.Raghava Rao, Dean of Horticulture, APHU

Dr. K.Purushotham, Director of Research, APHU

Dr. K.Haribabu Dean of Students Affairs, APHU

Dr. R.Chandrasekhar

Controller of Examinations, APHU upto 11.3.2009

Dr. B.Srinivasulu

Controller of Examinations, APHU from 12.3.2009

Dr. K.V.Seshadri Associate Dean

Dr. S.Amarender Reddy Associate Dean

Dr. Syed Ismail Associate Dean

Dr. G. Subbi Reddy Associate Dean

Dr. M.Pratap Professor

Dr. P.Veerannagoud Professor

Dr. A.S.Padmavathamma

Principal Scientist, AICRP on Floriculture

Dr. G.Satyanarayana Principal Scientist (Retd.,)

Dr. Kochu Babu Director, NRC Oilpalm, Pedavegi

Dr. (Smt.) M.Madhavi Associate Professor

Dr. M.Padma Associate Professor

Dr. Tagore Naik Assistant Professor

Sri. K.M.Yuvaraja Assistant Professor

Dr.B.Gautam, Vice-Principal, SKPP Horticultural Polytechnic, Ramachandrapuram

Dr.K. Chandrasekhar Reddy , Vice-Principal, Horticultural Polytechnic, Ramagirikhilla

Dr. M. Ramakrishna, Vice-Principal, Horticultural Polytechnic, Madakasira

Dr. M.Siva Prasad, Vice-Principal i/c. Horticultural Polytechnic, Adilabad





B. MEETINGS OF THE AUTHORITIES OF THE UNIVERSITY

1. Board of Management

The APHU Board of Management met twelve times during the year. The dates and venues of the meetings are given below.

S. No.	Board Meeting No.	Date of the Meeting
1.	1 st Board Meeting	28-3-2008 (Friday)
2.	2 nd Board Meeting	7-5-2008 (Wednesday)
3.	3 rd Board Meeting	8-6-2008 (Sunday)
4.	4 th Board Meeting	27-07-2008 (Sunday)
5.	5 th Board Meeting	25-08-2008 (Monday)
6.	6 th Board Meeting	24-10-2008 (Friday)
7.	7 th Board Meeting	27-11-2008 (Thursday)
8.	8 th Board Meeting	4-12-2008 (Thursday)
9.	9 th Board Meeting	2 -01-2009 (Friday)
10.	10 th Board Meeting	21-01-2009 (Wednesday)
11.	11 th Board Meeting	26-02-2009 (Thursday)
12.	12 th Board Meeting	28-03-2009 (Saturday)

2. Academic Council

The Academic Council normally meets once in six months. First and second academic council meetings were held on 28.6.2008 and 22.12.2008 at Teachers Home, Bhoiguda, Secunderabad.

3. Research and Extension Council (REC)

The 1st REC Meeting was held on 30th October, 2008 at Teachers Home, Bhoiguda, Secunderabad.





C. FACULTY STRENGTH

The cadre-wise strength of teaching staff of APHU is as follows

Faculty Strength in APHU during 2008-09

Teaching Staff	
Post	No.
Professors	19
Associate Professors	34
Assistant Professors	124

Non-teaching staff	
Post	No.
Executive Engineer (Civil)	1
Assistant Engineer	2
Deputy Comptroller	1
Assistant Comptroller	2
Assistant Registrar	2
Superintendents	11
Senior Assistants	11





III. EDUCATION

1. Teaching Institutes

Andhra Pradesh Horticultural University (APHU) offers under graduate programme, B.Sc. (Hons.) Horticulture and M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture and Landscape gardening and Plantation Crops, Spices and Medicinal crops and Ph.D (Horticulture). In addition to these, APHU also offering two years Post-matric-diploma programme.

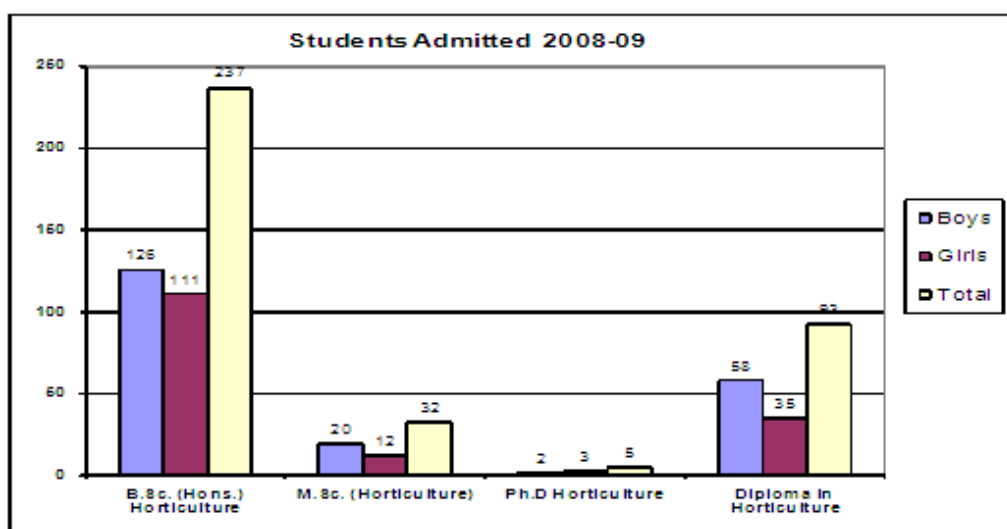
The list of colleges and polytechnics with their location and courses offered is as follows

S.No.	Teaching Institute with location	Courses offered
I.	Colleges of Horticulture	
	i) College of Horticulture, Anantharajupet	B.Sc. (Hons.) Horticulture
	ii) College of Horticulture, Mojerla	B.Sc. (Hons.) Horticulture
	iii) College of Horticulture, Rajendranagar	B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture and Landscaping and Spices, Plantation and Medicinal crops and Ph.D (Horticulture)
	iv) College of Horticulture, Venkataramannagudem	B.Sc. (Hons.) Horticulture, M.Sc. (Horticulture) with specialization in Fruit Science, Vegetable Science, Floriculture and Landscaping and Spices, Plantation and Medicinal crops
II.	Horticultural Polytechnics	
	i) Horticultural Polytechnic, Adilabad ii) Horticultural Polytechnic, Kalikiri iii) SSPG Horticultural Polytechnic, Madakasira iv) Horticultural Polytechnic, Ramagirikhila v) SKPP Horticultural Polytechnic, Ramachandrapuram	Diploma in Horticulture

2. Admission Strength and Out turn of Students

Course	Students admitted (2008-09)		
	Boys	Girls	Total
B.Sc. (Hons.) Horticulture	126	111	237
M.Sc. (Horticulture)	20	12	32
Ph.D Horticulture	2	3	5





3. Scholarships and Stipends

Name of the Scholarship	No. of recipients	Amount received (Rs.)
BC Post Matric Scholarship	128	6,89,139
SC Post Matric Scholarship	37	2,63,885
ST Post Matric Scholarship	14	1,83,794
EBC Post Matric Scholarship	9	42,946
EPC Post Matric Scholarship	3	23,033
Minority Students Post Matric Scholarship	2	2,000
Murali Mohan Charitable	1	25,760

4. Students' Hostels

No. of Hostels			No. of students accommodated		
Boys	Girls	Total	Boys	Girls	Total
8	6	14	154	160	314

5. Students Activities

i) NSS Activities

Name of the college	Camp	Venue	Date	No. of students attended
College of Horticulture Venkataramannagudem	Cooking gas utilization & Safety measures	T.P.Gudem	17-02-2009	250 Nos of Students & 50 nos. of staff





NSS Activities at Horticultural Research Station, Anantharajupet



NSS unit of College of Horticulture, Venkataramannagudem organised blood donation camp

ii) Sports, Games and Cultural Activities

The Students of College of Horticulture, Anantharajpet, Mojerla, Rajendranagar and Venkataramannagudem have participated in Sports, Games & Cultural events conducted by the University at Venkataramannagudem, W. G. Dist from 29-31st March 2009.

The following events were conducted :

- Games-Cricket, Volley ball, Tennocoit, Shuttle badminton
- Sports-Running, long Jump, Javelin throw, shot put
- Cultural events-Singing, dancing, elocution & essay writing.





Inter colligate games, sports and cultural meet 2008-09





IV. RESEARCH

The university is conducting basic, applied, location /region specific and anticipatory research for the overall development of horticultural crops in the state at 28 Research Stations located in 9 agro-climatic regions of the state. The research programmes are covered under three categories namely, Non plan projects/ University projects, ICAR plan projects under All India Coordinated Research Projects and State Horticulture Mission projects.

The research activities of the university are being carried out in 28 research stations with the following thrust areas of research.

1. 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

2. Research Stations

1. Horticultural Research Station, Mallepally, Nalgonda District
2. Citrus Research Station, Petlur, Nellore District.
3. Citrus Research Station, Tirupati, Chittoor District.
4. Floriculture Research Station, Rajendranagar, Ranga Reddy District
5. Grape Research Station, Rajendranagar, Ranga Reddy District.
6. Herbal Garden Scheme, Rajendranagar, Ranga Reddy District.
7. Horticultural Research Station, Adilabad, Adilabad District.
8. Horticultural Research Station, Ambajipeta, East Godavari District.
9. Horticultural Research Station, Anantapur, Anantapur District.





10. Horticultural Research Station, Anantharajupet, Kadapa District.
11. Horticultural Research Station, Aswaraopet, Khammam District.
12. Horticultural Research Station, Bapatla, Guntur District.
13. Horticultural Research Station, Chintapalle, Vishakapatnam District.
14. Horticultural Research Station, Darsi, Prakasam District.
15. Horticultural Research Station, Lam, Guntur District.
16. Horticultural Research Station, Kovvur, West Godavari District.
17. Horticultural Research Station, Mahanandi, Kurnool District
18. Horticultural Research Station, Pandirimamidi, East Godavari District.
19. Horticultural Research Station, Peddapuram, East Godavari District
20. Horticultural Research Station, Rajendranagar, Rangareddy District.
21. Fruit Research Station, Sangareddy, Medak District.
22. Horticultural Research Station, Seetampeta, Srikakulam District.
23. Horticultural Research Station, Venkataramannagudem, West Godavari District
24. Horticultural Research Station, Vijayarai, West Godavari District.
25. JVR Horticultural Research Station, Malyal, Warangal District.
26. Mango Research Station, Nuziveed, Krishna District
27. Horticultural Research Station, Jagtial, Karimnagar District.
28. Turmeric Research Station, Kammarapally, Nizamabad District.

3. Seasonal conditions and crop performance :

Seasonal conditions prevailed in the state during the year 2008-09 on the whole were not satisfactory. The state received an average total rainfall of 815 mm as against normal rainfall of 898 mm, the deficit being 9 per cent. During the south west monsoon the state received an average rainfall of 666 mm as against the normal rainfall of 624 mm, the surplus being 7 per cent. During north east monsoon period an average rainfall of 149 mm was received as against the normal rainfall of 274 mm, the deficit being 45 per cent.

The areas, production and productivity of horticultural crops in Andhra Pradesh during 2008-09 are presented.



Horticultural crops statistics of Andhra Pradesh during 2008-09

Sl. No	Crop Category	Area in ha.	Production in MT
1	Fruits	818068	10495988
2	Plantation Crops	364877	441670
3	Vegetables	230612	3793709
4	Spices	319879	1088081
5	Tuber Crops	20821	416420
6	Cut Flowers	1412	139100
7	Flowers (Loose Flowers)	20252	116238
8	Medicinal and Aromatic Plants	9138	13123
	Total	1785059	16365229 and 1573 Million coconuts & 67.05 Lakh Nos cut flowers

The productivity of major fruit crops viz., mango, guava, sapota, banana and grapes decreased while melons vegetables increased compared to previous year.

4. Salient Research Results During 2008-09

New Crop varieties released during 2008-09

Crop	Variety released	Research Station
Chillies	LCA 353	HRS, Lam, Guntur

Particulars of crop cultures under process of release

Crop	Culture	Developed at	Important features
Acid Lime	Petlur, Selection -1	HRS, Petlur	Tolerant to canker
Betelvine	Swarna Kapoori	Betelvine schemes, Bapatla	Big sized leaves, non-pungent
Chillies	LCA-436	HRS, Lam	High colour value less pungent (Paprika type)
	LCA-424	HRS, Lam	Early bearing (Paprika type)





A. CROP IMPROVEMENT

MANGO

At FRS, Sangareddy, maximum number of fruits tree (1200) and yield (183.60 kg/tree) was also recorded in the variety CISH M2. Maximum cumulative yield (219.60 kg tree) in two bearing years was observed in CISH M2. Maximum fruit weight (385 g) and pulp weight (250 g) was recorded in Arka Puneet. Further, maximum fruit length (16.43 cm) was recorded in Yerra Arati. The TSS was highest in Yerra Arati and Sindhura (23° Brix) followed by Krishna Pasand (21° Brix). Among the three clones, Dashehari-35 was found to be vigorous with maximum plant height (4.10 m), stem girth (0.55 m) and canopy spread (EW-4.13 m and NS-4.46 m).

At HRS, Aswaraopet, among 10 Hybrids tested Neleshan recorded the highest mean yield per tree (147.8 kg.) followed by Mallika (69.87 kg per tree) and the least mean fruit yield was recorded by Hybrid -13 (13.06 kg per tree). Among 10 Table varieties Mahamooda Vikarabad recorded the highest mean fruit yield (48.0 kg per tree) followed by Alphanso (44.12 kg per tree). Among 7 Juicy varieties Navaneetham recorded the highest mean yield per tree (56.33 kg). Among 3 pickle varieties Tellagulabi gave higher yield (87.5 kg) per tree and off season variety Royal Special gave mean fruit yield per tree (16.09 kg).

BANANA

At HRS, Kovvur, Characterization for 102 accessions as per descriptor developed by IPGRI - INIBAP/CIRAD for banana in plant and ratoon crops was completed. One hundred and three (103) accessions were deposited at NRC for Banana (NGIS). Out of which Fifty (50) accessions were allotted the IC/EC numbers and fifty one (51) accessions are still awaited for the allotment of IC/EC numbers.

CITRUS

At CRS, Petlur, About 117 accessions in the Rutaceae family are maintained. It comprised of 20 sweet orange, 6 sour orange, 25 rough lemon, 7 grape fruit, 3 pumello, 7 Rangapur lime, 9 acid lime, 2 lemons, 8 mandarin types, 15 miscellaneous species, 5 genera other than citrus and 10 hybrids. During this year Sunki mandarin types are severely affected by Fusarium root rot disease.

SWEET ORANGE

At HRS, Mallepalle, among 10 different root stock strains tested Sweet orange budded on RGPL Brazil recorded a maximum yield of 100.6 kg followed by RGPL Limerobrazil with 80.75 kg per tree.





GRAPES

At Grape Research Station, Rajendranagar, Madhu Angoor has recorded highest yield (30.48 Kg/vine) followed by Anab-e-shahi (12.99 Kg/vine) in seeded varieties. Kishmish Rozoviz has recorded maximum (28%) raisin recovery. Arkavathi recorded maximum yield (90.29 Kgs/vine) in seedless hybrids. Arka Kanchan has recorded highest yield (51.52 Kg/vine) in seeded hybrids. The seeded variety Italia has recorded yield of 4.47 Kg/vine followed by Red globe (3.82 Kg/vine). The maximum yield of 4.43 Kg/vine was recorded in A 18/3 followed by Red globe (4.3 Kg/vine) with 16.75 & 11.48^o brix, respectively. The maximum yield (14.98 Kg/vine) was recorded in Chenin blanc with 17.3^o brix followed by Shiraj (10.53 Kg/vine with 17.27^o brix). Among the seeded table varieties, Rizamath has recorded highest yield of 33.15 Kg/vine with 15.05^o brix. Among seedless table varieties A 18-3 has recorded highest yield of 17.10 Kg/vine with 18.32^o brix. Among raisin varieties, Pusa seedless has recorded maximum yield of 13.03 Kg/vine with 21.8^o brix. Among juicy varieties Arka chitra has recorded highest yield of 22.78 Kg/vine with 16.0^o brix. Among wine varieties, Shiraj has recorded highest yield of 33.065 Kg/vine with 17.88^o brix.

GUAVA

At FRS, Sangareddy, among the twenty eight accessions of guava maximum fruit yield/tree was recorded in Lucknow-49 (75.21 kg tree) followed by Safed Jam (72.69 kg tree) and Red Fleshed (72.4 kg tree). The Cumulative yields for 6 years showed that maximum yields were recorded in Allahabad Safeda (351 kg tree) followed by Kohir Safeda (337 kg tree) and Lucknow-49 (310 kg tree)

SAPOTA

At HRS, Venkataramannagudem characterized twenty five accessions of Sapota based on morphological, biochemical and isozyme characters. In the varietal trial on Sapota the varieties, namely PKM – 3, PKM – 1 and Singapore are performing well with good consumer acceptance.





At HRS, Aswaraopet, among 11 cultivars tested Cricket ball gave the highest mean no. of fruits (415.61 per tree) followed by Pakala (384.36 per tree). As far as yield concerned Cricket ball recorded the highest yield (29.41 kgs / tree) followed by Dwarapudi (26.04 kg/tree).

POMEGRANATE

At HRS, Anantapur, highest fruit yield per plant was recorded in Ganesh (6.25 kg) which was followed by P-23 (5.5 kg), and G-137 (4.12 kg).

At HRS, Anantapur, highest fruit yield (2.4 kg/plant) was recorded in G -137 followed by Rubi (2.20 kg/plant) among the cultivars tested.

BER

At HRS, Mallepalle, among 9 varieties maximum yield was recorded in Gola variety with 30 kg followed by Karki with with 26.6 kg/tree.

At HRS, Anantapur, highest fruit yield per plant was recorded in, Umran Mundia and Gola (31.86 kg, 31.43kg and 30.8 kg respectively).



CUSTARD APPLE

At HRS, Anantapur, highest fruit yield per plant was recorded in K.E Palli (7.02 kg) which was followed by Phythota No. 4 and K. Dayalaurpalli (4.40 kg and 4.2 kg respectively). Results from new germplasm planted on 18-2-2005.

ANNONA

At HRS, Mallepalle, among 13 collections, maximum yield was recorded in Atemoya X Balanagar with 34.5 kg followed by Atemoya with 31.5 kg/ tree.

TAMARIND

At HRS, Anantapur, highest fruit length was noticed in PU-4 (20.21 cm) followed by PU-13 (19.72 cm), N-1 (18.74) and ATPS-1 (18.36), whereas highest fruit thickness was recorded in PU-10 (1.80cm) followed by PU-12, PU-12, PU 13 and N-1(1.78 cm, 1.72 cm and 1.72 cm respectively). Highest pulp weight was recorded in PU 10 and N-1 (11.7 and 9.64 g respectively) whereas, seed and shell weight was maximum in N-1 (7.93, and 6.51 g respectively). Highest fruit yield was noticed in V-2 (23.5 kg) followed by V-29 (22.6 kg) and N-1 (21.5 kg).



Tamarind varieties

AMLA/AONLA

At HRS, Mallepalle, among 10 varieties of Amla maximum yield of 70.6 kg recorded in Narendra- 10 followed by Narendra-7 with 60.5kg / tree.

At HRS, Anantapur, highest fruit weight (32.372g) was recorded in Neo-4 while highest pulp weight (27.22g) was recorded in Kanchan. Highest TSS percent was recorded in NA-6 (17.2 per cent). Highest fruit yield per plant was recorded in NA-10 (51.25 kg), which is followed by Kanchan (36.50 kg).

OIL PALM

At HRS, Vijayarai, the maximum number of bunches/palm was recorded (8.5) in the cross combination 104 D X 98 P. Lowest number of bunches was recorded in 65 D X 111 P (3.1). The bunch weight was found non significant. The maximum FFB yield/palm was obtained in the cross





combination of 104 D X 98 P (187.8 Kg/palm/ /year or 26.9 T/ha and the lowest yield was recorded in 65 D X 111 P (60.9 Kg/palm /year or 8.7 T/ha). In another trial, the maximum number of bunches per palm were recorded in Costa Rica (5.8) and lowest in Palode (2.7). The maximum bunch weight was recorded in IRHO (20.2) and lowest was recorded in Palode (16.7kg). Maximum yield was recorded in Costa Rica (15.1 T/ha) and lowest of 6.4 T/ha was recorded in Palode.

BETELVINE

At BRS, Bapatla, the performance of GN hybrid over local variety (Tellaku Ponnuru) in local agro-climatic conditions showed that the local variety Tellaku Ponnur performed better in growth and recorded significantly higher yield of 59.40% over GN hybrid. However, GN hybrid recorded significantly higher leaf quality *viz.*, Petiole length (7.30 cm), Leaf size (16.06x12.15 cm), Fresh weight of 100 leaves (345.31g) and Shelf life (13 days).

BLACK PEPPER

At HRS, Chinthapalle, among 22 accessions evaluated, vellanamban recorded maximum No. (1945 No.) of spikes per vine followed by Malamundi (1300 No). In terms of quality parameters maximum spike length recorded in case of Panniyur-3 (13.0 cm) followed by Vellanamban and



Malamundi (12.8 cm). Narayakkodi recorded maximum No. of berries per spike i.e. 87 No. among 22 accessions Evaluated Vellanamban recorded highest fresh yield of 7.8 kg/vine followed by Neelamundi (6.9 kg/vine). Vellanamban recorded maximum dry berry yield (2.7 t/h) followed by Neelamundi (2.37 t/ha). In another trial, Cul-1041 recorded maximum fresh berry yield (526.7g) followed by Cul-5308 9410 g). Lowest yields recorded in case of PRS-21 (23.3 g).

TURMERIC

At HRS, Jagtial, among the all germplasm lines tested CLI-317 recorded highest rhizome yield (20.66 t/ha) followed PTS-52 (17.99 t/ha). In CVT, out of twelve (12) cultures tested, PTS-59 has recorded more fresh rhizome yield (29.9t/ha) followed by NDH-9 (28.8 t/ha) in comparison to



Duggirala red check variety (29 t/ha). In comparative yield trial, out of 10 promising turmeric cultures tested during 2008-09, JTS-401 has recorded high fresh rhizome yield (31.02t/ha.) followed by JTS-402 (29.7 t/ha) The check variety PCT-13 recorded fresh rhizome yield (23.1 t/ha.)

At HRS, Chinthapalle, out of 13 promising turmeric cultivars tested, PTS-34 (75.3 cm) and PTS-39 (74.9 cm) have recorded maximum plant height. Chinthapalli local variety recorded maximum no. of tillers (4.3 no. per plant). Among the 13 varieties evaluated PTS-39 recorded maximum fresh rhizome yield (32.44 t/ha) followed by TCP-11 (27.44 t/ha), whereas TCP-82 recorded the lowest yield (9.44 t/ha). Among the 11 treatments variety Roma recorded maximum plant height (113.4 cm) followed by Megha turmeric (112.5 cm) where as variety suranjana recorded lowest plant height. Variety Rasmi recorded maximum number of tillers per plant (5.3 nos.) Whereas variety Suranjana recorded lowest number of tillers per plant (2.7 nos.).

COOKING MELON

At HRS, Vijayarai, 57 cooking melon germplasm lines were evaluated. Among the lines VC-39 recorded maximum yield (25.7 t/ha) with an average fruit weight of 215.50 g, followed by VC -20. Among the lines evaluated VC -20 has produced maximum no. of fruits/basin (18.7) followed by VC -39.

CHILLIES

At HRS, Lam, 300 chilli germplasm lines were maintained under AICRP (VC) and forty six (46) new entries collected from NBPGR Regional Station, Niglat were evaluated. The dry chilli yield per plant among the accessions varied from 15 g (NGP 31) to 197.0 g (NGP 42). The promising accessions recorded more than 150 g dry chilli yield per plant were NOP 42 (197 g), NOP 18 (189 g) NOP 33 (180 g), NOP 25 (175 g), NOP 43 (165 g), NOP 34 (155 g) and NOP 9 (151 g). Two Capsicum (vegetable chilli) single plant selections viz. LCC-1 (1200 g/ plant) and LCC-2 (1440 g/ plant) were made from NOP 46 had performed well and found adaptable to our locality.

At HRS, Lam, among the hybrids tested CH HYB/8 recorded the highest dry chilli yield (81 q/ha) and found significantly superior to all the other hybrids tested including checks.

At HRS, Lam, In preliminary yield trial on hot pepper only one entry viz., LCA-679 recorded significantly highest dry pod yield of 4616 kg/ha over the check LCA-334 (3801 kg/ha). In advanced





yield trial on hot pepper the entry LCA-625 recorded significantly highest dry pod yield 6132 kg/ha, followed by LCA-620 (5872 kg/ha) over the check LCA-334 (4706 kg/ha).

PAPRIKA

At HRS, Lam, in Preliminary Yield Trial Paprika the entry LCA- 503 recorded significantly highest dry pod yield 4332 kg/ha followed by LCA-480 (4102 kg/ha) over the check LCA-436 (3117 kg/ha). In Advanced Yield Trial Paprika the entry LCA- 442 recorded significantly highest dry pod yield 5192 kg/ha followed by LCA-445 (4950 kg/ha) over the check LCA-436 (3776 kg/ha).

TOMATO

At HRS, Mahanandi, tomato varieties tried under poly house conditions with determinate type (3 varieties) and indeterminate type (2 varieties). Among 5 varieties, Abhinava (determinate type) showed better performance pertaining to fruit characters i.e weight of single fruit (74.85 g), length of the fruit (13.23 cm) and diameter of the fruit (18.21 cm) while Hamsa samole (indeterminate type) recorded fruit weight (44.17 g), fruit length (6.92 cm) and fruit diameter (11.62 cm). In another trial "minimization of fertilizer usage through fertigation and foliar application in tomato" with PKM-1, treatment plot recorded yield of 8.62 t/acre while the control plot registered 6.41 t/acre and yield was increased significantly with the increase in treatment application.

At VRS, Rajendranagar, Determinate AVT - II, DVRT - 2 © recorded higher yield (409.29/ha) followed by VTG-86 (350.09/ha) when compared to other two checks.

BRINJAL

At VRS, Rajendranagar, improved Bhagyamati with green calyx was found superior to Bhagyamati with regard to morphological and yield characters and recommended for minikit testing.

BHENDI

At HRS, Vijayarai, among the elite bhendi lines evaluated IC 128089 has recorded highest yield (6.80 q/ha) where as VB-6 recorded lowest yield (3.07 q/ha). Almost all the elite lines were found susceptible to YVMV disease.



At HRS, Lam, in Bhendi hybrid trial IET, the highest yield (127.5q/ha) was recorded by HYB-7 and found significantly superior to both the checks tested. It was followed by HYB-6 with 112.3 q/ha, HYB-3 with 111.4 q/ha and HYB-2 with 110.7 q/ha. In Bhendi hybrid trial A VT -2, the highest yield (113.7q/ha) was recorded by AROH-465 and was found significantly superior to both the checks tested. It was followed by Surya with 109.3 q/ha and AOH-23 with 108.3 q/ha.



Field experiment on INM Bhendi at HRS, Mahanandi

BEAN

At VRS, Rajendranagar, out of 24 germplasm lines screened against soil salinity and alkalinity the line RCT - 24 recorded highest germination (93.75%) on s2 (highly alkaline and highly saline soil).

At VRS, Rajendranagar, out of 50 lines characterized and evaluated, the lines RCT -28, 52,65,68, 69, 71,73 & 74 were count to be promising.

TUBER CROPS

At HRS, Kovvur, among the non-irritant types, Gajendra has recorded a highest yield of 42.44 t ha⁻¹ followed by accession AC-24 (41.08 t ha⁻¹) and AC - 4 (41.01 t ha⁻¹). Among the irritant types, AC- 36 recorded maximum yield of 37.75 t ha⁻¹.

COLOCASIA

At HRS, Kovvur, among the short duration group Kadma local (27.98 t ha⁻¹) has recorded the highest cormel yield per hectare followed by KCS-3 (26.47t ha⁻¹). In medium duration group CA.9 has recorded the highest cormel yield (25.65 t ha⁻¹ followed by Satamukhi (21.59 kg), while among long duration group KCS-2 has recorded highest cormel yield of 29.35 t ha⁻¹ followed by No-48 (28.86 t ha⁻¹).





At VRS, Rajendranagar, among eight entries tested against local, high (IET Co- 06) cormel yield was recorded in KCS - 3 (18.5 t/ha) followed by RNCA -1 (16.2 t/ha) whereas the lowest yield was recorded in 1G Col - E -8 (11.0 t/ha)

DIOSCOREA

At HRS, Kovvur, Tallapalem has recorded highest yield of 27.28 t ha⁻¹ followed by DA-317 with 20.86 t ha⁻¹.

AMORPHOPHALLUS

At HRS, Kovvur, Gajendra (local check) has recorded the highest yield of 48.09 t ha⁻¹ which is significantly superior to all the other accessions.

COLOCASIA ESCULENTA

At HRS, Kovvur, among the entries, KCS 2 has performed better and recorded higher yield of 28.06 t ha⁻¹ and it is on a par only with Satamukhi (26.01 ha⁻¹).

SWEET POTATO

At VRS, Rajendranagar, germplasm of sweet potato (158 no.) and colocasia (99no) are being maintained at main center. Colocasia selection, RNCA -1 was recommended.

At VRS, Rajendranagar, among the seven varieties tested during kharif SV - 71 have recorded highest tuber yield (12.1 t/ha) followed by RNSP -1 (11.8 t/ha). The harvest index was also in promising entries ranging from 50.35 to 53.87 per cent.

CASSAVA

At VRS, Rajendranagar, the highest tuber yield of 27.78 t/ha recorded with Ci -823 followed by MNGA-1 (25.80 t/ha) over the check variety H-165 (21.81 t/ha).

At VRS, Rajendranagar, six entries were tested. The entry TCH-2 recorded significantly highest tuber yield of 28.43 t/ha followed by H-740 / 92 (28.13 t/ha) and the check (H-165) recorded 21.60 t/ha.

At HRS, Peddapuram, the highest fresh tuber yield was recorded in Ci- 823 (33.8 t/ha) followed by 4-2(32.9 t/ha) and Cm 69-1(33.3 t/ha). However, the yield is on a par with check TCH-2 (33.3 t/ha). All most all test entries are susceptible to CMD and the per cent incidence ranged between 3 to 100. The highest no of tubers per plant and fresh tuber yield was recorded in H-740/92(7.5 and 35.1 t/ha respectively. However the yield is on a par with Ci-848(33.8 t/ha) and check varieties H-165(35.0 t/ha) and TCH-2(34.9 t/ha).





XANTHOSOMA

At VRS, Rajendranagar, among the six varieties tested, KVV Xa -2 recorded highest cormel yield (5.3 t/ha) followed by KKV Xa -4 (3.9 t/ha)

AMORPHOPHALLUS

At VRS, Rajendranagar, a total of eight entries along with the check (Gajendra) were evaluated during the period under report. The variety released from ANGRAU i.e., Gajendra recorded significantly higher corm yield of 52.45 t/ha.

AGAKARA

At HRS, Aswaraopet, Pentalobed type recorded the highest mean number of fruits per vine (105) and mean yield (1.7 kgs)

RIDGE GOURD

At VRS, Rajendranagar, out of 6 germplasm lines evaluated LA-74 found promising with respect to yield and quality.

ASH GOURD

At VRS, Rajendranagar, AVT - II among the entries tested, Indu recorded significantly higher yield of 317.7 / ha followed by IVAG - 90 (286.0 q/ha).

PUMPKIN

At VRS, Rajendranagar, AVT-II, IVPK-72 recorded significantly higher fruit yield (285.59 / ha) & was on a par with PPU - 72 (273.7 q/ha)

COWPEA

At HRS, Lam, in varietal trial on vegetable cowpea A VT -1, 3 entries viz. ACP-1, Ankur Gomti and IVRCP-6 were evaluated against two checks viz. Arka Garima and local. The highest yield (40.7q/ha) was recorded by Ankur Gomti and was found significantly superior to all the other entries tested. It was followed by IVRCP-6 with 33.3 q/ha and found to be early. The increased yield in Ankur Gomti could be attributed to relatively greater pod size coupled with more number of seeds/pod. The increased yield in IVRCP-6 could be attributed to greater pod size and pod weight

IVY GOURD (*Coccinia grandis* L)

At HRS, Lam, 71 entries were collected from coastal and Rayalaseema regions of Andhra Pradesh i.e. parts of Krishna, Prakasam, Nellore, and Kurnool districts. Among the 24 accessions,





PSR 12236, PSR 12207 and PSR 12267 were found promising and recorded an yield of 11.39, 11.17 and 11.07 kg/vine respectively in ratoon crop.

CORIANDER

At HRS, Lam, among the entries evaluated, LCC-147 recorded highest single plant yield (11.13 g) followed by LCC-194 (10.41 g), LCC-195 (10.15 g), LCC-246 (9.47 g) and LCC-256 (9.20 g) which are on par with each other and significantly superior to the best check Sudha (5.12 g). In IET on Coriander, LCC-238 recorded significantly highest yield of 1387 kg/ha followed by LCC-242 with 1352 kg/ha and LCC-237 with 1328 kg/ha which were superior over check Sadhana (974 kg/ha). In CVT on Coriander, the entry, LCC-216 recorded highest yield (1363 kg/ha) followed by LCC-170 (1359 kg/ha) and LCC-212 (1352 kg/ha) which were on par with each other and significantly superior to the check Sudha (1225 kg/ha).

At HRS, Lam, in a trial on off-season production of coriander leaf, six genotypes were evaluated under three different kinds of shade nets i.e. 35%, 50% and 75% and control conditions. Among the shade nets evaluated, maximum green yield was recorded in 50% shade net (8.17 t/ha) which is significantly superior to all other treatments. This is followed by 75% shade net (6.1 t/ha) and 35 % shade net (7.01 t/ha). The control plot recorded only 0.132 t/ha.

FENUGREEK

At HRS, Lam, in CVT on Fenugreek, among the twelve entries evaluated from different sub centers FGK-22 (466 kg/ha), FGK-18 (423 kg/ha), UM-361 (398 kg/ha) and FGK-19 (362 kg/ha) recorded significantly higher yield than the check LS-I (359 kg/ha).

AJOWAN

At HRS, Lam, among seventeen accessions evaluated, highest yield was recorded in LTa-36 (1083 kg/ha), L Ta-28 (973 kg/ha) and L Ta-30 (925 kg/ha) which are on par with each other and significantly superior to the check Lam Selection-I (681 kg/ha).

GLADIOLUS

At ARI, Rajendranagar, Out of 43 varieties of gladiolus evaluated, Super star, Bindiya, Shubnam, IIHR hybrid-87, and yellow fril were the early flowering ones (50-55days) . Sagar, Urvasi, Pure Yellow, Punjab Dawn were the late flowering ones (90-100 days) Plant height was maximum In Bindiya, Sylvia-2, Shagun, Shagun-I, Chandini, Plant art, and Sadabahar(Above 70cm). The varieties Sylvia. Suchitra, American Beauty, Acc 0.2A and Kumkum appeared to be dwarf (less than 50 cm) Spike length and no. of florets were maximum in Darshan, Sagar, Plantart, Arun, Yellow pril and shagun. NO. of florets increased with spike length. Floret size was maximum with Pure yellow, Arun, Swarnima, Hybrid-I 0, IIHR Hybrid -87 and Aldrion.

At HRS, Pandirimamidi, Gladiolus [*Gladiolus byzantinus*] varieties differed significantly for plant height, spike length, number of florets and number of corms / plant. Plant height was significantly highest (1.07 m) in yellow Frill variety compared to the least in Chandini variety (81





cm). Spike length was also highest in Yellow Frill variety (49 cm). Number of florets per spike however was highest in Jyotsuna (17 Nos) followed by yellow frill (15 Nos).

CHRYSANTHEMUM

At ARI, Rajendranagar, in germplasm collections 201 lines were evaluated for their performance. The days taken by the cultivars for their first bud appearance ranged between 50 to 99 days, spray length from 3.9 to 33.2cm. Comparatively Cv. Raichur with 5.6 flowers/spray had the advantage over the other collections in having extended period of flower supply for 81 days recording 180 flowers/plant. The individual flower weight was reasonably less with local bottom (0.5g) while the parameter was maximum with HCC-25 (3.4g).

CARNATION

At ARI, Rajendranagar, Significant differences were observed among the varieties for all the characters studied. The variety Tempo (70.5 cm) followed by Malaga (65.5 cm) recorded maximum plant height. In respect to days required for flower bud initiation, Corsa, the red coloured variety is early to initiate the bud (84.5 days) and it also took less number of days from bud initiation to flowering (15.8 days). Regarding the floral characters, maximum flower diameter (5.73cm) was noted in the variety Gaudina. Flower stalk length, was maximum in the variety Tempo (64.5cm). Significantly maximum number of flowers per plant was observed in Gaudina (6.8). Calyx splitting, a major disorder in carnation, was medium in in the cultivars Nabilla Viking, yellow.com and Gaudina.

At ARI, Rajendranagar, out of ten carnation varieties evaluated for their performance, Maximum plant height was recorded in gaudina and Firato whereas no.of flowers per plant and size of the flower were more in gaudina and Master. Corsa was early to open followed by Kiro and Master. Calyx splitting was low in all the varieties whereas it was medium in gaudina.

TUBEROSE

At ARI, Rajendranagar, 11 germplasm lines were evaluated, out of which 7 are of single flowered types and 4 are of double types. Among the singles, early flowering (60.50 days) was noticed in Rajath rekha followed by Prajwal (62.43 days). The duration of flower availability was extended up to 161.17 days in Hyderabad single. Regarding floral characters, in Shringar floret length and floret diameter waere maximum whereas nO.of florets were more in Phule Rajni (32.53) followed by Rajatha Rekha. (31.67). Among doubles, early flowering and extended period of flower availability was noticed in Hyderabad double (66.50 days and 167.33 days resp). Large sized bud and floret was observed in Suvasini and Hyderabad Double and were on par. With each other.

At ARI, Rajendranagar, among the eight varieties evaluated. Hyderabad Double (76.17 days) and Calcutta double (71.17 days) were the early flovvering ones. Whereas Suvasini (91.33 days) and Shringar (86.67 days) were the late flowering ones. Duration of flowering was highest in Hyderabad double (160.00 days) followed by Hyderabad single (155.33 days). Weight of spike (91.60g) maximum in Hyderabad Double followed by Hyderabad Single (89.17) and no.of flowers / spike were maximum single followed by Suvasini.





CUT FOLIAGE AND FILLERS(ASPARAGUS, GYPSOPHILA, FERNS AND PHILODENDRON)

At ARI, Rajendranagar, five varieties of philodendron sp. Two species of Diffenbachia and two varieties in asparagus were collected and planted in pots on 17.03.2009 to study their performance as cut foliage and fillers. Since they are newly planted their performance for their suitability to cut foliage and fillers will be studied in future course during the forthcoming season.

MARIGOLD

At HRS, Mahanandi, among 7 varieties of marigold tested, the variety Indus Yellow-II recorded more flower yield (13.40 t/ha) and the variety Pusa Basanti Gainda registered flower yield of 10.42 t/ha when compared to other varieties. Lowest yield was noted from the variety local orange (8.0 t/ha).

MEDICINAL PLANTS

At BRS, Bapatla, Eleven clones of *Acorus calamus*, ten clones of *Solanum nigrum* and thirteen clones of *Tinospora cordifolia* were collected from various parts of state, maintained and evaluated for their morphological and agronomical traits.

CINNAMON

At HRS, Pandirimamidi, among growth parameters recorded I- 63 attained maximum plant height (4.13 m) and plant spread (3.40 m E-W & 3.80 m N-S). During September 2009 bark will be extracted.

PALMYRAH

At HRS, Pandirimamidi, among the accessions of 1991, accession 8/91 was found superior in all parameters. In 1993 block accession 17/93, accession 36/1994 block, accession 50/95 in 1995 block, accession 58/98 in 1998 and accession 66/99 in 1999 block, accession 84/00 in 2000 block, accession 120&12901 in 2001 block, accession 132/02 in 2002 block and accession 165/03 in 2003 block were found superior over others in growth parameters. IC numbers from (IC 566871 to IC 566879) have been allotted by the NBPGR for all 9 accessions collected during survey taken up in Salem in 2008.

TAPIOCA

At HRS, Peddapuram, among the non bitter accessions, the entry KPSLO1/92 recorded highest fresh tuber yield (25.9 t/ha) followed by KPSLO3/92 and ARK-D with 24.7 t/ha. No of tubers per plant ranged between 5 and 9 and the starch content ranged between 21.0 to (ARK-A) to KPSLO 5/92(29%). Among the bitter entries, PDP-7 and PDP-8 recorded the highest fresh tuber yield (37.0 t/





ha) followed by TCH-2(35.2 t/ha). No of tubers per plant ranged between 5.7 and 8.3 and starch content varied between 18.2((H-165) to 26% (TCH-1).

PLANTS YIELDING ECONOMIC FOREST PRODUCE

MYROBOLON

At HRS, Pandirimamidi, in myrobolon maximum plant height and spread recorded in ACC-2 (8.95 m, 5.28 m E-W&5.68 N-S) where as highest yield (1.33 kg) recorded in ACC-1. In markingnut maximum plant height recorded in ACC-2 (8.3 m) and plant spread in ACC-1 (3.37 m E-W & 2.87 m N-S). ACC-1 in gumkaraya recorded maximum plant height (7.50 m) and plant spread (6.0 m E-W & 7.4 m N-S). ACC-1 in Nux-vomica (6.41 m; 2.18 m E-W & 2.67 m N-S) was good with regards to height and plant spread. In tamarind ACC-1 recorded maximum plant height (11.98m) and spread (7.47 m E-W & 9.00 m N-S). In Annatto ACC-2 recorded highest seed yield per tree (2.64 kg). ACC-4 in soapnut recorded maximum yield (0.518 kg) .In custard apple highest number of fruits was recorded in ACC-9 (10.5) followed by ACC-10 (10.3). In jambolan ACC-2 recorded highest yield of 18 kg per tree with large fruits.

RUBBER

At HRS, Pandirimamidi, among 4 rubber clones studied, PB 28/59 recorded highest latex yield (6.819 lit/day) and dry rubber (2.867 kg/tree) with highest per cent (42.04 %) of rubber recovery.





B. CROP PRODUCTION

MANGO

At FRS, Sangareddy, Maximum girth (60 cm) was observed in the trees applied with 50kg FYM+ *Trichoderma* (250g). Further, maximum cumulative yield (2005-09) (172 kg tree⁻¹) was observed with recommended dose of fertilizers + *Azotobacter* 250g +50kgFYM. Maximum yield (83.98 kg tree) was recorded in trees treated with Zn (0.5%) + B (0.2%) + Mn (1%) as foliar spray twice (Aug & Oct).

At FRS, Sangareddy, application of 25% organic through FYM + 25% through Vermicompost + 25% through green leaf + 25% in organic manure per age of the tree resulted in maximum number of fruits per tree (83.25), fruit yield per tree (35.66 kg) and TSS (17.65°B). Maximum fruit weight (422.43 g) was recorded in the treatment i.e., 100% organic through FYM.

At FRS, Sangareddy, in root stock trial in mango, significantly maximum plant spread (5.08 m) in N-S direction was observed in Banganpalli scion grafted on Nekkare rootstock and minimum plant spread (2.92 m) was observed in Banganpalli grafted on Mylepelian rootstock.

At FRS, Sangareddy, Significantly maximum yield (133.11 kg tree⁻¹) was recorded in heading back of terminal shoots annually during rest period before the emergency of new growth (floral or vegetative). Maximum cumulative yield (137.84 kg tree⁻¹) (two years) was observed in trees sprayed with KH₂PO₄ (1 %) + KN0₃ (1%) increasing the yield by 48 % over control.

At CRS, Petlur, Neeluddin (356fruits weighing 159 kg.)and Neelgoa (259 fruits weighing128.4kg) among hybrids, Jehangir (417 fruits weighing 216.2 kg.) among table varieties, Peddarasam (114 fruits 58.3 kg.) among juicy variety, Pulihora (335 fruits 88.2 kg) among regular varieties, Allipasand (148 fruits 114.6 kg.) as pickle variety performed well.

BANANA

At HRS, Kovvur, planting of banana with recommended spacing (1.8x1.8m) and application of 100% RDF (control) has recorded highest bunch weight (21.43 kg) and also took shorter duration for flowering. Planting of banana at a spacing of 2 X 3 m with three suckers hill and application of 75% RDF (SiP₃F₂) has recorded highest yield (79.83 t ha) and is on a par with S₂P₃F₂ (78.83 t ha) and S₂P₃F₁ (76.33 t ha) treatments in the plant crop. Planting of banana at a spacing of 2 X 3 m, with three suckers hill¹ and application of 100% RDF (S₁P₃F₁) has recorded highest B/C ratio of 3.00 in ratoon crop.

At HRS, Kovvur, Planting of banana with recommended package of practices (control) has recorded higher bunch weight (20.60 kg) and yield (55.62 t ha⁻¹) in plant crop and found superior over other treatments. In ratoon crop higher bunch weight (24.92 kg) was recorded in L₂T₃and higher yield (62.89t ha⁻¹) in L₂T₁ found all the treatments are on a par with each other.





At HRS, Kovvur, there were no significant differences either in growth or in yield of Karpura Chakkerakeli banana due to different levels of irrigation at different stages, might be due to continuous interference of rains during the growth period i.e. till flowering. Experiment is left for ratoon and it is in harvesting stage.

SWEET ORANGE

At HRS, Mallepalle, the application of NPK 300-70-80 gms /plant recorded maximum plants height 151.2cms and girth of (4.43 cm) and plant spread East – West direction (157.66 cms) and North- South spread of 138.66 cms compared to other organic treatments.

ACID LIME

At CRS, Petlur, in the 9 year old acid lime seedlings, when irrigated at 50% CPE through drip gave almost equal yields per plant per year (1324 fruits weighing 55.26 kg) utilizing 25,386 liters of water as compared to double ring system which requires 34,200 lit. of water. The cumulative yields from the last 6 years are maximum in the 50 % CPE (16172 fruits weighing 618.89 kg.) as against to double ring system of irrigation (15,789 fruits weighing 596.07 kg.)

At CRS, Petlur, acid lime budlings on Gajanamma root stock produced highest yield of 1826 fruits/ plant weighing 67.12 kg. closely followed by Rangapur lime at the age of 11 years under drip irrigation. But the survival % is maximum on Rangapur lime root stock. Survival % of plants on Root stocks namely Calamondin and Sathgudi are very poor. Most of the plants were died due to *ganoderma* root rot. Compared to all the root stocks, Acid lime seedlings survival % as well as its growth and yield performance is comparatively good.

In the 10 year old acid lime seedlings of pre-released acid lime clone Petlur selection-1 application of 2000:400:800g NPK/plant/year produced maximum yields of 1916 fruits/plant/year weight of 74.16kg. followed by 1500:600:800g NPK/plant/year (1857 fruits/plant/year weighing 68.60 kg.)

17 released and pre-released acid lime volume of acid lime have established well and are in pre-bearing stage. Among them L-49, TAL-94-14, TAL-94-2, RHRL-159, CRS-21 and CRS-1 are highly precocious.

GRAPE

At Grape Research Station, Rajendranagar, Petiole analysis at bud differentiation stage revealed that in majority of the vineyards nutritional status was optimum with respect to nitrogen and phosphorus, and high in case of potassium. Hidden hunger of nitrogen was recorded in 31% and of phosphorus in 6% the vineyards grafted on Dogridge. Whereas hidden hunger of nitrogen was recorded in 9% and potassium in 8 % of own rooted vineyards. High in potassium was observed in 19% of grafted and 32% in own rooted vineyards.





At Grape Research Station, Rajendranagar, Irrigation water analysis indicated that the water was safe with regards to pH. The EC of water samples ranged between 0.5 and 2.2 dS/m, while the chlorides were more than 4 meq/lit in 60% samples. The maximum sodium content recorded was 10 meq/lit which within the safe limit. SAR was also within the safe limits. The RSC was safe in majority of the samples.

At Grape Research Station, Rajendranagar, Dogridge root-stock and on own root were statistically on par with each other, but Dogridge root stock has given more yield numerically.

SAPOTA

At HRS, Venkataramannagudem, cumulative fruit yield (2001-2009) was highest (81 t ha⁻¹) when sapota was planted at spacing of 5 x 5 m.

At HRS, Mallepalle, maximum yield of 28.97 kg/ tree was recorded by application of fertilizers 50 % in inorganic form + 25% FYM +25% vermicompost.

POMEGRANATE

At HRS, Anantapur, highest fruit yield (3.9 kg/plant) was recorded in 50% recommended dose of nitrogen at fortnightly intervals followed by 50% recommended dose of nitrogen at monthly intervals i.e 3.47 kg/plant.

TAMARIND

At CRS, Petlur, Among 40 Tamarind clones 13 clones are in pod bearing stage. Under rain fed condition PTS-18 is giving good yields 29 kg pods/plant and it is highly vigorous followed by PTS 31 & 32.

JACKFRUIT

At HRS, Venkataramannagudem, in different grafting methods like veneer, epicotyl, approach and soft wood, the approach grafting (86.0%) was found to be most successful method of propagation.

MISCELLANEOUS FRUITS

At CRS, Petlur, During this year under rainfed conditions Guava L-49 (56.7kg/plant), Kalipatti Sapota (34.5kg/plant), Narendra -7, Aonla (12.5 kg/plant), Stargoose berry (14.5 kg/plant), Tamarind (Uri gam) (13.5 kg pods/plants),and Custard apple (A xB) (10.25 kg fruits/plant) and Jack seedling (kodur selection) (8Nos.lplant) were performed well.





COCONUT

At HRS, Ambajipeta, out of the three major nutrients, Nitrogen and Potassium levels significantly influenced the productivity and nut quality. A fertilizer dose consisting of 500 g N, 320 g P and 1250 g K per bearing tree/year was found to be optimum under alluvial soil conditions. Banana, Cinnamon, Cocoa, Black Pepper, Pineapple, Elephant Foot Yam, Colocasia, Turmeric, Vegetables and Floricultural crops such as Heliconia, Tuberose are identified as suitable intercrops in coconut.

At HRS, Vijayarai, in coconut NPK trial maximum nut yield per palm was recorded with the treatment $N_3P_1K_1$ (352.50 nuts) followed by $N_2P_2K_3$ which has recorded a yield of 128.09 nuts per palm per year. Maximum cumulative nut yield per palm since July 2000 (8years, 8 months) was recorded with $N_3P_1K_1$ (814.60) followed by $N_1P_3K_1$ (680.67).

OIL PALM

At HRS, Vijayarai, yield data revealed that the no. of bunches per palm were found significant with different fertigation treatments. The FFB yield was found significant due to fertigation. The maximum number of bunches were recorded 8.2 *i.e.*, 1200: 600: 2700g NPK through fertigation. 1200 : 600 : 1200g NPK through fertigation has recorded maximum FFB yield of 183.4 kg/palm/year or 26.2 tones per hectare and was on par with 1200 : 600 : 2700g NPK through fertigation 179.3 kg/palm/year or 25.6 t/ha.

PALMYRAH

At HRS, Pandirimamidi, in male, inflorescence sap yield was highest in 50% defoliated palms (343.47 liters), which was followed by 30% defoliated palms (249.425 liters). Relative water content was found lowest (80.02%) in 50% defoliated palms and it was highest in control (84.21%). Length of matured leaf stalk ranged from 1.3m to 1.4 among the treatments.

At HRS, Pandirimamidi, Total yield of inflorescence sap yield in female palms was highest in 50% defoliated palms (343.47 liters) followed by 30% defoliated (304.72 liters). When inflorescence sap yields are verified month wise was followed by March (306.35 liters). Where as, in female palms sap yields were highest in March (459.06 liters), which was closely followed by April month (446.64 liters).

BETELVINE

At BRS, Bapatla Best plant population + recommended fertilizer (Neem cake + Urea (1 : 1) at 200 kg N, 100 kg P_2O_5 and 100 kg K_2O /ha), irrigation 100% replenishment of CPE and application of Bordeaux mixture (4 drenches and 8 sprays) recorded significantly higher yield of 20% over farmers practice.





HOT PEPPER / CHILLIES

At HRS, Lam, the treatment PSB+50%P+Recommended dose of N & K recorded highest dry pod yield/ha (44.5q/ha) and seed yield (16.8q/ha) followed by PSB+75%P+Recommended dose of N&K with dry pod yield/ha C 42.5q/ha) and seed yield (15.2q/ha) and the treatment Azospirillum+75%N+Recommended dose of P&K with dry pod yield/ha (42.4q/ha) and seed yield (15.0 q/ha) as against the control with dry pod yield of 57.4 q/ha and seed yield of 18.7q/ha. There was significant increase in yields with increasing levels of nitrogen applied. Highest yield was recorded with 300Kg Niha (29.4 q/ha) followed by 250Kg N/ha (27.39 q/ha). Significant differences were observed in yield with different foliar sprays. Highest yield was recorded with 0.2% Agromin (32.2 q/ha) followed by 2%KN03 (28.6 q/ha) which was on par with 2% Urea (26.52 q/ha) and 2% DAP (26.3 q/ha). There was significant difference in yield with the treatmental interactions. 300 Kg N recorded highest yield with 0.2% Agromin (41.7 q/ha) followed by 2% KN0₃ (36.5 q/ha).

At HRS, Lam, it was concluded that the cutoff date for Chilli transplanting for economic yields can be fixed as October. The yields will be drastically reduced if sown after December. Chilli does not bear economic yields in the vertisols if transplanted after December till May.

CAPSICUM

At HRS, Pandirimamidi, yield per plant was highest (828.2 g) in hybrid Indra (single plant / hill) with more number of fruits per plant.

FRENCH BEAN

At HRS, Vijayarai, experiment on organic farming in French bean revealed that among the treatments 100% RDF + Inorganic pesticides/fungicides recorded highest yield of 1141.38 kg/ha followed by FYM + Vermicompost + Neemcake + Azatobactor + VAM + Biopesticides (1104.13 kg/ha) with no significant differences between the treatments.

CORIANDER

At HRS, Lam, in an experiment on the efficacy of PGPR on growth and production of Coriander, Seed treatment + Soil application with FK 14 + FL 18 recorded maximum yield (1283 kg/ha) followed by Seed treatment + Soil application with FK14 (1269 kg/ha) which were on par with each other and significantly superior to control (1071 kg/ha).

FENUGREEK

At HRS, Lam, in an experiment on the efficacy of PGPR on growth and production of Fenugreek, Seed treatment + Soil application with FK 14 + FL 18 recorded maximum yield (447 kg/ha) followed by Seed treatment + Soil application with FK14 (428 kg/ha) which are on par with each other and significantly superior to control (334 kg/ha).



ONION

At, HRS, Mmahanandi, the treatment 50% RDF + Neem cake @ 2.5 t/ha + Azospirillum + P.S.B has recorded more bulb yield (22.47 t/ha) followed by the treatment 75% RDF + Neem cake @ 2.5 t/ha + Azospirillum + P.S.B which registered bulb yield of 21.69 t/ha. While lowest bulb yield was obtained from the treatment 15.57 t/ha when the onion crop is tested under Integrated Nutrient Management practices.



At HRS, Mahanandi, in another trial on effect of phosphatic bio-fertilizers on growth, yield and quality in onion variety with Agrifound darkred, the plot applied with treatment (N & K (R.D.F) + 75 % P₂O₅ + V.A.M) gave more bulb yield of 21.07 t/ha followed by the treatment (N & K (R.D.F) + 75 % P₂O₅ + P.S.B) which recorded bulb yield of 20.5 t/ha when compared to other treatments. Lowest yield was found from the treatment (14.78 t/ha).

TUBER CROPS

ELEPHANT FOOT YAM

At HRS, Kovvur, no significant differences in growth and yield of *Amorphophallus* were observed due to different treatments. However the highest cost benefit ratio is recorded with application of 50% RDF (through inorganic) + 25% RDF (through organic)+ 5 kg AMF ha⁻¹ + 5 kg *Azospirillum* ha⁻¹

At HRS, Kovvur, 50 % RDF (50% through organic + 50% through inorganic) in combination with 2 Kg. PSB and 2 kg *Azospirillum*/ha, has recorded higher but it was on a par with other treatments in combination of other biological agents and also with 100% RDF (inorganic).

At VRS, Rajendranagar, Gajendra (local check) has recorded the highest yield of 48.09 t/ha which is significantly superior to all the other accessions.





SWEET POTATO

At VRS, Rajendranagar, maximum tuber yield was recorded in FYM @ 12.5 t/ha.

CASSAVA

At VRS, Rajendranagar, tuber yield was significantly influenced by pruning. None of the treatments i.e varieties, fertilizer levels, time of pruning and there interactions significantly influenced the no. of tuber per plant.

At VRS, Rajendranagar, The treatment RD of FYM+NPK+3% panchagavya spray, 3/4 RD of FYM+N&K+Greenleaf manure (Glyricidia leaf@25 t/ha)+ 3% panchagavya spray and 3/4 RD of FYM+N&K+Greenleaf manure (Glyricidia leaf@25 t/ha) recorded significantly higher tuber yields (28.5 t, 27.6 t and 27.7 t respectively) over the control 22.7 t/ha and 23.1 t/ha.

GLADIOLUS

At ARI, Rajendranagar, in the INM studies on gladiolus, no significant difference was observed in plant height among different treatments. Whereas floral characters differed significantly.

CARNATION

At ARI, Rajendranagar, in the on carnations plant height and length of flower stak did not differ significantly with different treatmental combinations. Whereas flower characters differed significantly.

CHRYSANTHEMUM

At ARI, Rajendranagar, in the INM studies of chrysanthemum, Combined application of 75%RDF, FYM, Vermicompost, Azospirillum and PSB found to improve all characters.

MEDICINAL PLANTS

At BRS, Bapatla, Increased plant height, number of branches and yield with decreased disease and insect reaction were recorded with application of Neem cake 1t/ha and nitrogen level upto 40 kg/ha in *Solanum nigrum*.

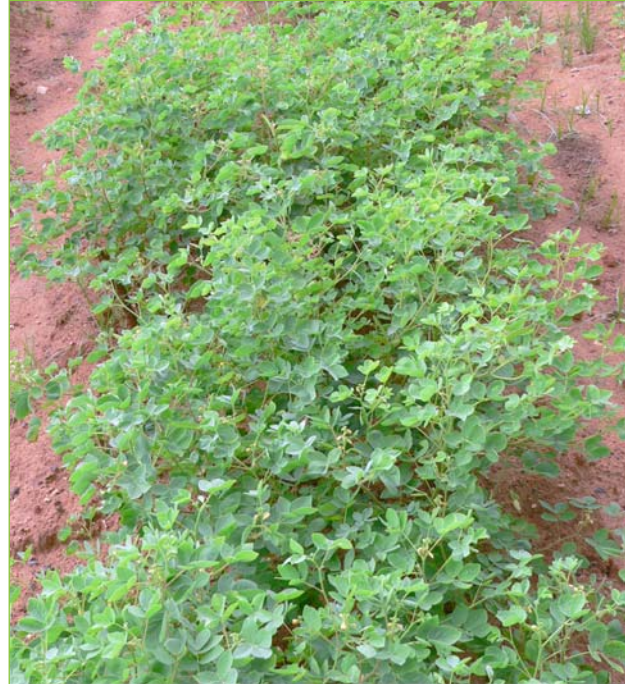
Inorganic fertilizers invariably increased the growth and yield parameter in *Coleus forskohlis*. Further the interaction effect of inorganic fertilizers 30 kg N + 50 Kg P + 50 Kg K/ha and Bio-fertilizers Azospirillum + Phosphobacter each 2kg/ha also significantly increased the growth and yield parameter. However, among organic manures FYM 5t/ha + Vermicompost 0.5t/ha and among Bio-fertilizer Azospirillum + Phosphobacter of each 2kg/ha significantly increased the growth parameters viz. plant height and branches and yield parameters viz. tuber numbers, weight and yield.





Cassia absus

At HGS, Rajendranagar, in soaking of *Cassia absus* seed in Ethrel 100 ppm for 24 hrs recorded significantly highest germination percentage (77.0).



Cassia absus

ASWAGANDHA

At HGS, Rajendranagar, awagandha, the highest yield (4.7 q/ha) was observed in broad casting @ 7 kg/ac Line sowing has resulted in poor yields because of very less plant population.



Aswagandha roots





Coleus forskohlii

At HGS, Rajendranagar, among the different planting dates tested in *Coleus forskohlii*, highest dry tuber yield (14.12 q/ha) was recorded when planting was done during 2nd fortnight of June, followed by 2nd fortnight of July (12.32 q/ha). Planting of Kalmegh was done during highest biomass yield (46.47 q/ha) 2nd fortnight of July recorded which was on par with 1st fortnight of August (43.80 q/ha).



Coleus



Kalmegh

GUGGAL

At HGS, Rajendranagar, in Guggal, during Rainy Season, among the three concentrations of IBA, cuttings treated with IBA 500 ppm recorded the highest percentage of cuttings sprouted (62%) in 20cm long cuttings of followed by IBA 1500 ppm in 30 cm long cuttings. Among the three



Guggal



concentrations of NAA, cuttings treated with NAA 1000 ppm recorded highest percentage of cuttings sprouted (50%) in 20cm long cuttings. During Winter Season, cuttings treated with IBA 500 ppm has recorded the highest percentage of cuttings sprouted (56 %) in 20cm long cuttings followed by 30 cm (34%). Among the different concentrations of NAA, cuttings treated with NAA 1000 ppm has recorded the highest percentage of cuttings sprouted (52%) in 30cm long cuttings followed by 40cm long cuttings (46%).

AJOWAN

At HGS, Rajendranagar, significantly highest seed yield of ajowan was obtained when the crop was sown on 1st September (10.17 q/ha) followed by sowing on 10th September (7.03 q/ha).



Ajowan

ISABGOL

At HGS, Rajendranagar, in the Isabgol, the highest seed yield (8.14 q/ha) was recorded in Vermicompost @ 1.5 t/ha. followed by FYM @ 6 t/ha(6.84 q/ha).



Isabgol





C. ENTOMOLOGY

MANGO

Survey conducted at HRS, Sangareddy, indicated that the maximum incidence of stone weevil ranged from 6 to 40% in orchards while the least incidence was recorded in well managed orchards (6-8%) while in market yards the infestation ranged from 20 to 60%. Application of Imidacloprid (0.005%) followed by endosulfan (0.07%) 21 days after Imidacloprid has controlled the hoppers and the avoidable yield loss was 22.47% over the control. Imidacloprid @0.3ml/lit and Thiomethaxam @0.3gm/lit was effective in controlling hoppers. Highest yield was recorded in Thiomethaxam (76.96 kg/tree). The avoidable yield loss was 49.43%. Module III was not effective in controlling hoppers.

Major pollinating insects were from order Lepidoptera (*Danius flexipus*, Paddy butterfly, blue butterfly) followed by Diptera (*Melipona*, *Syrphus* sp, Housefly, *Coccinella septumpunctata*) and Hymenopterans (Honey bees). Maximum number of pollinators were recorded in the middle of the tree (2-4 mts) during second week of January where maximum flowering was noticed. Spraying of new chemicals such as Imidacloprid, Actara, Clothionidin were found lethal for pollinators.

Among all the treatments (Acephate 75 WP @ 1g/l alone followed by Imidacloprid 200S1 15 days later and spraying Methyl parathion 1 ml/1-2 sprays at 15 days interval followed by Acephate 0.5g/l + Nuvan @ 1 ml control the scales significantly compared to other chemicals.

Spraying of Imidacloprid @ 0.3 ml/lit, Thiomethoxam @ 0.3 gm /lit and Dantop @ 0.3 gm/lit have effectively controlled hoppers. After residue analysis the MRL value for endosulphon 2 ppm as codex has not been fixed for profenophos and Imidacloprid. The fruits may be consumed after 5 days for Imidacloprid and 15 days for profenophos.

GRAPE

At Grape Research Station, Rajendranagar, results revealed that the peak activity of flea beetle (*Scelodonta strigicollis*) was recorded from September to October (36 to 43 std weeks); chaffer beetles (*Holotrichia* sp) from July to August (26 to 34 std. weeks), mealy bug (*Maconellicoccus hirsutus*) from March to April (7 to 14 std. weeks), stem bores (*Coclosterna scabrator*) from February to March (6 to 12 std. weeks). The results revealed that all treatments viz., Fipronil, @ 1ml, Thiamethoxam @ 0.25g; Imidacloprid @ 0.3 ml; Spinosad @ 0.3 ml; Dimethoate @ 2ml per liter of water were very effective against these pests. Among the treatments tried Spirotetramat @ 0.5ml/l is very effective against grape mealy bug, *Maconellicoccus hirsutus* compared to other treatments. Among the treatments tried injection of Dichlorvos @ 2ml /l/ live hole and petrol @ 2 ml/live hole were very effective to control grubs of stemborer.

COCONUT

At HRS, Ambajipeta, screening of neem formulations revealed that Azadiractin 10000 ppm (Econeem plus) either root feeding @ 12.5 ml + 12.5 ml water or spraying @ 5 ml/lit of water was effective against coconut eriophyid mite. Developed light trap technology for monitoring, mass trapping and destruction of coconut slug caterpillar is found as an effective component in the IPM of coconut slug caterpillar



IPM OF COCONUT BLACK HEADED CATERPILLAR



Release of larval parasitoids & pupal parasitoids



Root feeding with monocrotophos

IPM OF RHINOCEROS BEETLE



Arrangement of rhinolure trap



Release of baculovirus inoculated beetles

IPM OF RED PALM WEEVIL



Arrangement of rhinolure trap



Collect and destruct the affected plants in the garden





BETELVINE

At HRS, Bapatla, leaf eating caterpillar complex on Sesbania consists of *Eurema hecabrae*, *Hyposidra successaria*, *maurica testulalis* and *Spodoptera litura* are predominant during October. Stem borer i.e *Azygophleps scalaris* activity is more during September. Red spider mites are dominant during August to November. Spiders and coccinellids are dominant natural enemies in Betelvine ecosystem.



White mite infestation



Red mite infestation

At HRS, Bapatla, IPM module consisting of setting of pheromone traps, topping of sesbania, application of neem oil @0.5% and application of cartap hydrochloride 0.2% and application of *Nomuraea rileyi* 5g/lit proved to be the best in conserving natural enemy population and to decrease the pesticide application compared to farmers practice.

CHILLIES

Studies conducted at HRS, Lam, indicated that abiotic factors influencing pest population revealed that peak incidence of thrips was in the first week of November and temperature ranged from 31-35°C and low relative humidity favors the incidence and multiplication. Mite incidence was more in the last week of December and high relative humidity had positive impact on incidence and multiplication.

Fipronil was highly effective against Blossom midge. Diafenthiuron and Emamectin Benzoate also effective in blossom midge control. Spino sad @ 0.25 ml, Diafenthiuron @ 1.5gm, Chlorfenpyr @ 2 ml and Fipronil @ 2 ml/lit found significantly effective against chilli thrips. Fenpyroximate, Abamictin and Propargite were found to be effective against mite. Spinosad Chlorfenpyr, Emamectin benzoate, Lufenuron were found to be effective in controlling the pod borers.





SWEET POTATO

At VRS, Rajendranagar, lowest infestation of 12.40% was recorded by T9 - Chemical control (check) Dimethoate 0.05% spray at monthly intervals. Among the treatments low infestation of 17.95% with T1 - *Beauveria bassiana* (Bio-power 1.5% WP).

At VRS, Rajendranagar, lowest infestation of 16% was recorded in T8 - Chemical control (check) (Dimethoate 0.05% spray at monthly intervals). Among treatments of other barrier crops low infestation of 19% and 20% were recorded with T4 - Paired rows of sweet potato and one row of yam bean (2:1) and T1 - Border row of yam bean on all sides respectively.

MEDICINAL PLANTS

At HRS, Bapatla, Nematode problem on *Coleus forskohlii*, Thrips problem on *Stevia rubauidiana* and shot hole borer problem on *Embllica officinalis* were noticed in the Jaheerabad mandal of Rangareddy district, during the survey.

No pest incidence was observed on *Acorus calamus*, On *Coleus* leaf webber incidence was observed. On *Tinospora cordifolia* Red spider mite incidence was severe during January and February and continued till April (50 %). On *Solanum nigrum* leaf minor, mealy bugs (*Coccidohystrix insolita*), spotted leaf beetle (*Epilachna vigintioctopunctata*), Aphids (*Aphis gossypii*), Shoot and fruit borer (*Leucinodes orbanalis*) and white fly (*Bemisia tabaci*) were observed. *Tamarixia pookodica* was noticed as dominant egg parasitoid against *Epilachna vigintioctopunctata* pests from *Solanum nigrum* ecosystem.





D. PLANT PATHOLOGY

MANGO

At HRS, Sangareddy, 124 mango cultivars were screened for disease resistance against powdery mildew. Among them most of the varieties showed highly resistance reaction during this year. Azam-US-Samar, Peddarasam, Chilkamukku, Hydersaheb, Kesar, Chandrakaran, Raja Manu and Jalal were recorded highly resistant reaction against powdery mildew (<10%) Commercial varieties Baramasi, Totapuri, Baneshan, Langra, Neelum recorded resistance reaction. (11-20%).

At HRS, Sangareddy, out of 450 varieties more than 40% flowering was recorded in 300 varieties. The Powdery mildew disease incidence ranges from 0 to 60% during this season. However, most of these varieties (146 varieties) recorded zero incidence of Powdery mildew. Of them the important commercial varieties were Alampur Baneshan, Bombay green, F.R.S selection, Guruvam, Himsagar, Neelum x Azam-us-Samar. Powdery mildew disease incidence 10 % was recorded in Totapuri, Kesar and 11-20% (resistant reaction) was recorded in Beneshan, and in juicy varieties Peddarasam, Chinnarasam, Cherukurasam. More than 40% incidence of Powdery mildew was recorded in Neeluddin, Surya Amrutham and Nuzivid thiyamamidi.

At HRS, Sangareddy, among all the chemical treatments Chlorothalonil (0.2%), Companion (SAAF) (0.2%) and Tricyclozole (0.1%) reduced anthracnose disease incidence significantly compared to control.

Studies at HRS, Sangareddy revealed that in coastal region Anthracnose disease incidence was high compared to other regions with a PDI of 8.5 to 55.6 units where the temperature range of 27-34°C with RH of 80-93 percent and 596.1 mm rainfall were recorded. However, in Telangana districts the PDI of anthracnose ranged from 10-32.6 when temperature ranged of 21.4°C to 34.7°C with RH 72-86% and rainfall of 155.14 mm. In Rayalaseema region, PDI of anthracnose was 15-22 in June - September and slightly high in October - January months

At VRS, Rajendranagar, all the entries that were tested for their resistance to Yellow Vein Mosaic Virus (YVMV) in AVT-II, viz VRO - 6 (IIVR), VRO -21 (IIVR), JOL - 2K - 19 (Junagarh), PB - 31-1 (Panthnagar) and KS - 442 (Kalyanpur) exhibited disease incidence of below 5.0 per cent. The susceptible check Pusa Sawani recorded 67.8 per cent disease incidence. However, highest yield was produced by JOK -2K - 19 (95.6 q/ha) followed by incidence. However, highest yield was produced by JOL - 2K - 19 (95.6 q/ha) followed by VRO - 21 (85.6 q/ha).

At VRS, Rajendranagar, amount the eleven treatments evaluated to check the efficacy of seed treatment with fungicides and bio control agents, highest per cent germination (88.0) was recorded in seed treatment with Trichoderma viride @ 5 g/kg seed. Per cent germination in untreated seed was 68.7.





ACID LIME

At CRS, Petlur, spray with fungicides like Benomyl 0.1 %, Bavistin 0.1 %, *cac* 0.25%, Mancozeb 0.25% Mancozeb + Carbendizim (Saaf) 0.2% and Hexaconazole 0.2% completely checked the sour rot disease during February - March harvesting.

At CRS, Petlur, root samples from the rhizosphere soils of acid lime orchards of SPSR Nellore Dist. revealed the presence of *B.theobromae*.

GRAPE

At Grape Research Station, Rajendranagar, Anthracnose was observed from July (43 PDI) to Sept.(7.5PDI) in vineyards after foundation pruning. After forward pruning it was observed from last week of Oct.(8 PDI) to November in traces. Downy mildew : The downy mildew disease started appearing from 1st week of July (17 PDI) to September (68 PDI) after foundation pruning. After forward pruning from 2nd week of November (15 PDI) to December (45 PDI). Powdery mildew: The powdery mildew was observed from last week of July (14 PDI) to September (60 PDI) after foundation pruning. After forward pruning it appeared from 2nd week of December (20 PDI) to March (60 PDI). Seeded varieties – Highest PDI of anthracnose disease was recorded in Katta Kurgan variety (93.33) and lowest PDI was recorded in Pusanavarang variety (22.22). Highest PDI of downy mildew disease was recorded in E12-2 (86.66) and H-23 (86.66) varieties and lowest PDI was recorded in Rubi red variety (62.22). Highest PDI of powdery disease was recorded in Concord (88.88) and lowest PDI was recorded in Symphony (31.67) among the 34 seeded germplasm varieties screened.

At Grape Research Station, Rajendranagar, among seedless varieties highest PDI of Anthracnose was recorded in Perlette variety (89.44) and lowest PDI was recorded in Merbeen seedless (71.66). Highest PDI of downy mildew disease was recorded in Perlette (92.2) and lowest PDI was recorded in K.R. White seedless (77.77) Highest PDI of powdery mildew disease was recorded Perlette variety (92.2) and lowest PDI was recorded in Kishmish Cherny (67.22) and in Mint seedless (67.22) among the 23 seedless germplasm varieties screened.

At Grape Research Station, Rajendranagar, among the tested fungicides Fenamidone 10% + Mancozeb 50% 60 WG @ 1.5 g/l, Azoxystrobin 23SC @ 0.5ml/l, Metiram 55% + Pyraclostrobin 5% 60 WDG @ 1.75g/l and Cymoxanil 8% + Mancozeb 60% 68 WP @ 3g/l were found to be effective in management of downy mildew which were significantly on par with each other in reduction of PDI on leaves and bunches and enhancing the marketable yield per vine which were significantly on par with each other.

At Grape Research Station, Rajendranagar, among the fungicides tested Azoxystrobin 23 SC @ 0.5ml/L and Pyraclostrobin @ 0.5g/L at 105th & 120th Days after forward pruning and 105th day after forward pruning found to be effective in management of powdery mildew which were significantly on par with each other in reduction of PDI on leave and berries and enhanced the marketable yield per vine.





BER

At HRS, Anantapur, correlation studies revealed that PDI is significantly and negatively correlated with maximum and minimum temperature and positively correlated with relative humidity (RH1). During 2008 the disease initiated during 39th standard week and progressed as the season advanced.

At HRS, Anantapur, lowest percent Powdery mildew disease index (30.8) was recorded with 0.1% Karathane alone and which differed significantly with 0.05% Karathane alone and combination of bioagents + 0.05% Karathane. All the four bioagents tested were found on par with each other in reducing the disease incidence.

COCONUT

At HRS, Ambajipeta, standardized procedure for RAMS – PCR for *Ganoderma applanatum* and *G.lucidum* by using *Ganoderma* specific primers and amplified fungal DNA at CTRI, Rajahmundry. Isolated DNA of *G.applanatum* and *G.lucidum*.

At HRS, Ambajipeta, scanning Electron Microscopy pictures of *Ganoderma applanatum* and *G.lucidum basidio* spore structure were taken.

At HRS, Ambajipeta, application of Paste formulation of *Trichoderma viride* on stem bleeding patch was found to be effective when compared to *Psuedomonas fluorescnes*.

At HRS, Ambajipeta, isolated and purified *Phytophthora palmivora*, the causal agent of pod rot of cocoa and bioagent *Trichoderma viride* was found to be effective in suppressing the disease causing agent in *invitro*.

IDM OF BASAL STEM ROT (GANODERMA WILT) DISEASE IN COCONUT



Infected palm



Basal application of talc formulation of *T.viride* (50 g) in combination with 5 kg neem cake/palm/year

IDM OF STEM BLEEDING DISEASE IN COCONUT



Infected palm



Smearing of talc powder paste of *Trichoderma viride*/*T.harzianum*/*T.hamatum* on the bleeding patches on the stem

BETELVINE

At HRS, Bapatla, in rhizosphere competence and survival period of *Trichoderma* spp in betelvine garden trial conducted during 2007-08 showed that significant increase in mean colony forming units/g of rhizosphere soil up to 40 days after addition of talc formulation of *Trichoderma viride* to the soil over initial population

TURMERIC

At HRS, Bapatla, Rhizomes treated with Tricyclozole (0.1% + foliar spray of Tricyclozole (0.1%) on 45 and 90 dap recorded the highest germination (91.7) which was followed by rhizome treatment with Carbedazim +Mancozeb (0.1% + foliar spray of Carbedazim + Mancozeb (0.1%) on 45 and 90 dap (90.1) and lowest rhizome germination was observed in control (78.5).

At HRS, Bapatla, lowest leaf spot lowest per cent disease index was recorded in . Rhizome treatment with Propiconazole (0.1% + foliar spray of Propiconazole (0.1%) on 45 and 90 dap(18.66) which was followed by rhizome treatment with Carbedazim +Mancozeb (0.1% + foliar spray of Carbedazim +Mancozeb (0.1%) on 45 and 90 dap(21.3 both are significantly different with each other. similarly in case of leaf blotch , the lowest per cent disease index was recorded in rhizomes rhizome treatment with Carbedazim +Mancozeb (0.1% + foliar spray of Carbedazim +Mancozeb (0.1%) on 45 and 90 dap(14.6) which was followed by Propiconazole (0.1% + foliar spray of Propiconazole (0.1%) on 45 and 90 dap (18.8)





At HRS, Chinthapalle, among the treatments rhizome treatment with propiconazole (0.1%) + foliar spray of Propiconazole (0.1%) on 45 and 90 DAP gave the maximum percent disease reduction over control (65.4%) followed by Rhizome treatment with Carbendiazim + Mancozeb (0.1%) + Foliar spray of Carbendiazim + Mancozeb (0.1%) on 45 and 90 DAP (58.98%) in case of Leaf spot.

GINGER

At HRS, Chinthapalle, among the treatments Solarized in polyethylene bags for 30 min and treated with Mancozeb @ 0.25%) before planting as seed treatment and soil application as drenching recorded the highest germination (84.31%), more number of tillers (14.31), low disease incidence (11.33 PDI) and highest yield of 3.12 kg per bed.

At HRS, Chinthapalle, among the five treatments ginger seed material treated with Metalaxyl, Mancozeb 72% WP (1.25g/L) recorded germination count of 36.8 clumps out of 40 rhizomes planted, low soft rot incidence (16.2%), leaf spot incidence of 23.2%) and rhizome yield of 2.7 kg per plot.

ONION

At HRS, Mahanandi, under onion crop conducted experiment on Epidemiology of onion purple leaf blotch disease In the experiment, the independent variables Maximum temperature was negatively correlated with disease purple leaf blotch in onion crop and other variables were positively correlated with disease incidence.

TOMATO

At HRS, Mahanandi, in chillies Fusarium Wilt was Observed and recorded 5-10% disease incidence. In Bhendi 20-30% Yellow Vein mosaic and Early blight incidence 20-30% was recorded. In cucumber 30-40% Downy mildew incidence was recorded.

CHILLIES

At HRS, Lam, six entries were screened against Yellow vein mosaic virus (YVMV) with four resistant and one susceptible check. The YVMV incidence ranged from 22.22 to 72.70 %. Out of six entries tested VRO-21 and JOL-2K-19 recorded low YVMV incidence of 23.48 and 32.38 % respectively. With regard to yield, it was ranged from 33.92 to 69.05 q/ha. Significant differences were found among the treatments and JOL-2K-19 recorded highest yield (69.05 q/ha) followed by VRO-6 (54.75 q/ha).

TUBER CROPS

SWEET POTATO

At VRS, Rajendranagar, among tuber crops sweet potato showed low incidence of wilt disease, leaf spot and mosaic disease (5%, 5% and 3% respectively). Sweet potato weevil damage was observed up-to 10 %.





At VRS, Rajendranagar, Mukthakeshi recorded resistant to taro blight disease with 3.75 PDI on leaves and 2.20 PDI on plants and 2.50% tuber rot with 12.70 t /ha of healthy cormel yield. Where as a susceptible check cv Telia recorded the blight incidence upto 28.40 PDI on leaves, 22.20 PDI on plants, tuber rot 5.50% with 11.10 t/ha yield of healthy cormels. When the same susceptible check cv Telia was applied with four different treatments, the results revealed that treatment T2 covering with black polythene recorded the disease of 20.20 PDI on leaves, 14.20 PDI tuber rots 3.50% and yield of 10.70 t/ha, T4 the CTCRI formulation recorded the blight disease of 25.5 PDI on leaves, 18.50 PDI on plants, tuber rot 4.50% and yield 10.30t/ha.

COLOCASIA

At VRS, Rajendranagar, among the cultivars screened, an entry Muktakeshi recorded resistant against the leaf blight and RNCA -1 as moderately resistant to disease. Highest cormel yield of 20.10 t/ha was recorded in RNCA-1 and significantly superior over the other entries tested. The next high yielding entries were Jagital local (18.05 t/ha),

ELEPHANT FOOT YAM

At VRS, Rajendranagar, among seven treatments tested, lowest disease incidence of leaf blight (11.50 PDI) and mosaic disease (7.60 PDI) with highest yield of 46.80 t/ha were recorded with the treatment T6: Use of healthy planting material + tuber treatment with *Trichoderma* +*Pseudomonas* fluorescence @ 5g/kg + soil application of neem cake @ 250g/pit at the time of planting + One foliar spray with neem gold (0.5%) at 60 days after planting; where as control plots recorded 18.9 PDI leaf blight. 10.5 PDI mosaic and 39.6 t/ha yield respectively.

CASSAVA MOSAIC RESISTANT

At HRS, Peddapuram, significantly higher tuber yield was recorded in PDP-8 (32.7 t/ha) followed by PDP-6 (30.1 t/h) and PDP-7 and PDP-5 (29.4 t/ha and 29.0 t/ha respectively). Further the CMD incidence is also very low in these entries.

BLACK PEPPER

At HRS, Chinthapalle, the observations revealed that among the three treatments black pepper vines treated with Potassium phosphonate (0.3%) + *Trichoderma harzianum* before onset of monsoon (May 2nd fortnight), during monsoon (July 1st week) and after monsoon (September 1st fortnight) recorded the less yellowing (11.98%), defoliation (18.64%) and death of vines (7.16%) and more yiled/ vine (3.54 kg) as compared to the farmers practice (1% BM as spraying once after the disease appearance and only to affected vines) with 44.82% of yellowing, 49.62% of defoliation and 12.94% of death of vines.





CROSSANDRA

At HRS, Anantapur, lowest percent wilt (36.8) was recorded with drenching + spraying with carbendazim @ 1g/l followed by application of *Trichoderma viride* through FYM + Neem cake (38.2) which are on par with each other and differed significantly with the control.

MEDICINAL PLANTS

At HRS, Bapatla, in Andhra Pradesh, survey conducted in *Acorus calamus* growing areas of Nalgonda district (2007-08) and Nellore and Vizag districts (2008-09), revealed that rust infection ranged from 1-2 percent and in wildly grown *Tinospora cordifolia* & *Solanum nigrum*, leaf spot was observed.

At HRS, Bapatla, rust on *Acorus calamus*, wilt in *Coleus forskohlii*, damping off in *Solanum nigrum* and leaf spot on *Solanum nigrum*, *Coleus forskohlii* and *Tinospora cordifolia* were observed and isolated.



leaf spot on *Solanum nigrum*



leaf spot caused by *Alternaria tenuissima* on *Tinospora cordifolia*



E. POST-HARVEST TECHNOLOGY

MANGO

At FRS, Sangareddy, maximum storage life (11.25 days) was observed in fruits sprayed with calcium chloride 4% alongwith mulching trees.

COCONUT

At HRS, Ambajipeta, standardized a simple technique for preparation of coconut chips i.e., by steeping the fresh kernel flakes in 60% sugar solution for 3 hours followed by drying at 50 °c for one hour produce crispy white coconut chips with good taste and appearance. The product can be stored up to one month in polythene bags at room temperature.

At HRS, Ambajipeta, standardized a technique for bioconversion of tender coconut waste and coconut coir pith into high quality organic manure. Treating the tender coconut bits or pith with fungal organisms viz., *Pleurotus sojar caju* + *Trichoderma viride* converts the raw material into valuable organic manure within two to three months.

At HRS, Ambajipeta, studies on use of Chemical preservatives for the control of copra rots causing mycoflora confirmed that Menodiane at 500 ppm and benzoic acid 1000 ppm concentration were found to be highly effective.

CHILLIES

At HRS, Lam, to study the effect of chemicals and fungicides individually and in combination as a post harvest spray to hasten up the drying coupled with lower fruit rot in chilli cv. Lam 334, significant differences were observed among the treatments in number of days to drying, fruit rot and quality constituents. Among the treatments, K_2CO_3 2%, $CaCO_3$ 1%, K_2CO_3 0.2 % + Copper hydroxide 0.025 % and K_2CO_3 0.2 % + Propiconazole 0.01 % were found to be significantly superior to control and took 8 days for drying as against 11 days in control. The per cent increase in diseased pods (Fruit rot) was very low in K_2CO_3 0.2 % + Difenconazole 0.005 % with 7.1 %, followed by $CaCO_3$ 1% with 8.5% and were found superior. Significant differences were observed among the treatments in oleoresin and capsanthin content. Among the treatments the highest colour value was recorded in K_2CO_3 2%.

At HRS, Lam, in chilli hybrid Indam 5, significant differences were observed among the treatments in number of days to drying, fruit rot and quality constituents Among the treatments, K_2CO_3 2% and $CaCO_3$ 1 % were found to be significantly superior to control and took 11 days for drying as against 14 days in control. The diseased pods (Fruit rot) was very low in $CaCO_3$ 1% with 9.5%, followed by Difenconazole 0.005 % and Victoria Oil + Difenconazole 0.005 % with 12 % and were found significantly superior to control. Significant differences were observed among the treatments in oleoresin and capsanthin content. Among the treatments the highest colour value was recorded in K_2CO_3 2%.





GLADIOLUS

At ARI, Rajendranagar, the pre-storage pulsing chemicals $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$, 300 ppm and $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$, 300 ppm + GA_3 , 50 ppm in combination with 20% sucrose enhanced vase life of cut spikes of gladiolus. The increase in storage duration beyond an optimum period (3 days) significantly decreased the vase life, longevity of open florets and hastened the opening of basal florets. Harvesting of gladiolus spikes when 1 - 2 florets show colour resulted in better storage parameters.

CHRYSANTHEMUM

At ARI, Rajendranagar, up to 3 days of wet storage in BAP 50ppm enhanced vase life and flower diameter in chrysanthemum. The holding solution of sucrose 2% + $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ 300 ppm envisaged a similar results.

TUBEROSE

At ARI, Rajendranagar, the holding solution of $(\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O})$ increased vase life and flower diameter in cut stems of tuberose. Similarly the refrigerated storage of cut stems of tuberose up to 3 days resulted in prolonged vase life. The other parameters remained unchanged.

CARNATIONS

At ARI, Rajendranagar, the holding solutions of $(\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ 300 ppm + BA) and $(\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ 300 ppm + GA_3) enhanced vase life of cut carnations. Similarly wrapping of cut flowers of carnations in polypropylene enhanced vase life. The pre- storage pulsing solutions T₃ (Sucrose 10% + STS + $\text{Al}_2(\text{SO}_4)_3 \cdot 16\text{H}_2\text{O}$ + Kinetin 25 ppm) resulted in an increase in vase life and flower diameter. The optimum duration of wet storage of cut carnations is about 3 days beyond which the vase life and other storage parameters showed negative trends.





V. EXTENSION

A. Diagnostic visits

Sri S.Pathalingareddy Government Horticultural Polytechnic, Madakasira

Dr.M.Rama Krishna, Vice-Principal, Madakasira, Visited Arecanut and Betelvine gardens at Thamidipalli (v) and Amarapuram (v) in Amarapuram (M) along with the Scientists of HRS, Rekulakunta and Horticulture Officer, Madakasira on 4.7.2009 and suggested improved methods of cultivation.

Horticultural Research Station, Venkataramannagudem

Associated in preparation of action plan for different horticultural crops affected by Krishna river floods occurred during October 2009

Horticultural Research Station, Vijayarai

Dr. V. Vijaya Bhaskar. Senior Scientist (Hort.) has visited several sick horticultural farms and suggested the remedial measures to correct the deficiencies and to control pests and diseases on the crops.

Citrus Research Station, Petlur

Dr. B.Govinda Rajulu, Senior Scientist(Plant Pathology) made 23 Diagnostic visits in various Acid lime & Sweet orange orchads in different mandals of SPSR Nellore dist.

Horticultural Research Station, Ambajipeta

Disaster management: Rendered services and organized campaigns during natural calamities like floods, cyclones in educating the farmers on immediate measure to be taken to minimize the losses and save the crop.

During coconut slug caterpillar outbreaks, campaigns were organized by the scientists and management measures using root feeding, insecticidal spray and light traps was conducted in affected areas of East and West Godavari Districts.

Mango Research Station, Nuzvid

Carried out Diagnostic survey on mango with Scientist (Plant Pathology) , FRS., Sangareddy on 27.10.08 in Nunna, Agiripalli , Nuzvid and Vissannapeta areas





Carried out Diagnostic survey on mango on 24.11.08 in Chatrai, Visinpeta and Tiruvur mandals in Krishna district

Carried out Diagnostic survey on mango on 25.11.08 in Reddy Gudem, Mylavaram and A. Kondur mandals in Krishna district

Carried out Diagnostic survey on Chillies on 6.12.08 along with DATTC Coordinator, ANGRAU in Mylavaram mandal in Krishna district.

Carried out Diagnostic survey on Chillies on 9.12.08 in Gampalagudem Village in Krishna district

Carried out Diagnostic survey on mango on 23.12.08 in Sarpagudem Village in Krishna district

Carried out Diagnostic survey on mango on 7.1.09 in Musunuru and Vattigudipadu Village in Krishna district.



Team of Scientists from FRS, Sangareddy; MRS, Nuzvid and Dr. Sukla, Principal Scientist (Ento) From CISH, Luknow carried out diagnostic visits on mango on 2.2.09 and 3.2.09





B. Training programmes

Conducted training to Adarsa Rytulu as course coordinator from 24.04.08 to 28.04.08 at HNTC, Rampachodavaram and from 17.04.08 to 28.04.08 & 2.05.05 to 14.05.08 at Kalavacherla (Rajahmundry).

R.Naga Lakshmi Scientist (Hort) imparted training to the farmers of Ootla and B. Ramannapalem villages on 'Reguvenation of Cashew'' on 24.09.08.

The scientists of the station also collaborate with the activities of the Department of Agriculture in the district *viz.*, participation in Rytu Chaitanya Yatra, Polallo Sastravettalu and Polam Badi.

Training program on cocoa cultivation was organized in Munganda village and another training program on Slug caterpillar management was conducted.

As a part of exposure visit under ATMA Project, Nellore, the Agril. Department officials along with farmers from Podulakur, Chejerla, Kadalur and Rapur mandals visited CRS, Petlur. Dr. B.G.Rajulu, Smt.G.S.Thanuja explained the research activites to the visitors on 09-02-09.

As a part of course study II year Polythenic students of ANGRAU, Polythencal college, Podalukur, SPSR Nellore Dist. visited CRS, Petlur. Dr. B.G.Rajulu, Smt.G.S.Thanuja explained about the disease and pest identification and their management along with cultivation practices on 18-02-09.

As a part of exposure visit under ATMA Project, Nellore the Agril. Department official along with farmers of Venkatachalem and Nellore rural Mandal were visited CRS, Petlur. Dr. B.G.Rajulu, Smt. G.S.Thanuja explained about the canker tolerant Acid lime Petlur Selection and package of practices of acid lime on 26.3.2009.

As a part of transfer of technology on fruit crops conducted by ANGRAU, ARS, SPSR Nellore - Scientists along with farmers visited CRS, Petlur. Smt.G.Thanuja explained the cultivation, protection aspects and importance of drip irrigation to the farmers . Farmers at Ibrahimpatnam mandal were given training about raising flowers by poly house technology on 10-05-09.

Grape Research Station, Rajendranagar

Dr. G. Ram Reddy, Scientist (Plant Pathology) participated as a resource person in a training programme organized by department of Horticulture, R.R. (Dist.) for grape farmers at Shameerpet, R.R. Dist. on 25-8-08.

Horticultural Research Station, Vijayarai

Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.) has participated in the training programmes organized to the field level workers, A.E.O's, Adarsha Rythus and growers of Horticultural crops and delivered more than 36 lectures on different aspects of Horticultural crops.





Horticultural Research Station, Mahanandi

Participated in station head meeting at Hyderabad dated 11.07.2008

Attended interviews for selection of training assistant and helpers at Horticultural Research Station, Anantapuram dated 17.09.2008 and net work project on proponent

Attended and participated in Orientation training programme on Administrative matters, Financial and maintenance of accounts. to all Heads of research Stations/Schemes and principal Scientists/senior Scientists / Scientists of APHU. Discussed on bills-categories, procedure for preparation, rules & Sanctions and pay Fixations-Automatic advancement scheme on 26.05.2009 to 27.05.2009 at Hyderabad.

Attended monthly T&V meeting at RARS Nandyal and discussed. About the research gaps identified in Horticulture crops.

Participated in State level Seminar on vegetable production conducted by NHRDF Kurnool dated 25 & 26 Feb-2009 and delivered a lecture on integrated disease management in vegetables.

Scientist (Hort) participated in State level Seminar on vegetable production conducted by NHRDF on 04-05-2009 and delivered a lecture on tomato production technology.

Mango Research Station, Nuzvid

Participated as resource person for para extension trainees at Training Centre, Vijayawada organized by Dept of Horticulture, Krishna district on 10.12.2009

Participated as resource person for para extension trainees at Training Centre, Eluru organized by Dept of Horticulture, West Godavari district on 11.12.2009

Participated as resource person for para extension trainees at Training Centre, Vijayawada organized by Dept of Horticulture, Krishna district on 27.12.2009

Participated as resource person on mango rytu sadsu at Visinapeta village organized by Dept of Horticulture on 12.3.2009

Dr. Y Rama Rao, Principal Scientist(Hort) & Head Participated as resource person for Farmers Training Programme, organized by Dept of Horticulture, Krishna district on 27.12.2009.

Horticultural Research Station, Anantapur

Organized 2 training programmes one each at Mahaboobnagar and Anantapur districts under Network Project on Mitigating the bacterial blight disease of Pomegranate in Andhra Pradesh on 10.12.2008 and 11.03.2009.





Herbal Garden, Rajendranagar

Two days awareness and training programme on medicinal and aromatic plants was organized to the farmers of Andhra Pradesh on 25th and 26th September, 11th & 12th November 2008, 17th – 18th December 2008, 23rd & 24th January 2009 and 20th and 21st March 2009 at University Auditorium of Andhra Pradesh Agricultural University and seminar hall of extension education unit.

Farmers from different districts of Andhra Pradesh viz.,Kurnool, Cuddapah, Rangareddy, Karimnagar, Krishna, Prakasam, Nellore, Vijayanagaram, Visakhapatnam, Guntur, Warangal, Mahaboobnagar, Nalgonda and Anantapur etc., About 300 number of farmers were attended the training programmes. The importance of medicinal plants cultivation and future prospects, production technology of Aswagandha, Kalmegh, Coleus, Glory lilly, Sathavari, Phyllanthus, Senna, Decalepis, Podapathri, Stevia and aromatic crops like lemongrass, citronella, palmarosa geranium and davana and marketing avenues for the above crops were appraised by apart from Scientist of Herbal Garden like Resource persons from CIMAP, Dept.of AYUSH and A.P Forest Department have attended and delivered guest lectures. The Chief Executive Officer from State Medicinal and Aromatic Plants Board, Hyderabad has given details about financial assistance offered by the board to the farmers of Andhra Pradesh. An interactive session with marketing agencies has also been organized on the second day of training programme. The farmers were taken to the fields of Herbal Garden where they were shown various medicinal and aromatic plants and their cultivation.





Vegetable Research Station, Rajendranagar

Dr. M. Narayanamma - Participated in the Training Programme at HTI as resource person on 05.08.2008 and delivered lecture on "INM in Vegetables" for the farmers of Siddipet division, Medak District.

Dr. M. Narayanamma - Participated in the Training Programme at HTI, Nampally as resource person on 20.09.2008 and trained the farmers on "Cultivation aspects of Sweet Potato, Colocasia and Elephant Foot Yam".

Dr.R.V.S.K.Reddy - Attended Training Programme to Farmers as resource person on "Water Management in vegetable and Horticultural crops" organized by RARS, Palem on 21-3-2009.

Smt. Veena Joshi - Attended the Training Programme at HTI as resource person on 15.03.2009 and delivered lecture on "Package and practices in Tomato" for the farmers of Jinnaram division of Medak District.

Attended state level seminar on "Sustainable Vegetable Production Post Harvest Management and marketing" as resource person on 25-2-2009 organized by NHRDF at Kurnool.

Dr. R.V.S.K.Reddy - Attended " Saaguku Samayatham" programme in Marpalli mandal of Rangareddy, District in the villages, Kota Marpalli, Siripalli, Veerlapalli and Kothlapur villages on 30-4-2009 as per the instructions of Director of Research, APHU.

Smt. Veena Joshi - Attended " Saaguku Samayatham" programme in Medchal mandal of Rangareddy district in different villages from 30-4-2009 to 10.05.2009 as per the instructions of Director of Research, APHU.

Dr. M. Vijaya - Attended " Saaguku Samayatham" programme in Manchala mandal of Rangareddy district in the villages Nomula, Kanapur, Manchala, Arutla, Chittapur, Thippaiguda, Thallapallegudem, Lingampalle, Cheded, Rangapur, Agapally and Japal villages from 30-4-2009 to 10.05.2009 as per the instructions of Director of Research, APHU.

Attended training programme on "Rainfed tomato cultivation" as resource person at HTI, Nizambad on 19-5-2009.

Dr. M. Vijaya, Dr. M. Narayanamma and Dr. M. Tirupathi Reddy - Attended "Orientation Programme on Administrative and financial matters" on 26-5-2009 and 27-5-2009 organized by AP Horticultural University.

Dr.R.V.S.K.Reddy - Attended "Orientation Programme on Administrative and financial matters" on 28-5-2009 and 29-5-2009 organized by AP Horticultural University.





Fruit Research Station, Sangareddy

Date	Title of Programme	Place /institution conducted	Topic of the Lecture /Lab exercises	Name of the Resource person
5/2/08	Management Practices in Mango and Guava'	Fruit Research Station, Sangareddy/organized by ATMA, Medak district for Siddipet and Dubbaka divisions.	Orchard Management practices in Mango	Dr.A.Bhagwan Dr.A.Girwani Dr.T.Suresh Kumar
6/2/08	Management Practices in Mango and Guava	Fruit Research Station,Sangareddy/ organized by ATMA, Medak district for Sangareddy and Sadashivpet divisions.	Orchard Management practices in Mango	Dr.A.Bhagwan Dr.A.Girwani Dr.T.Suresh Kumar
7/2/08	Management Practices in Mango	Fruit Research Station, Sangareddy/organized by ATMA, Medak district.	Orchard Management practices in Mango	Dr.A.Bhagwan Dr.A.Girwani Dr.T.Suresh Kumar
31/03/2008 & 11/12/2008	Adarsha Rythu training programme	Gajwel, Medak District / Organized by Department of Agriculture, Medak.	Cultivation of Mango and Guava	Dr.A.Bhagwan Dr.T.Suresh Kumar
09/06/2008	Rhythu Sadassu	Siddipet, Medak District / Organized by Department of Agriculture, Medak.	Cultivation of Mango and Guava	Dr.A.Bhagwan Dr.T.Suresh Kumar
05/08/08	Propagation techniques in Fruit crops	Fruit Research Station,Sangareddy/ organized by Hort.Training Institute,Hyderabad for Trainees.	Field demonstration of propagation techniques	Dr.A.Girwani
02/01/09 & 05/01/09	Training for Paraworkers in APMIP	APMIP office Sangareddy	Pest management in fruit crops	Dr.D.Anitha Kumari
21/1/09	Pest management in fruit crops	RHTL, Nizamabad	Pets of fruit crops	Dr.D.Anitha Kumari
2/2/09 to 5/2/09	Pest management in Mango	Agiripally,Nuzivid	Pets of Mango	Dr.D.Anitha Kumari





C. Method demonstrations

- ▲ Conducted method demonstration on multiplication of *Trichoderma viride* to manage dry root rot disease in sweet orange
- ▲ Demonstrations on Integrated Crop Management of Betelvine were taken up in '20' farmers' field of '5' selected villages under Technology Assessment and Refinement for dissemination of Technology.
- ▲ Method demonstrations on preparation of coirpith compost, root feeding technique and management for *Ganoderma* wilt disease of coconut were organized at Mukkamala, Ambajipeta, Irusumanda, Bandarlanka, Narendrapuram, Munganda and Gannavaram villages of East Godavari District.
- ▲ Method demonstrations on management of coconut slug caterpillar through root feeding technique, insecticidal spray and light traps in Sakhinetipalli, Allavaram, Komaragiri patnam and Atryapuram villages of East Godavari District were conducted.
- ▲ Identification of initial stages *offusarium* root rot disease, iron chlorosis and zinc deficiencies in acid lime orchards.
- ▲ Mass production *Tricoderma viride* culture in FYM along with neem cake.
- ▲ Preparation of 1 % Bordeaux mixture and Bordeaux paste.
- ▲ Training and pruning in young pre-bearing and bearing acid lime plants.

Horticultural Research Station, Anantapur

Seven method demonstrations were conducted for the management of bacterial blight in pomegranate under Network Project on Mitigating the bacterial blight disease of pomegranate in Andhra Pradesh.



Pruning pomegranate with disinfected (1% Sodium Hypo chloride)





Severe pruning in infected old gardens



Pasting of cut ends with Bordeaux paste



Burning of Infected twigs and fruits



Preparation of 1% Bordeaux mixture

D. Group discussions

- Dr.K.T.V.Ramana SS (Hort) presented work done report of QRT (2003-2007) at ARS, Ambajipeta from 15.05.08 to 17.05.08.
- Dr. B.V.K. Bhagavan SS (Hort) attended in the rubber committee meeting for planning rubber cultivation in the agency areas of Andhra Pradesh held at APST Cooperative Finance Corporate Ltd, Hydrerabad on 1.07.08.
- Attended to ZREAC meeting at Chintapalli from 30.07.08 to 2.08.08.
- Dr.K.T.V.Ramana SS (Hort) participated in "Discussion meeting on Palmyra" at AC&RI Killikulaam, Tamilnadu from 13.08.08 to 16.08.08.,
- Dr.K.T.V.Ramana SS (Hort) participated in discussion meeting on "Research Priorities for refinement of value addition technologies in Palmyrah" at TNAU, Coimbatore on 29.09.08.
- Senior Scientists (Hort) participated in the discussions on the progress of SHM on 15.09.08 at Commissionarate of Horticulture, Hyderabad.
- Dr.K.T.V.Ramana SS (Hort) presented note on progress of work of AICRP on Palmyrah projects to Project Coordinator, Dr. Arulraj, CPCRI, Kasargod on 20.02.09.
- Participated Seventeenth Group Meeting of the All India Co-ordinated Research Projects on Medicinal & Aromatic Plants held at Kerala Agricultural University, Trichur from 15-18, November, 2008.





- Participated & Presented the Projects 22nd Group Meeting of the All India Networking Research Project on Betelvine held at BCKV, Kalyani, West Bengal during 13-15, December, 2008

Vegetable Research Station, Rajenderanagar

- Scientists of AICRP on Vegetables attended the XXYH group meeting of AICRP on Vegetables at T.N.A.U. from 12-2-2009 to 15-2-2009 presented the work done report of 2008-09 and participated in the technical discussions. The technical programme for the year 2009-010 was finalized.
- Dr. R.V.S.K. Reddy - Attended Zonal Level Discussion on Sate Plan Projects organized by ADR, RARS, Palem at RARS, Palem and presented the work done during 2007-08 on 09.06.2008.
- Dr. R.V.S.K. Reddy - Attended "Group Meeting of Tomato Workers" at IIHR, Bangalore organized by ICAR on 14.06.2008.
- Dr. R.V.S.K. Reddy - Attended farmers meeting on Vegetable Cultivation at Marpally and Mominpet in Rangareddy district on 29.08.2008.
- Dr. R.V.S.K. Reddy - Attended ZREAC, Rabi Meetings of Southern Telangana Zone at Nalgonda on 21.08.2008 and 22.08.2008.

ii) Training programme to Farmers

E. Field days

- ◆ On-farm trials on biocontrol of *Ganoderma* wilt in coconut were conducted in farmers' fields of

Date	Title of Programme	Place /institution conducted	Topic of the Lecture	Participation as
6-6-2009	Training programme in fruit crops	Nizamabad/State Horticulture Mission	Improved package of practices of mango	Dr.A.Bhagwan
8-8-2009	Training programme in fruit crops	Nizamabad/State Horticulture Mission	Improved package of practices of mango	Dr.A.Bhagwan

L.Gannavaram, Vodalarevu, Munjavarapukottu, Appanapalli and Uppalaguptam villages of East Godavari district and demonstrated the technologies.

- ◆ On-farm trials on management of rhinoceros beetle, redpalm weevil and eriophyid mite in coconut were conducted in farmers' fields of Munganda and Vygreswaram villages of East Godavari district and demonstrated the latest technologies.
- ◆ GUAVA DAY on 17-12-2008: Organized /Participated in the Guava day on 17 December, 2008 at FRS, Sangareddy for the benefit of guava farmers of Medak, Ananthapur, Mahaboobnagar and Rangareddy dist. Later a book on Guava Cultivation was released.





F. Field Visits

S.No.	Name of the Teacher	Designation	Particulars	Date of Visit
1	Dr. M. Rama krishna	Vice-Principal	Kuragayala sagulo naru pempakam Avasyakatha	26.06.2009
2	Dr. M. Rama krishna	Vice-Principal	Udhyapantlalo Bindu mariyu Thumpara sedhyam	29.09.2009
3	Mr.R. Preetham Goud	Assistant Professor	Pest and Disease Management in Late sown Groundnut, Redgram and Jowar	01.09.2009
4	Mr.R. Preetham Goud	Assistant Professor	Important techniques to be followed in Mango before flowering stage	16.11.2009
5	Dr.B.V.K. Bhagavan	Senior Scientist (Hort)	Mamidi, jeedimamidi pantallo adhika digubadiki patincha valasina melaina yajamanya paddatulu	22.9.2008
6	Dr. K.T.V.Ramana	Senior Scientist (Hort)	Gladiolus cultivation in agency tract of E.G. District	23.1.2009
7	Dr. P.Babu Ratan	Senior Scientist (Hort)	Sendria Paddatulalo Arati Saagu	19.1.2009
8	Dr. P.Babu Ratan	Senior Scientist (Hort)	Vudyana Pantalu-Sendriya Sagu Paddatulu	26.8.2009
9	K.Uma Maheswari	Scientist (Hort)	Junelo pasupu paina parisodhanalu	20.2.2009
10	K.Uma Maheswari	Scientist (Hort)	Pasupu parisodana karyalayam Prarambam	20.2.2009
11	K.Uma Maheswari	Scientist (Hort)	Prarambhamina pasupu parisodana Karyalayam	20.2.2009
12	K.Uma Maheswari	Scientist (Hort)	Mamidilo antla empika, natlalo jagrathalu	
13	Sri D.Lakshminarayana	Scientist (Hort)	Visaka agency pranthallo sagucheyu sughandha dravyaupu pantala kothala samayamlllo teesukovalasina jagarthalu	20.12.2008
14	Sri M.Ravindra Babu	Scientist (Hort)	Nimma bathai llo malayna yajamanya paddathulu	13.5.2008
15	Dr.N.Rajakumar	Scientist (PP)	Management of Diseases in Turmeric	November, 2008





G. Mass communication

a. Radio Programmes:

Date	Topic	Name of the Scientist	Recorded by
18.4.2008	Constraints for export in chillies and its remedies	Dr.K.Uma Jyothi	AIR, Vijayawada
7.6.2008	Nursery Management in chillies	Dr.K.Uma Jyothi	Phone in live programme at AIR, Vijayawada
23.7.2008	Mirapa Narumalla Yaja Manyam	Dr.P.Venkata Reddy	AIR, Vijayawada
4.8.2008	Mirapasaguyaj amanyam	Dr.S.Surya Kumari	AIR, Vijayawada
13.10.2008	Mirapa Sagu-Yajamanyam	Dr.K.Uma Jyothi	AIR, Vijayawada
11.02.2009	Mirapa lo pootha, panda dashallo asinchu purugulu yajamanya paddathulu	Mrs. P.Vijaya lakshmi	AIR, Vijayawada
19.4.2009	Mirapa yegumathiki Anuvaina Nanyatha Pramanalu	Dr.K.Uma Jyothi	AIR, Vijayawada
08.10.08	Suganda dravyala saagu	K. Giridhar	AIR, Vijayawada
11.6.2008	Mamidi lo kotha anantaram teesukonavalsina jagratalu	Dr.A.Bhagwan	
11.11.2008	Mamidi lo pootasamayamlo Teesukonavalasina Melakuvalu	Dr.A.Bhagwan	
26.4.2008	Pandla Mokkaala Pravardhana Padhathulu	Dr.A. Girwani	
27.10.2008	Pandla thotalalo antarpantala sagu-kothaga naatina thotalalo yaajamaanyam	Dr.A. Girwani	
June, 2008	Sapota Sagulo Melukuvalu	Dr.T.Suresh Kumar	
10.12.2008	Rabi vegetable cultivation	Dr. R.V.S.K. Reddy	AIR, Hyderabad
10.12.2008	"Rabi vegetable cultivation"	Dr. R.V.S.K. Reddy	AIR, Hyderabad
31.01.2008	Pest and Disease Management in Horticultural Crops	Dr.K.Subrahmanyam	AIR, Anantapur
25.12.2008	Pest and Disease Management Techniques in Cheeni, Mango and Vegetables	Dr.K.Subrahmanyam	AIR, Anantapur



**b. Television Programmes:**

Date	Topic	Name of the Scientist	Recorded by
18-6-2008	Micronutrient deficiencies in Mango, Banana	Dr.S.Surya Kumari	ETV Annadata
18-6-2008	Package of practices in Amorphaphallus	Dr.K.Uma Jyothi	ETV Annadata
18-6-2008	News and views on ETV "Annadata" programme	Dr.Surya Kumari & Dr.K.Uma Jyothi	ETV Annadata
30-6-2008	Chilli nursery management	Dr.P.Venkata Reddy	"DD8", Hyderabad
8-7-2008	Micronutrient deficiencies	Dr.S.Surya Kumari	ETV Annadata
-	Direct sown chilli crop - Management	Dr.S.Surya Kumari	ETV Annadata
-	Varieties of chilli	Dr.S.Surya Kumari	ETV Annadata
-	Pasupu sagu	Dr.P.Venkata Reddy	"DD8", Hyderabad
15-7-2008	Nursery Management in chill	Dr.K.Uma Jyothi	ETV Annadata
15-7-2008	Seed treatment in chillies	Dr.K.Uma Jyothi	ETV Annadata
5-8-2008	Nursery Management-in chillies	Dr.K.Uma Jyothi	Dooradarsan, Hyd.
5-8-2008	Present situation and measures suggested in chilli nurseries	Dr.K.Uma Jyothi	Dooradarsan, Hyderabad
7-8-2008	Nursery Management in chillies	Dr.K.Uma Jyothi	Dooradarsan, Vijayawada
18-8-2008	Contingency measure in chilli after heavy rains	Dr.C.Venkata Ramana	Dooradarsan, Vijayawada
21-8-2008	Turmeric	Dr.S.Surya Kumari	ETV Annadata
21-8-2008	Rose	Dr.S.Surya Kumari	ETV Annadata
21-8-2008	Bhendi	Dr.K.Uma Jyothi	ETV Annadata
21-8-2008	Nursery Management in chilli	Dr.C.Venkata Ramana	ETV Annadata
1-9-2008	Sigatoka lead spot in Banana	Dr.K.Uma Jyothi	
-	Citrus canker	Dr.C.Venkata Ramana	ETV, Hyderabad
-	Damping off in Onion	Dr.S.Surya Kurnari	
19-9-2008	Nursery Management in chillies	Dr.P.Venkata Reddy	ETV, Hyderabad





Date	Topic	Name of the Scientist	Recorded by
20-9-2008	Precautions to be taken while planting chillies	Dr.K.Uma Jyothi	ETV, Hyderabad
12-12-2008	Interveiw in production technology of mango	Dr.A.Bhagwan	Doordarshan
October, 2008	Sithaphalam lo Rakalu- Mariyu Mokkalu nate vidhanam	Dr.A. Girwani	Sapthagiri
17.12.2008	Jama lo melaina Rakalu	Dr.A. Girwani	Teja
23-12-2008	Rabi vegetable cultivation	Dr. R.V.S.K. Reddy	Doordarshan
23-12-2008	Kharif vegetable cultivation	Dr. R.V.S.K. Reddy	Doordarshan
25-12-2008	Production technology of Oil Palm & Inter cultural operations in Oil Palm	Dr. K. Krishna Rao	ETV, Annadata
31-12-2008	Improved package of practices in the cultivation of golden rods & Control of leaf webber in mango during summer months	Dr. V.Vijaya Bhaskar	ETV, Annadata

H. Rythu sadassus

Dr.K.T.V.Ramana SS (Hort) participated in Rytu Sadassu at RARS, Chinatapalli on 14.06.08. Dr.A.S.Padmavathamma, Principal Scientist (Hort), ARI, Rajendranagar participated in South zone Agricultural Fair was organized by Acharya N.G.Agricultuiral University from 20th to 23rd December 2008 . The field demonstration was conducted and explained about the activities of the scheme.

Grape Research Station, Rajendranagar

Dr. G. Ram Reddy, Scientist (Plant Pathology) participated as a resource person in Rythu Sadassu held at Chevella, R.R.Dist on 5-6-2008.

Dr. G. Ram Reddy, Scientist (Plant Pathology) participated as a resource person in rythu sadassu held at Kandukur, R.R.Dist on 7-6-2008

Vegetable Research Station, Rajendranagar

Dr. M. Vijaya : Participated in Regional Agricultural Trade Fair 2008 from 20-12-08 to 23-12-08 at Hyderabad and participated in Rythu sadasu and answered the queries of the farmers.





Dr. M. Vijaya : During Kisan mela on 19-12-08 to 23-12-08 at University stadium as well as on in Horti expo 2009 on 26 - 30 January, 2009, farmers were explained about the tuber crop cultivation, problem and solutions as well as seed material of sweet potato and colocasia released varieties were also distributed for multiplication.

Dr. R.V.S.K. Reddy : Arranged the Horticultural University stall at regional Agricultural Fair 2008 at sports complex, ANGRAU, collecting the exhibits from different Horticultural research stations as convener as per the instructions of Director of Research, APHU from 20-12-2008 to 23-12-2008. Also participated in Rythu sadasu and answered the queries of the farmers.

Dr. R.V.S.K. Reddy - Attended Rythu Sadassu in Rangareddy district on 04.06.2008 at Chevella, on 05.06.2008 at Kandukur and Marpalli on 07.06.2008 organized by Department of Agriculture.
Dr. M. Tirupathi Reddy - Attended Rythu Sadassu in Mahaboobnagar district in all five divisions from 05.06.2008 to 10.06.2008.

Dr. M. Narayanamma - Attended "Rythu Sadassu and Agril exhibition" as resource person on 03.07.2008 at Chenvally village, Chevella mandal. Explained the farmers about the improved technology in vegetable cultivation, INM and organic farming as pests.

Dr. Hameedunnisa Begum, SS : Attended Kisan mela of southern Telangana region at ARS Tandur on 17-2-2009 and 18-2-2009 and arranged APHU stall in the exhibition and participated as resource person in Rythu sadassu organized in this connection as per the instructions of Director of Research, APHU.

All the Scientists Participated in Agricultural Trade Fair 2008 from 20-12-08 to 23-12-08 at Hyderabad.

Fruit Research Station, Sangareddy

Date	Title of Programme	Place / institution conducted	Topic of the Lecture	Name of the Scientist
05-06-08	Rythu Sadassu	Sadasivpet Mandal, Medak dist	Lecture of pests of field crops	Dr.D.Anitha Kumari
07-06-08	Rythu Sadassu	Ramayampet Mandal, Medak dist and participated in.	Question answer session with farmers	Dr.D.Anitha Kumari
09-06-08	Rythu Sadassu	Siddipet Mandal, Medak Dist	Lecture on pests of mango	Dr.A.Bhagwan Dr.T.Suresh Kumar
15-08-08	Rythu Sadassu	Necklace Road, Hyderabad	Nursery Mela	Dr.A.Bhagwan
15-10-08	Rythu Sadassu	Mango at mango research station, Nuzived, Krishna dist	Lecture on pests of mango	Smt.B.K.M.Lakshmi Dr.D.Anitha Kumari
23-12-08	Regional Agriculture Fair for Southern Zone	ANGRAU Rajendranagar	Pests of mango	Dr.D.Anitha Kumari





I. Kisan Melas

Date	Place	Role	Name of the Scientist
26-1-2008	Horticulture Shows	Participated and exhibited fruits and photographs at the stall.	Dr.A.Bhagwan
1-6-2008	Mango Show-2009	Participated and arranged 207 mango varieties and explained about the important commercial varieties of mango and other varieties to the Hon'ble Agricultural Minister and other dignitaries	Dr.A.Bhagwan
17-8-2008	Nursery Mela	Participated and arranged the exhibits in the Nursery Mela	Dr.A.Bhagwan

Horticultural Research Station, Vijayarai

Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.) has participated in the Rythu Sadassus organized by the Department of Agriculture on Repallewada of Polavaram mandal, Jangareddygudem division and Palakol of Narsapuram division in the West Godavari district. During the Rythu Sadassus, I have cleared the doubts posed by the farmers regarding the horticultural crops.

J. Rythu Chaitanya Yatras

Attended to Rythu Chaitanya Yatras from 17.05.08 to 31.05.08 at Maredumilli and Rampachodavaram mandals.

Participated in "Rythu Cahaitanya Yatra" sponsored by the Govt. of A. P. from 27.5.2008 to 3.6.2008 for the benefit of farmers' to render the information on different crops grown in Guntur District.

Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.), HRS, Vijayarai has participated in the Rythu Chaitanya Yatras during the period from 17.05.2008 to 03.06.2008.

Dr. M. Vijaya - Attended "Saaguku Samayatham" programme in Manchala mandal of Rangareddy district in the villages Nomula, Kanapur, Manchala, Arutla, Chittapur, Thippaiguda, Thallallegudem, Lingampalle, Cheded. Rangapur, Agapally and Japal villages from 30-4-2009 to 10.05.2009 as per the instructions of Director of Research, APHU.

Dr.R.V.S.K.Reddy : Attended "Saaguku Samayatham" programme in Marpalli mandal of Rangareddy, District in the villages, Kota Marpalli. Siripalli, Veerlapalli and Kothlapur villages on 30-4-2009 as per the instructions of Director of Research, APHU.

Dr.R.V.S.K.Reddy : Attended "Saguku Samayatham" programme in Marpalli mandal of Ranga Reddy district on 1-5-2009, 2-5-2009 and 4-5-2009 in Pattur, Jamshedpur & Marpalli villages.

Smt. Veena Joshi: Attended "Saaguku Samayatham" programme in Medchal mandal of Rangareddy district in different villages from 30-4-2009 to 10.05.2009 as per the instructions of Director of Research, APHU.





Dr. M. Narayanamma, Sr.Scientist (Agro.) - Participated as resource person in “Rythu Chaitanya Yatra” Meetings from 23.05.2008 to 30.05.2008 in villages of Hayatnagar Mandal, Ranga reddy district.

Dr. M. Thirupathi Reddy, Scientist (H) - Attended the “Rythu Chaitanya Yatra” which is scheduled from 17.05.2008 to 03.06.2008. Actively participated in RCY’s from 23.05.2008 to 03.06.2008 in different villages of Marriguda (Mandal) and Chinapalli (Mandal) under Devarakonda (division) and Nalgonda (district).

Dr. M. Sujatha, Scientist (PI. Breeding) - Attended “Rythuchaitanya Yatra” in Maheshwaram Mandal from 31.05.2008 to 03.06.2008

Dr. M. Narayanamma - Attended Rythu Chaitanya Yatra meetings on 02.06.2008 and 03.06.2008 in villages of Hayatnagar mandal, Ranga reddy district

Dr. M. Tirupathi Reddy - Attended Rythu Chaitanya Yatra in Devarakonda division of Nalgonda (district) from 02.06.2008 to 03.06.2008.

Scientist Dr. B.G. Rajulu and Smt. G.S. Thanuja participated in Rythu Chaitanya Yatra from 01.04.2009 to 10.4.2009 at Venkatagiri Division.

K. Village adoption programme

Horticultural Research Station, Bapatla

Village Adoption Programme at Nallamothuvaripalem during the period under report.

Horticultural Research Station, Ambajipeta

The research station has adopted a village Mukkamala and Potayalanka in East Godavari district and transferred the developed technologies on coconut and coconut based cropping systems and played a major role in increasing per capita income of the farmers.

Citrus Research Station, Petlur

Adopted villages namely Althurupadu, Dakkili Mandal, SPSR Nellore dist., and transferred developed technologies.





VI. PUBLICATIONS

(Books, Laboratory manuals, Technical bulletins, Research papers etc.)

- ◆ Satyanarayana Reddy.G, Bhagawan.A, Suresh Kumar.T, and Lakshmi.B.K.M. 2008. Mamidi thotala yajamanyam, Technical bulletin.
- ◆ Satyanarayana Reddy.G, Girwani.A, and Anitha Kumari.D. 2008. Pandla Thotalu Nate Padhathi, Technical bulletin.
- ◆ Satyanarayana Reddy.G, Bhagwan.A, Girwani.A, Lakshmi.B.K.M, Suresh Kumar.T and Anitha Kumari.D. 2008. Jama Sagu. Book.
- ◆ Babu Ratan.P, Raghava Rao. D.V, Reddy.Y.N, and Madhava Rao.D. 2008. Organic banana production system: Leaf emission and Crop duration in plant and ratoon. Indian Journal of Horticulture 65(2): 134-136
- ◆ Narasimha Murthy.G, Bhagavan.B.V.K, Ramanandam.G, Babu Ratan.P, Madhava Rao.D, Reddy.R.V.S.K, and Suryanarayana Reddy.P. 2008. *Amorphophallus* (var. Gajendra) in Andhra Pardesh. Presented in National Seminar on *Amorphophallus*: Innovative Technologies held on 19-20 July at Patna, Bihar
- ◆ Narasimha Murthy.G, Bhagavan. B.V.K, Babu Ratan.P, Madhava Rao.D. 2008. Integrated nutrient management in *Amorphophallus*. Presented in National Seminar on *Amorphophallus*: Innovative Technologies held on 19-20 July at Patna, Bihar
- ◆ Babu Ratan.P, Satti Raju.M, Madhava Rao.D, and Prasadji.J.K. 2008. Influence of different Nitrogen sources on Banana Cv. Robusta (Cavendish AAA) Growth, Yield and Quality. Poster Paper presented in third Indian Horticultural Congress-2008 held from 6-9 November 2008 at OUAT, Bhubaneswar.
- ◆ Madhavi.A, Maheswara Prasad.V, and Girwani.A. 2008. Integrated nutrient management in Mango. Research Paper presented in The Orissa Journal of Horticulture-36(1)January-June,2008
- ◆ Krishna Rao.K and Vijaya Bhaskar.V. 2008. Performance of oil palm hybrid crosses under the Krishna-Godavari zone of Andhra Pradesh. *Proceedings of the National Symposium on Plantation Crops*, held at National Research Centre for Cashew. Puttur, Karnataka.
- ◆ Dhanunjaya.K, and Subramanyam.K. 2009. Evaluation of Yield Parameters of Pomegranate Varieties Under Scarce Rainfall zone. *Agric. Sci. Digest*, 29 (2): 146%147.
- ◆ Dhanunjaya.K, and Subramanyam.K. 2009. Growth and Yield performance of Aonla Varieties Under Scarce Rainfall Zone. *Agric. Sci. Digest*, 29 (2): 123%125.





- ◆ Dhanunjaya.K and Subramanyam.K. 2009. Effect of Nitrogen Fertigation on Growth and Yield of Pomegranate Var. Mridula Under Low Rainfall Zone. *Agric. Sci. Digest*, 29 (2): 132-134.
- ◆ Pon Kumar.P, Padma.M, Raj Kumar.M, and Madulety.T.Y. Research Note on Effect of Chemical and Plant Growth Substances for Breaking of Seed Dormancy in Sarpagandha (Linn.) Benth. Ex Kurz) 2008: *Journal of Research, ANGRAU*, 36 (1) 55 – 56
- ◆ Uma Maheshwara Rao.K, Chandra Sekhar.R, Dilip Babu.J, and Raj Kumar.M. Research paper on Effect of Pinching at Different Days After Planting on Flowering Behaviour in Three Cultivars of Carnation (*Dianthus Caryophyllus* Linn) 2008: *Journal of Research, ANGRAU*, 36 (1) 30-35
- ◆ Sandhya Rani.K, Uma Devi.M, Chandini Patnaik.M, and Raj Kumar.M. Research Paper on Integrated nutrient Management on medicinal coleus and soil nutrient status 2008: *Crop Research* 36(1,2&3): 341-348
- ◆ Uma Jyothi.K, Surya Kumari.S, Siva Reddy.K.V, Vijaya Lakshmi.T, and Venkata Reddy.P. Research article on Biochemical evaluation of chilli (*Capsicum annuum* L.) cultivars suitable for export. *Journal of Spices and Aromatic Crops*, Vol.17(2): 209-211 (2008)
- ◆ Uma Jyothi.K, Surya Kumari.S, Venkata Reddy.P, and Ravi Shankar.C. Research article on Studies of chilli (*Capsicum annuum* L) cultivars on germination and vigour index, *Journal of Spices and Aromatic Crops*, Vol 17(2): 149-153 (2008)
- ◆ UmaJyothi.K, Surya Kumari.S, Venkata Reddy.P, and Ravi Shankar.C. Article on Study of drying methods and chemical treatments on quality aspects of chilli (*Capsicum annuum* L.) cv. LCA 334, *Journal of Spices and Aromatic Crops*, Vol 17(2):205-208(2008)
- ◆ UmaJyothi.K, SuryaKumari.S, VenkataReddy.P, and Ravi Shankar.C. Article on Influence of temperature and relative humidity on quality constituents of dried chilli cultivars in storage, *Journal of Agro-meteorology* Volume 10 (Special\issue -Part-II):425-430 (2008).
- ◆ UmaJyothi.K, SuryaKumari.S, VenkataReddy.P, and Ravi Shankar.C article on Influence of storage temperature and relative humidity with post harvest chemical treatments on germination and vigour index of Chilli Cv LCA-334 *Journal of Agro-meteorology* Volume 10 (Special issue 2008-Part-II):431-435(2008).
- ◆ Uma Jyothi.K, Surya Kumari.S, Venkata Reddy.P, Vijaya Lakshmi.T, and Siva Reddy.K.V. Article on Studies on the performance of Chilli (*Capsicum annuum*. L) varieties for high yields in the Vertisols of Andhra Pradesh Green Farming. Vol 2 (5);278-279 (February 2009).
- ◆ Surya Kumari.S, Uma Jyothi.K, Bharathi.S and Siva Reddy.K.V. Article on Integrated Nutrient Management Studies in chilli Cv LCA353 in the Vertisols of Andhra Pradesh. *Green Farming*. Vol 2 (5);278-279 (April 2009)
- ◆ Surya Kumari.S, Uma Jyothi.K, Venkata Reddy.P, Vijaya Lakshmi.T, and Siva Reddy.K.V. Article





- on Studies on the effect of foliar application of Micronutrients on Yield and quality in Chilli Cv.Lam-334, Green Farming. Vol 2 (5);224-226 (January 2009)
- ◆ Uma Jyothi.K, Surya Kumari.S, Venkata Reddy.P, Venkata Ramana.C, and Vijaya Lakshmi.T. Article on Organic Management of Chilli, Souvenir- National Workshop on Organic Spices, OUAT, Similiguda, Koraput, Orissa, 14-15 December 2008.
 - ◆ Bharathi.S, and Surya Kumari.S. Article on Agronomic requirement of promising chilli varieties to various plant densities in vertisols, Green Farming Vol.2(3): 152-153; December (2008)
 - ◆ Giridhar.K, Sarada.C, and Yellamanda Reddy.T, Efficacy of Biofertilizers on the performance of coriander (*Coriandrum sativum* L.) in vertisols, Journal of spices and aromatic crops: Vol. 17(2) 98-102
 - ◆ Sarada.C, Giridhar.K, and Yellamanda Reddy.T. Article on Effect of bioregulators and their time of application on growth and yield of coriander (*Coriandrum sativum* L.), Journal of spices and aromatic crops: Vol. 17(2) 183-186
 - ◆ Giridhar.K, Sarada.C, and Yellamanda Reddy.T. Article on Influence of micronutrients on growth and yield of coriander (*Coriandrum sativum* L.) in vertisols, Journal of spices and aromatic crops: Vol. 17(2) 187-189
 - ◆ Sarada.C, and Giridhar.K. Article on Performance of coriander genotypes, Spice India: Vol.18-19
 - ◆ Sarada.C, Giridhar.K. and Rao.N.H.P. Article on Studies on character association in fenugreek (*Trigonella foenum-graecum* L.), Journal of spices and aromatic crops: Vol. 17(2) :82-84
 - ◆ Sarada.C, and Giridhar.K. Article on Threats in production of coriander, Journal of spices and aromatic crops: Vol. 17(2) 158-162
 - ◆ Sarada.C, Giridhar.K, and Rao.N.H.P. Article on Studies on genetic variability, heritability and genetic advance in fenugreek (*Trigonella foenum-graecum* L.), Journal of spices and aromatic crops: Vol. 17(2) 163-166
 - ◆ Ramanandam.G, Ravi Sankar.C, and Sri Hari.D. Integrated Nutrient management for cassava under rain fed conditions of Andhra Pradesh. Journal of Root crops, 2008 Vol. 34 No.2, pp129-136.
 - ◆ Narasimha Murthy.G, Bhagavan.B.V.K, Ramanandam.G, Babu Ratan.P, Madhava Rao.D, Reddy.R.V.S.K, and Surya Narayana Reddy.P. Amorphophallus (var. Gajendra) in Andhra Pradesh published in abstract book status papers and extended summary of National Seminar on Amorphophallus Innovative Technologies being organized by the ICAR, Rajendra Agrl. University, Pusa and CTCRI, and Indian Society for Root Crops, Thiruvananthapuram from 19th to 20th July 2008 at Patna, Bihar.





- ◆ Byju.G, Nedinchezhiyan.M, and Ramanandam.G. Soil Fertility Research for Cassava in India paper presented in 8th Asian Cassava Research Workshop held at Vientiane, Lao PDR from 20th to 24th October 2008.
- ◆ Ramanandam.G, and Anuradha.T. Ulli Sagu - published in Rythu nestam, January 2008. pp Nos. 18&19.
- ◆ Srinivasulu,B. An audio visual CD on 'Coconut cultivation practices' and 'Integrated Disease Management of Ganoderma wilt disease in coconut' (Telugu) prepared and released for the benefit of the farmers.
- ◆ Cassava Tuber yield and quality as Influenced by Integrated Nutrient Management Practices Under Rainfed Conditions of Andhra Pradesh published in Abstracts of 3rd Indian Horticulture Congress 2008 held at Bhuvanesar from 6th to 9th November 2008.
- ◆ Tholakari Pantaga Karrapendalam- Yajamanyamlo melakuvalu published in Padipantalu, July 2008 pp nos. 47-48.

POPULAR ARTICLES

- Prepared Brochure on sweet orange - *Battayilo Susthiramaina Adhika digubadiki Melina yajamanya paddatulu*".
- Minimal descriptors for *Solanum nigrum* & *Acorus calamus* were documented and the same was reported in the Annual Report, 2008-09 of DMAPR, Boriavi.
- Booklet on Betelvine Cultivation in English & Telugu version.
- Pamphlets on Betelvine Cultivation in Telugu version.





ABSTRACTS PUBLISHED IN VARIOUS NATIONAL AND INTERNATIONAL SEMINARS

S. No	Details of the abstract	Authors	Particulars of the Publication
1	Influence of storage temperature and relative humidity with post harvest chemical treatments on germination and vigour index of Chilli Cv LCA-334	K.Uma Jyothi, S.Surya Kumari, P.Venkata Reddy and C. Ravi Shankar	International Conference on Agrometeorology, CRI DA, Hyderabad
2	Influence of temperature and relative humidity on quality constituents of dried chilli cultivars in storage	K.Uma Jyothi, S.Surya Kumari, P.Venkata Reddy and C. Ravi Shankar	International Conference on Agrometeorology, CRIDA, Hyderabad
3	Studies on the performance of Chilli (<i>Capsicum annum</i> L.) varieties for high yield in the Vertisols of Andhra Pradesh	K.Uma Jyothi, S.Surya Kumari, P.Venkata Reddy and T. Vijaya Lakshmi	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
4	Chilli research in Andhra Pradesh- A perspective	K.Uma Jyothi, S.Surya Kumari, K. V. Siva Reddy, P.Venkata Reddy, T. Vijaya Lakshmi and P. Savithri	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
5	Evaluation of paprika genotypes in the vertisols of Andhra Pradesh	S.Surya Kumari, K.Uma Jyothi, V. Chenga Reddy, D. Srihari and C. Ravi Shankar	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
6	Studies on the effect of foliar application of Micronutrients on Yield and quality in Chilli Cv.Lam-334	S.Surya Kumari, K.Uma Jyothi, P.Venkata Reddy, T. Vijaya Lakshmi and K.V. Siva Reddy	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
7	Integrated Nutrient Management Studies in chilli Cv. LCA353 in vertisols	S.Surya Kumari, K.Uma Jyothi, S. Bharathi, P.Venkata Reddy and K.V. Siva Reddy	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
8	Evaluation of Chilli Hybrids in Vertisols of Andhra Pradesh.	K.Uma Jyothi, S.Surya Kumari, and P.Venkata Reddy	Third Indian Horticulture Congress November 6-9, Bhubaneswar, Orissa 2008





S. No	Details of the abstract	Authors	Particulars of the Publication
9	Evaluation of Sponge gourd cultivars for Andhra Pradesh	K.Uma Jyothi, S.Surya Kumari, and P.Venkata Reddy	Third Indian Horticulture Congress November 6-9, Bhubaneshwar, Orissa 2008
10	Improved Production Strategies for enhanced seed yield and quality in chilli	S.Surya Kumari, K.Uma Jyothi, and P.Venkata Reddy	Third Indian Horticulture Congress November 6-9, Bhubaneshwar, Orissa 2008
11	Variability and Selection Strategy for Yield and Quality improvement in Paprika	S.Surya Kumari, K.Uma Jyothi, and P.Venkata Reddy	Third Indian Horticulture Congress November 6-9, Bhubaneshwar, Orissa 2008
12	National scenario of Chilli-Production, Export and Value Addition	K.Uma Jyothi, S.Surya Kumari, K. Siva Reddy, P.Venkata Reddy, T. Vijaya Lakshmi and P. Savithri	National Workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008
13	Evaluation of chilli hybrids for high yield in the vertisols of Andhra Pradesh	K.Uma Jyothi, S.Surya Kumari, and P.Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
14	Standardization of hybrid seed technology in chilli	S.Surya Kumari, K.Uma Jyothi, and P.Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
15	Studies on Character association in paprika (<i>Capsicum annum L.</i>)	S.Surya Kumari, K.Uma Jyothi, D. Srihari, V. Chenga Reddy, A. Shiva Sankar, and C. Ravi Shankar	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
16	Variability studies in chilli (<i>Capsicum annum L.</i>) for yield and yield attributes	K.Uma Jyothi, S.Surya Kumari, and P.Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
17	Estimates variability, heritability and genetic advance for yield and yield contributing traits in chilli (<i>Capsicum annum L.</i>)	C. Venkata Ramana, K.V. Siva Reddy, P.Venkata Reddy, K.Uma Jyothi, and S.Surya Kumari	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
18	Comparative efficacy of sources of nitrogen and potassium on yield and yield attributes of chill in vertisols	S.Surya Kumari, S. Bharathi, K.Uma Jyothi, and P.Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur





S. No	Details of the abstract	Authors	Particulars of the Publication
19	Productivity of chillies as influenced by organic and inorganic nutrient management in vertisols	S. Bharathi,,, K.Uma Jyothi, and S.Surya Kumari	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
20	Nutrient management with organic, inorganic and biofertilizers for yield and quality management in chillies in vertisols	S. Bharathi,,, S.Surya Kumari and K.Uma Jyothi	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
21	Weather factors influencing the population dynamics of major insect pests of chilli in Andhra Pradesh	P. Vijaya Lakshmi, P. Savithri, K. Uma Jyothi, S. Surya Kumari, C. Venkata Ramana, and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
22	Evaluation of certain insecticides against chilli blossom midge <i>Asphondylia capsici</i> Barnes (Diptera:Cecidomyidas) in Andhra Pradesh	P. Vijaya Lakshmi, P. Savithri, K. Uma Jyothi, S. Surya Kumari, C. Venkata Ramana, and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
23	Evaluation of certain new acaricides for the management of chilli mite	P. Vijaya Lakshmi, P. Savithri, K. Uma Jyothi, S. Surya Kumari, C. Venkata Ramana, and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
24	LCA 334- Promising Chilli variety for export	C. Venkata Ramana, K.Uma Jyothi, S.Surya Kumari and P.Venkata Reddy	National Workshop on Organic Spices, OUAT, Similiguda, Koraput, Orissa on 14-15 th December 2008
25	Fungicidal management of anthracnose of chilli caused by <i>Collectotrichum capsici</i> (syd) Butler and Bishy	T. Vijaya Lakshmi, C. Venkata Ramana, P. Venkata Reddy, K. Uma Jyothi, S. Surya Kumari and P. Vijaya Lakshmi	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
26	Efficacy of cuprous oxide 75% WG against disease complex in chilli	T. Vijaya Lakshmi, C. Venkata Ramana, P. Venkata Reddy, K. Uma Jyothi, S. Surya Kumari and P. Vijaya Lakshmi	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
27	Correlation studies of quality parameters in chilli (<i>Capsicum annuum</i> L.)	K.Uma Jyothi, S.Surya Kumari, and C. Ravi Shankar	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur





S. No	Details of the abstract	Authors	Particulars of the Publication
28	Changes in quality parameters of different chilli cultivars subsequent to termination from cold store	K.Uma Jyothi, S.Surya Kumari, and C. Ravi Shankar	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
29	Changes in quality parameters of chilli treated with different chemicals subsequent to termination from cold store	K.Uma Jyothi, S.Surya Kumari, and C. Ravi Shankar	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
30	Reliability of yield contributing traits for improving yield potential in chilli (<i>Capsicum annum L.</i>)	C. Venkata Ramana, K. Madhavi Reddy, A.T. Sada Siva and M. Krishna Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
31	Estimates of reciprocal cross effects for yield and its components in chilli	C. Venkata Ramana, K. Madhavi Reddy, A.T. Sada Siva and M. Krishna Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
32	Recent developments in production technology of seed spices	C. Sarada and K. Giridhar	National seminar on recent trends in research on spices and aromatic crops 10-12 th September at CCSHAU
33	Climate modification for off season production of coriander	C.Sarada, K.Giridhar and T.Yellamanda Reddy	National seminar on new initiatives R&D in horticultural crops 2.6-9 th November 2008 at OUAT, Bhubhaneshwar
34	Design and development of Off season production systems of coriander (<i>Coriandrum sativum L.</i>) for leaf	C.Sarada, K.Giridhar and T.Yellamanda Reddy	National seminar on new initiatives R&D in horticultural crops 2.6-9 th November 2008 at OUAT, Bhubhaneshwar
35	Pattern of morphological variation in coriander	K.Giridhar, C.Sarada and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
36	Analysis of adaptability and stability of Ajowan genotypes in rain fed vertisols	K.Giridhar, C.Sarada and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur





S. No	Details of the abstract	Authors	Particulars of the Publication
37	Nutrient management in coriander	K.Giridhar, C.Sarada and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
38	Evaluation of coriander genotypes for suitability in Andhra Pradesh	C.Sarada, K.Giridhar and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
39	Evaluation of fenugreek (<i>Trigonella foenum-graecum</i>) genotypes for yield and diosgenin content in vertisols of Andhra Pradesh	C.Sarada, K.Giridhar and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
40	Performance of coriander varieties under different dates of sowing	C.Sarada, K.Giridhar and P. Venkata Reddy	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur
41	Evaluation of coriander genotypes for drought tolerance	B.K. Mahalakshmi, K.Giridhar, C.Sarada and TCM Naidu	Souvenir & Abstracts - National Seminar on Spices (24 th -25 th March 2009), Guntur



**POPULAR ARTICLES:**

S.No	Name of the article	Authors	Name of the Magazine
1.	HRS, Lam Vesavilo Kothimeera Sagu	C. Sarada, K. Giridhar and T. Yellamanda Reddy	Annadata, April, 2008.
2.	Mirapalo pootha pindae dasallo aasinchu purugulu yajamanya paddathulu	P.Vijaya Lakshmi, C.Venkata Ramana, S.Surya Kumari, K.Uma Jyothi P.Venkata Reddy	Annadatha, April, 2009
3.	Purugumandula pichikarilo jagrathalu	P.Vijaya Lakshmi, C.Venkata Ramana, S.Surya Kumari, K.Uma Jyothi P.Venkata Reddy	Annadatha, June, 2009
4.	GRS, Rajendranagar, Sitakalapu Drakshapanta – Sashyaraksana	Dr.G.Ram Reddy,	Agricultural Today (Telugu) January-09 P.No.42-45.
5.	HRS, Sangareddy Cheeni/ Nimma thota lalo Nelavari sagu panulu	Dr.A.Girwani & Dr.G.Satyanarayana reddy	Annadata, December, 2008
	Mamidi thotalalo Polusu purugu nivarana	Dr.D.Anitha Kumari, Smt.B.K.M.Lakshmi, Dr. A.Girwani Dr.G. Satyanarayana Reddy	Annadata, September, 2008
	Jamalo vachu purugulunivarana charyalu	Dr. D.Anitha Kumari, Smt.B.K.M.Lakshmi, Dr.A.Girwani Dr.G. Satyanarayana Reddy	Rythu nestham, September, 2008
	Pandla Thotalalo Pindinalli Tesukovalasina Jagrathalu	Dr.D.Anitha Kumari, BKM Lakshmi, Dr.A.Girwani, Dr.G.Satyanarayana Reddy	Annadata, April,2009
	Vanijya Saralilo Sapota Saguku Tesukovalasina Cheryalu	BKM Lakshmi, Dr.D.Anitha Kumari, Dr.G.Satyanarayana Reddy	Annadata, May,2009.





Participation of Teachers / Scientists in International and National conferences/symposiums/workshops.

- Dr. B.V.K. Bhagavan SS (Hort) participated in the training cum workshop on “IP and Technology management in the ICAR System (Theme: Procedural Requirements of patenting)” at NARM, Hyderabad from 29.05.08 to 31.05.08.
- Dr. B.V.K. Bhagavan SS (Hort) participated in the “National Seminar on Amorphophallus” held at Veterinary college auditorium, Rajendra Agricultural College auditorium, Rajendra Agricultural University, Patna on 19.07.08 & 20.07.08.
- Dr. B.V.K. Bhagavan SS (Hort) delivered guest lecture as a resource person in winter school (held from 19.12.08 to 8.1.09) on “Advance Techniques in quality planting material production and commercial evaluation of Tropical Tuber crops” at CTCTI (Regional center) Bhubaneswar on 30, 31.12.08 & 1.01.09.
- Dr. B.V.K. Bhagavan SS (Hort) participated in MDP workshop on “Policy & Prioritization, monitoring and evaluation (PME) support to Consortia – based Research in Agriculture” held from 03.02.2009 at NAARM, Hyderabad.
- Dr.P.Babu Ratan, Senior Scientist (Hort) Participated in International conference on Banana-Quality Production of banana for domestic and export market held from 24th to 26th October, 2008.
- Dr.P.Babu Ratan, Senior Scientist (Hort) participated in Influence of different nitrogen sources on banana cv. Robusta growth, yield and quality organized by 3rd Indian Horticulture Congress from 6th to 9th November, 2008.
- Sri. Kaladhar babu, Scientist (Horticulture) participated in winter school *National training on organic farming in Horticultural crops* at Mahanatma pule Krishi Vidyapeeth (MPKV), Rahuri, Maharashtra during February 21th to March 18th 2008.
- Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.) has participated in the “National Seminar on Cocoa - Problems and Prospects held at Jenney Club, Directorate of Cashew nut and Cocoa Development, Coimbatore” from 03.10.2008 to 04.10.2008.
- Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.) has participated in the “National Symposium on Plantation Crops, NRC for Cashew, Puttur, Karnataka” from 10.12.2008 to 13.12.2008 and presented a poster presentation on the Performance of oil palm hybrid crosses under the Krishna-Godavari zone of Andhra Pradesh.
- Dr. V. Vijaya Bhaskar, Senior Scientist (Hort.) has participated in the “National Conference on Floriculture for Livelihood and Profitability” held at IARI New Delhi from 16.03.2009 to 19.03.2009 and presented a poster presentation on Effect of different chemicals on the microbial growth during the vase life period of cut rose cv. First Red. The poster has been adjudged as best poster award.





Horticultural Research Station, Chinthapalle

- Sri K.Ravindra Kumar, Scientist (Hort.) & Dr.N.Rajakumar, Scientist (PP) Participated in "National Seminar on Spices" at Guntur on 24-25th March, 2009.
- Sri K.Ravindra Kumar, Scientist (Hort.) & Dr.N.Rajakumar, Scientist (PP) Participated in XXth AICRP Spices workshop at TNAU, Coimbatore, 6-8th June, 2009

Horticultural Research Station, Lam

- C.Sarada Scientist (Hort.) attended Brain storming session on Research Needs on Seed Spices at NRC, Ajmer, on 6-7th June, 2008.
- C.Sarada Scientist (Hort.) attended National seminar on recent trends in research on spices and aromatic crops at CCSHAU, Hisar, 10-12th September
- K.Umajyothi, Senior Scientist (Hort.), S.Surya Kumari Senior Scientist (Hort.), C.Sarada Scientist (Hort.) attended National Horticultural Congress on new initiatives R & D in horticultural crops at OUAT, Bhubhaneshwar on 26-29th November 2008.
- K.Umajyothi, Senior Scientist (Hort.), C.Venkata Ramana, Scientist (Hort.) attended National Workshop on Organic Spices, Similiguda at OUAT, Similiguda, Koraput, Orissa on 14-15th December 2008.
- P.Venkata Reddy, Principal Scientist (Hort.), K.Umajyothi, Senior Scientist (Hort.), S.Surya Kumari, Senior Scientist (Hort.), C.Sarada, Scientist (Hort.), K.Giridhar Scientist (Hort.), C.Venkata Ramana Scientist (Hort.), T.Vijaya Lakshmi, Scientist (Ento) attended National seminar on current trends and future prospects of spices with special reference to chillies, turmeric and seed spices at Guntur on 24-25th March, 2009.
- K.Umajyothi, S.Surya Kumari, C.Venkata Ramana attended XXVII workshop of AICRP (VC) at TNAU, Coimbatore on 12th to 15th February, 2008.
- K.Umajyothi, S.Surya Kumari, K.V.Siva Reddy P.Venkata Reddy T.Vijaya Lakshmi and P.Savithri participated in National workshop on Spices & Aromatic Plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February, 2008 and delivered lead talk on National Scenario of Chilli production, Export and Value Addition.
- K.Umajyothi S.Surya Kumari, P.Venkata Reddy, C.Venkata Ramana and T.Vijaya Lakshmi participated in National workshop on organic spices, OUAT, Regional Research and Technology Transfer Statin, Similiguda, Koraput, Orissa, 14-15 December, 2008 and delivered lead talk on Organic Management of Chilli.
- K.Umajyothi, T.Vijaya Lakshmi, S.Surya Kumari, P.Venkata Reddy and K.V.Siva Reddy participated in Brain Storming Session on chillies, IVR, on 28th March, 2008 and delivered lead talk on Post Harvest Handling, Storage and Value addition in Chilli.
- C.Sarada and K.Giridhar participated in National workshop on Spices and Aromatic plants ARS, Mandor-Jodhpur, Rajasthan on 6th and 7th February 2008 and delivered lead talk on Perspectives in seed spices research.





Fruit Research Station, Sangareddy

- Dr.A. Girwani attended National Guava Symposium at Shirdi ,Maharashtra on 24-26th November, 2008.

Vegetable Research Station, Rajendranagar

- All the scientists attended the “Nursery Mela” (held from 15.08.2008 to 19.08.2008) on 18.08.2008 at “Peoples Plaza”, Hyderabad.
- Dr. Hameedunnisa Begum, Senior Scientist, - Attended and presented the Annual Report of 2008-09 of DBT project on “Molecular characterization of Mango cultivars of Andhra Pradesh with special reference to Juicy germplasm” in the DBT - Task force annual meeting at DBT, New Delhi on 20-10-2008.
- Dr. Hameedunnisa Begum, Senior Scientist and Sri M. Thirupati Reddy, Scientist (Hort.) attended workshop of one day on “Post Harvest Infrastructure in Horticulture - Incentives & Investment Opportunities” organized by the Federation of A.P. chambers of commerce and industry on 30.10.2008 at K.L.N Prasad Auditorium, FAPCCI, Red Hills, Hyderabad.

Herbal Garden , Rajendranagar

- Scientists attended workshop of National Horticulture Mission review from 5th to 8th August, 2008 at TNAU, Coimbatore, Tamil Nadu.
- Scientists attended workshop on Medicinal and aromatic plants conducted by Andhra Pradesh State Medicinal and Aromatic Plants board at Birla Science centre, Hyderabad on 12-12-2008.
- Scientists attended in National Seminar on Spices conducted by Horticultural Research Station, Lam Farm, Guntur on 24.3.2009.





VII. FINANCE' AND BUDGET

The major financial grants to the Andhra Pradesh Horticultural University come from the A.P. Government under Plan by way of grants-in-aid for running the institution. The block grants approved in the budget for the year 2008-09 was Rs. 1548.76 lakh, including salaries grant of Rs.636.54 lakh and other grants-in-aid of Rs.525.00 lakh.

The ICAR assistance was Rs.649.78 lakh and the Govt. of India assistance was Rs.47.86 lakh while the amount received from other agencies was Rs.34.72 lakh and Departmental sponsored schemes Rs.769.43 lakh.

Thus, the total budget of the University for the year 2008-09 was Rs.2663.33 lakh.





VIII. OTHER SIGNIFICANT EVENTS IF ANY

- Foundation stone for Andhra Pradesh Horticultural University building complex was laid by Dr.Y.S.Raja Sekhara Reddy Garu, Hon'ble Chief Minister of A.P. on 1.2.2009 at Andhra Pradesh Horticultural University, Venkataramannagudem.



- Golden Jubilee Celebrations of Horticultural Research Station, Ambajipeta were conducted from 2nd to 7th September 2008.





- The following bulletins (Telugu) were prepared and distributed to the framers during Farmers interaction meetings in Golden Jubilee function.
 - ◆ Adunika paddatulatho kobbari saagu
 - ◆ Kobbarilo anthara pantala saagu
 - ◆ Kobbari pottutho compost thayari vidhanam
 - ◆ Kobbari thotallo eryiophid nalli adhupunaku charyalu
 - ◆ Kobbarilo purugula yajamanyam
 - ◆ Kobbarini ashinchu *Ganoderma* tegulu nivaranaaku yajamanya paddathulu
 - ◆ Jeevaniyanthrana paddatulatho kobbarini aasinchu tegulla yajamanyam

- **PG guidance & Teaching activities :**

Scientists of this Research Station are also involved in guiding the Post Graduate students in the field of Microbiology and Biotechnology

Conducted classes to I and II year B.Sc. Hort. students, at Horticultural College, Venkataramanna gudem

Vegetable Research Station, Rajendranagar

Students Research

Six M.Sc. students were allotted project work in Floriculture scheme to conduct experiments on flower crops as a part of their degree programme.

The following are the experiments laid out.

1. Studies on Integrated Nutrient management in Gladiolus
2. Studies on Integrated Nutrient management in marigold
3. Studies on Integrated Nutrient management in China aster
4. Studies on the influence of dates of planting on flower yield and quality of gladiolus
5. Studies on varietal evaluation of gladiolus
6. Fertigation studies in Gerberas

For the projects 3 and 5 Dr.A.S.Padmavathamma, Principal Scientist (Hort.) was the major advisor.





Horticultural Research Station, Rajendranagar

On stake holders meeting was also conducted on 27th February 2009 to bring the farmers and marketing companies on to the single platform. About 225 farmers from 18 districts of Andhra Pradesh participated in the meeting. CEO, A.P State Medicinal Plants Board, Scientists from CIMAP & resource persons from Dept. of AYUSH and A.P Forest Department, CEO, Swami Ramananda Theertha Regional Institute, representatives from different marketing companies and progressive farmers shared their experiences in medicinal plants cultivation. Information was also given to the farmers on promotional schemes offered by the APMAB for cultivation of prioritized medicinal and aromatic crops. An interactive session with marketing agencies has also been organized.







ACADEMIC BUILDING Andhra Pradesh Horticultural University, Venkataramannagudem



ADMINISTRATION BUILDING
Andhra Pradesh Horticultural University
Venkataramannagudem