ANDHRA PRADESH HORTICULTURAL UNIVERSITY

VENKATARAMANNAGUDEM, WEST GODAVARI DISTRICT–534 101(A.P.)

PROCEEDINGS OF
ZONAL RESEARCH & EXTENSION ADVISORY COUNCIL MEETING

2010-2011

TELANGANA ZONE

(Rangareddy, Hyderabad, Medak, Nalgonda, Mahaboobnagar, Nizamabad, Karimnagar, Adilabad, Khammam and Warangal districts)

3rd MAY, 2010

VEGETABLE RESEARCH STATION
Rajendranagar, Hyderabad-500 030

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2010-2011

3rd MAY, 2010

PROGRAMME

Venue: University Auditorium, ANGRAU

INAUGURAL SESSION

(TECHNICAL SESSION-I)

(PRESENTATION OF RESEARCH RESULTS)

10:00 AM	Invocation & Lighting of lamp		
10:05 AM	Welcome	:	Dr.K.V.Seshadri Director of Extension, APHU.
10:15 AM	President's opening remarks	:	Dr.S.D.Shikhamanay Hon'ble Vice Chancellor,APHU
	Presentation of Research Highlights	:	Dr.K.Purushotham, Director of Research, APHU.
10:25 AM	Address by Chief Guest	:	Dr. P.Raghava Reddy Vice-Chancellor, ANGRAU & Member, Board of Management, APHU
			Sri V.Jayarami Reddy Member, Board of Management, APHU
			Sri J.Devi Prasad Member, Board of Management, APHU
			Dr. Y.N.Reddy Member, Board of Management, APHU
			D.S.Amarender Reddy Member, Board of Management, APHU
			Sri Venkateswara Rao Garu JDH (Fruits) Dept. of Horticulture, A.P.
			Sri Balaji Naik ED, SHM, Dept. of Horticulture, A.P.
	Presidential remarks	:	Dr.S.D.Shikhamany, Hon'ble Vice-Chancellor, APHU.
	Vote of Thanks	:	Dr.B.Rangareddy, Principal Scientist, Grape Research Station, Rajendranagar.

TEA BREAK

Technical Session-1I

(Crop wise production technology recommendations)

Time 12.00 – 1.30 PM

Address by REC members	Smt. K. Avanija, Sri Kasala Venkata Reddy Sri M. Lokanth Dr. Tej Bahadur Gour

Major problems faced by Horticultural farmers of Rangareddy, Hyderabad, Medak, Nalgonda, Mahaboobnagar, Nizamabad, Karimnagar, Adilabad, Khammam and Warangal

Rangareddy District	Farmers, Asst. Director of Horticulture
Hyderabad District	Farmers, Asst. Director of Horticulture
Medak District	Farmers, Asst. Director of Horticulture
Nalgonda District	Farmers, Asst. Director of Horticulture
Mahaboobnagar District	Farmers, Asst. Director of Horticulture
Nizamabad District	Farmers, Asst. Director of Horticulture
Karimnagar District	Farmers, Asst. Director of Horticulture
Adilabad District	Farmers, Asst. Director of Horticulture
Khammam District	Farmers, Asst. Director of Horticulture
Warangal District	Farmers, Asst. Director of Horticulture

Chairman	**Dr.K.Purushotham, Director of Research**
Co-chairman	**Dr.K.V.Seshadri, Director of Extension**
Rapporteurs	**Dr.Hameedunnisa Begum**
	Dr.Lalitha Kameshwari
	Dr.Sireesha

LUNCH BREAK 1:30 PM to 2:30 PM

Technical Session-III

(Crop wise presentations & Interaction with Farmers and Horticultural Officers and Identification of Research and Extension Gaps)

Time 2:30 PM to 3:30 PM

Resource Persons

Dr.A. Bhagavan, Senior Scientist (H) FRS, Sangareddy	Fruits
Dr. R.V.S.K. Reddy, Principal Scientist (H) HRS, Rajendranagar, Hyderabad	Vegetables
Dr.Satyanarayana Reddy, Principal Scientist (H) Herbal Gardens Scheme, Rajendranagar, Hyderabad	Plantation, spices, aromatic and medicinal plants
Dr. J.Dilip Babu, Principal Scientist (Head) VRS, Rajendranagar	Post Harvest Technology

Chairman : Dr.K.Purushotham, Director of Research
Co-Chairman : Dr.K.V.Seshadri, Director of Extension

Rapporteurs : Dr. R.V.S.K.Reddy
Dr. Kanaka Mahalakshmi

TECHNICAL SESSION-IV

(PLENARY SESSION)

Time 4.00 – 5.00 PM

- **Presentation of Research, Extension gaps and Recommendations.**
- **Finalization of Research & Extension technical programme**

Chairman : Dr.K.Purushotham, Director or Research, APHU.

Co-Chairman : Dr.K.V.Seshadri, Director of Extension, APHU.

Vote of Thanks : Dr.J.Dilip Babu, Principal Scientist (Head)
Vegetable Research Station
Rajendranagar

ANDHRA PRADESH HORTICULTURAL UNIVERSITY

VENKATARAMANNAGUDEM, WEST GODAVARI DISTRICT-534101

PROCEEDINGS OF THE ZONAL RESEARCH AND EXTENSION ADVISORY COUNCIL MEETING OF TELANGANA ZONE 2010 -2011 HELD AT RAJENDRANAGAR, HYDERABAD

VENUE : SEMINAR HALL NO.1, ANGRAU AUDITORIUM, RAJENDRANAGAR, DATE: 3rd MAY, 2010

The Zonal Research and Extension Advisory Council (ZREAC) meeting of Telangana Zone - 2010-2011 (Rangareddy, Hyderabad, Medak, Nalgonda, Mahaboobnagar, Nizamabad, Karimnagar, Adilabad, Khammam and Warangal districts of Andhra Pradesh) was held on **3rd May, 2010** at Seminar Hall No.1, ANGRAU Auditorium, Rajendranagar, Hyderabad. Officers from Department of Horticulture, scientists of APHU, ANGRAU, CRIDA, Officers from ANGRAU, Officers of Line deaprtments and progressive farmers from the Telangana districts have participated in the meeting.

The Inaugural session was chaired and presided over by Dr.S.D.Shikhamany, Hon'ble Vice-Chancellor, APHU. The Chief Guest of the function was Dr.P.Raghavareddy, Hon'ble Vice Chancellor, ANGRAU. The other guests of honour were Sri V. Jayarami Reddy, Sri J.Devi Prasad, Dr.Y.N.Reddy and Dr.S. Amarender Reddy, Members, Board of Management, APHU, Sri Venkateswara Rao, JDH (Fruits) and Sri Balaji Naik, ED, SHM, Department of Horticulture. The other dignitaries present are on the occasion were Smt. K. Avanija, Sri Kasala Venkata Reddy, Sri M. Loknath and Dr. Tej Bahadur Gour, REC Members, APHU.

The council reviewed the work done during 2009-2010 in different research stations of this zone, crop production recommendations, problems encountered in the cultivation of different horticultural crops was thoroughly discussed, important research and extension gaps were identified and possible useful solutions were drawn.

TECHNICAL SESSION-I

(INAUGURAL SESSION)

Dr.K.V.Seshadri, Director of Extension, APHU extended warm welcome to the participants, distinguished invitees from different organizations, press and media.

Dr.S.D.Shikhamany, Hon'ble Vice chancellor APHU presided over the session. In his opening remarks, he expressed the importance of meeting and requested the farmers and Horticulture Officers to stress on important problems of horticultural crops in their regions which helps in formulating the effective technical programmes by the University Scientists and to better serve the farmers. He requested farmers and horticulture department officials to review the research results and identify the research gaps and express their opinion whether the research is going in right way or not.

Dr. K. Purusotham, Director of Research, APHU has presented the salient Research Results of the work carried out during 2009-10 in this zone.

Later in his address Sri V.Jayaramireddy, Member, Board of Management, APHU has opined that the ZREAC Meetings gives an excellent opportunity for the Scientists to know about the region wise problems of horticultural crops and also emphasized the need to strengthen the post harvest technology to minimize the losses and improve the shelf-life of perishables, to provide stiff competition at National and International levels for export by encouraging green house cultivation and by standardizing different green house technologies. Formulation of technical research programmes have to be prioritized based on need based and location specific problems by giving due emphasis on mechanization due to the scarcity and efficiency of labour. Even though the research is highly expensive R and D should be strong enough with a lot of financial support for prosperity. Each institute/Research Station has to develop and maintain crop museum and develop CD's on Powerpoint depicting the on going research programmes, technology developed etc., Each Research Station should develop vermicompost unit for recycling the farm waste. Commercial nursery block has to be developed in each Research Station for the supply of genuine plant and seed material which enhances the image of the Research Station in addition to income generation for self supporting. Head of the unit is to be made totally responsible for carrying out all the research programmes of the scientists. Take up diagnostic visits in coordination with Horticulture, Agriculture Officers and Scientists to identify research and extension gaps and for timely forecasting of pests and diseases. To utilize SHM funds effectively and to submit new projects for getting funds. Research has to be intensified on the pesticide residue, characterization through DNA finger printing, develop transgenic plants to withstand biotic and abiotic stresses.

Sri Devi Prasad, Member, Board of Management, APHU said that most of the area in and around Hyderbad and Telangana is under Horticultural crops especially mango, citrus, grapes, vegetables etc. The growers are facing difficulties in marketing due to the non availability of regulated market and also being highly perishable. Government and the University should be able to study and provide some solutions.

Dr. Y.N.Reddy, Member, Board of Management, APHU suggested the scientists to modify the technical progammes and update and revise the technical programmes on the needs with due importance to overcome the biotic and abiotic stresses.

Dr.S.Amarender Reddy, Member, Board of Management, APHU opined that every farmer is a good producer but a bad or poor trader and incurring losses of about 35-40 % produce in marketing.

He emphasized to establish suitable markets or satellite towns for marketing perishables, to increase the research on Post harvest technology like exact time of harvest, post harvest treatments, marketing and marketing intelligence service etc.,

Sri Venkateswara Rao, JDH (Fruits) Department of Horticulture said that the aim of the ZREAC is to utilize this forum to bring the problems facing by farmers to the university scientists for solutions. Farmers should properly utilize the benefits extended by the department of horticulture and contact the HO's regarding the field problems. Farmers should utilize subsidies given by the Department of Horticulture and Technical know how given by the university.

Sri Balaji Naik, Executive Director, State Horticulture Mission said that after recognizing essentiality of Horticulture, AP Government is giving high priority to horticultural crops like mango, oranges etc. Under NHM any project related to Horticulture will be funded. So far 693 projects were sanctioned and some more are in processing. Funding will be extended to ripening chambers, packing houses, Rythu bazars etc.

Later the chief guest Dr.P.Raghava Reddy, Hor'ble Vice Chancellor, ANGRAU in his address said that horticulture farmers are making good progress but encountering problems in production, marketing, post harvest technology, value addtion etc., and requested the scientists to identify the solutions which proper planning.

Dr.S.D.Shikhamany, Hon'ble Vice-Chancellor, APHU requested the Extension personnel to collect problems from farmers, convey to the scientists. **ZREAC** meetings are akin to participatory rural appraisal. He explained two important issues like How to conducted research and on what aspect. They should be location specific and Need based Research and in Collaboration with Public & Private sector. Production increased in most of the crops but profits to farmers are not encouraging which makes us to think of Crop diversification or Utility diversification like export or processing oriented technology to get support price to the farmers. Take up on farm research wherever necessary.

Dr. Giri Rao, Director of Extension, ANGRAU has appreciated A.P. Horticultural University for conducting the ZREAC Meetings within a short period of time. He has suggested to conduct the meetings based on themes viz., fruits, vegetable, medicinal plants etc., discussing the crop wise problems and inviting suggestions and questions from farmers and Horticultural Officers and Scientists are advised to answer them. It is essential to have good linkage with line departments.

The inaugural session was concluded with the vote of thanks expressed by Dr. Rangareddy, P.S., GRS, Rajendranagar.

SALIENT RESEARCH RESULTS

MANGO

At Sangareddy

During the period under report twelve germplasm accessions were evaluated. Maximum number of fruits and yield were recorded in cultivar CISH M2. As regards to the quality attributes of the fruit, 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 (23^0 Brix). Highest total sugars (22.60 %) was recorded in Sindhura and maximum shelf life (12 days) was observed in Arka Anmol.

Maximum fruit yields were recorded in Dashehari-35. Further, maximum cumulative yields were also recorded in Dashehari-35 in five bearing years.

Studies on the root stock trial of mango revealed that maximum number of fruits tree^{-1} and yield (kg tree^{-1}) was recorded in Banganpalli grafted on Nekkera rootstock. Further maximum cumulative yield (2004-08) was recorded in cv. Banganapalli grafted on Nekkare (216.55 kg tree $^{-1}$) while, minimum was observed in Banganapalli grafted on Mylepelian (70.81 kg/tree^{-1}).

In the bearing trees planted at normal distance in mango which was initiated in the year 1997, maximum cumulative yield for 8 years showed that in the trees pruned on alternate limbs after harvest and with the application of paclobutrazol at 10 g.a.i/tree while minimum in the trees pruned upto 50 cm on entire tree with application of paclobutrazol. However based on the benefit cost ratio, pruning upto thinning of crowded branches and center opening either during rest period or after harvest without application of paclobutrazol gave highest BC ratio.

In the experiment on pruning for rejuvenation of over crowded orchard which was initiated in the year 1997, the cumulative yields for eight years (1999-2007) showed that highest fruit yields were recorded in heading back of crowded branches and centre opening with paclobutrozol application. However, based on benefit cost ratio heading back of over crowded branches and centre opening is recommended for commercial adoption in over crowded old and senile orchards of mango.

In mango significantly highest yield was obtained in trees sprayed with KH_2PO_4 1% + KNO_3 1% before bud break during 2007. However maximum cumulative yield (2007-09) was obtained in the trees sprayed with KH_2PO_4 1% before bud break increasing the yield by 48% over control.

In the trial on effect of preharvest spray on post harvest shelf life of mango, maximum cumulative yield (2007-09), was recorded in trees treated with mulching and sprayed with $CaCl_2$ $6H_2O$ @ 6%. However, maximum storage life was observed in fruits sprayed with calcium chloride 4% along with mulching.

Surveys conducted for stone nut weevil incidence in Chittoor and Nuzivedu in the popular commercial varieties Neelum, Banganpalli indicated that they were free from stone weevil in Nuzivid area, where as in Chittoor district the stone weevil incidence was less in pulp units than in market yards. Totapari and Neelum were most infested in market yards and orchards. However, less stone nut weevil incidence was noticed in Banganapalli in orchards.

Mango hopper infestation was severe especially in compact panicle varieties like Dashehari. Peak activity of hopper was noticed in second fortnight of January. During 2008-09 peak activity of hopper was noticed in 1st week of March as the flowering was delayed during the year. Hopper population is positively correlated with relative humidity and non significant with rainfall. Peak incidence of fruit fly was noticed in the month of May. Methyl eugenol traps @ 4 per acre were effective in monitoring the fruit flies. Fruitfly population is positively correlated with temperature and negatively correlated with relative humidity. Peak incidence of fruit fly was noticed in the month of May.

Hopper population was effectively controlled by the spraying of Imidacloprid (0.005%) during the both the year under report.

In the integrated pest management studies first spray of Imidacloprid in Module 1 and Thiomethaxom in module II effectively controlled hopper population.

Major pollinating insects in mango 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 was recorded in middle of the tree (2-4 mts) during second week of January coinciding with peak flowering

season. Spraying of new chemicals such as Imidacloprid, Actara, Clothionidin caused mortality for pollinators such as honey bees, Coccinellids and butter flies.

Mango cultivars screened aginst powdery mildew for disease resistance in mango indicated that the cultivars Azam-us-Samar, Peddarasam, Chilkamukku, Hydersaheb, Kesar and Chandrakaran were found highly resistant. Fifteen cultivars Navneetham, Panakalu, Ashrafi, Janardhan Pasand, Rajapuri, Tambuva, Baramasi, Moovandan, Pahutan, Neeluddin, Neeleshan, Manjeera, Olour, Himayat recorded resistance reaction.

Amini, Alphonso, Azam-us-samar, Beauty maclean, Baramasi, Bombaypeda, Chousa, Elachi, Fazri, Gopal bhog, badami model, Jalal, Khas-ul-khas, Moovandan, Navneetham, Nazeem pasand, Tenneru, Tephala. Hybrids: Mulgoa Deshi x Goa Bandar, Neelum x Azam-us-Samar, Anarwa x langra, Banglora x Samer-E-Behist recorded zero incidence of floral malformation symptoms on panicles.

The mean minimum temperature of 13^{o}–17^{o} and maximum temperature of 28^{o}-32^{o} C and low relative humidity of 54-65 per cent recorded during 3rd week of January to Feb 2nd week was found congenial for appearance and development of disease on inflorescence to fruit setting stage on Dashehari and Banganpally var. of mango. Its spread is severe in 5th to 7th standard weeks.

Among all the treatments Chlorothalonil (0.2%) and Propineb (0.2%) and Propineb (0.2%) followed by Carbendazium (12%) + Mancozeb (63%) (companion/Saaf) and Tricyclozole controlled the anthracnose diseases significantly compared to other chemicals.

Survey conducted in three regions of Andhra Pradesh where mango is predominantly grown and disease appeared during three seasons indicated that the major diseases recorded in all the three regions were Anthracnose, Bacterial leaf blight, Powdery mildew and Malformations.

At Aswaraopet

Among 10 Hybrids tested, Neleshan recorded the highest mean number of fruits (1034 No.) and mean yield (141.4 kg.) per tree over the all other hybrids.

Among 10 Table varieties tested, Totapuri recorded the highest number of fruits (182 No.) and mean yield (32.9 kg) per tree compared to rest of the varieties.

Among 7 Juicy varieties tested, Suvarnarekha recorded the highest mean number of fruits per tree (530 no.) and variety Navaneetham recorded the highest mean yield (75 kg) per tree

Among 2 pickle varieties tested, Tellagulabi gave higher mean number of fruits 200 no. and mean yield 100 kg per tree.

At Malyal

In the studies on the performance of Mango (variety Baneshan) under different spacings (High density planting), the highest plant height was recorded in 10 x 10 mt spacing (15.75 kg/ tree) and no.of fruits (52.52). With regards to stem girth, the lowest was recorded with 4 x 4 m spacing (9.71 cm).

GRAPE

Rajendranagar

Among the collection and evaluation of germ plasm, Madhu Angoor has recorded the highest yield in seeded varieties and E 29-3 in seedless varieties.

Kishmish Rozaviz has recorded maximum Raisin recovery.

In seedless hybrids Arkavarthi and in seeded hybrids Arkakanchan have recorded maximum yield.

In the varieties for export purpose Italia has recorded maximum yield.

Among the Juice and Wine varieties Chenin blank recorded maximum yield.

Among the new germ plasm collections, Rizamath, the seeded table variety and 18-3 the seedless table variety has recorded highest yield.

Among the raisin varieties Pusa seedless has recorded maximum yield

Among the juicy varieties Arkachitra has recorded maximum yield

Among the wine varieties, Siraj has recorded maximum yield.

Survey of vineyards revealed that Nutritional status of Nitrogen and Phosphorous were optimum and Potassium was high.

Irrigation water collected from different vineyards revealed that the water was safe with regards to pH Sodium and EC ranged from 0.5 to 2.2 dS/m.

In 60% of samples chlorides were >4 meq/l

The survey results revealed that peak activity of Flea beetle was recorded from September and October, Chaper beetles from July to August, Mealy bug from March to April, Stem borer from February to March.

For the management of thrips *Sicirtothips dorsalis*, Fipronil, @ 1ml, Thiamethoxam @0.25g, Imidacloprid @ 0.3ml, Spinosad @ 0.3 ml and Dimethoate @ 2ml per liter of water were very effective.

For the management of mealy bug, *Maconellicoccus hirsutus,* Spirotetramat @ 0.5 ml/l spraying is very effective.

For the management of stemborer, *Coelosterna scabrator,* injection of Dichlorvos @ 2ml/ live hole and petrol @ 2ml/live hole were very effective.

Highest Percent Disease Index of Anthracnose disease was recorded in August & September after foundation pruning and December after forward pruning.

Highest Percent Disease Index of downy mildew disease was recorded in August and September after foundation pruning and December and January after forward pruning.

Highest Percent Disease Index of powdery mildew diseased was recorded in August and September after foundation pruning and December and January after forward pruning.

Fenamidone 10% + Mancozeb 50% 60 WG @ 1.5 g/l, Azoxystrobin 23SC @ 0.5 ml/l, Metiram 55% + Pyraclostrobin 5% 60 WDG @ 1.75 g/l and Cymoxanil 8% + Mancozeb 60% 68 WP @ 3g/l were found to be effective for management of downy mildew.

Azoxystrobin 23 SC @ 0.5ml and Pyraclostrobin @ 0.5g/l at 105th & 120th days after forward pruning were effective for management of powdery mildew.

At Aswaraopet

Four different wine grape varieties i.e. Cabernet sauvignon, Shiraj, Sauvignon blanc & Chenin black were grafted on the dog ridge rootstock in the months of October & November 2009 Flowering and fruit set was noticed in Shiraj and sauvignon blanc.

CITRUS

At Mallepalli

In Sweet Orange Clonal selections maximum plant height of 30.6 cm and girth of 0.7 cm was recorded in Mallepally selection-3

In the organic farming in Sweet orange maximum plant height of 181.4 cm and East- West spread of 198.74cm and North-South spread of 178.32 cm was recorded in the plants applied with 300-70-80 gm/tree N:P:K as inorganic form.

In the crop regulation studies in sweet orange with chemicals, Spraying of thiourea @ 0.5% 15 days after stress given highest fruit number 285- per tree with an yield of 62 kg/tree

In the crop regulation studies in sweet orange with cultural practices application of 100 kg farm yard manure + 1 kg urea followed by light irrigation 20 days after stress induced stress in sweet orange.

At Malyal

In the multilocation testing of promising canker tolerant Acid time selections/clones, the lowest percent of canker was recorded in Sel-21 (8-64%) followed by Sel-25 (10.12%)

Guava

Seven new accessions were added to germplasm for evaluation. Among the existing 28 accessions maximum fruit yields were recorded in Allahabad Safeda (351kgs tree^{-1}) followed by Kohir Safeda (337kgs tree^{-1}) and Lucknow-49 (310 kgs tree^{-1}) in seven bearing years.

Among different varieties tried in guava maximum fruit weight and yields were recorded in Red fleshed and Allahabad Safeda respectively.

In the four years old guava plants cv. Lucknow-49, maximum fruit yield, was recorded with application of ½ recommended doses of fertilizers along with foliar sprays of Zn (0.5%) + B (0.2%) and Mn (1%) twice (August & October).

SAPOTA

At Mallepalli

In Sapota cv. Kalipatti, maximum yield of 30.61 kg was recorded when the plants were applied with 50% inorganic + 25 % organic FYM + 25% Vermicompost

At Aswaraopet

Among eleven cultivars tested, Kalipatti recorded the highest mean number of fruits per tree (585 no.) while the highest mean yield was recorded by Cricket ball (81.3 kg) per tree.

AMLA

At Malyal

The highest plant height was recorded in Krishnaiah (3.62 mt.) followed by Chekya (3.24 mt). With regards to stem girth the highest was recorded in BSR-1 (16.98 cm).

CHILLIES

At Malyal

Among 8 selections in chillies, the highest dry pod yield was recorded in MCA 66 (36.52 q/ha).

In the fertigation studies in chillies, the highest dry pod yield was recorded in 75 x 48 cm (47.93 q/ha) followed by spacing with 60 x 60 cm (alternate row) 45.28 q/ha. Flood irrigation was recorded only (32.12 q/ha)

Among 10 paprika germplam studied, the highest dry pod yield was recorded in MCA-35 (26.82 q/ha) followed by MCA-73 (24.62 q/ha). The incidence of midge damage was also low (8.13%) and (10.12%) respectively.

CHILLIES

At RajendraNagar

In **chilli** application of pongamia oil, jatropa oil, castor oil and neem oils found to be ineffective in reducing thrips population. While chemicals like Spinosad and acephate proved to be effective.

ONION

At Malyal

Among the six onion varieties studied, the highest bulb yield was recorded in Arka Pragathi (230.32 q/ha) followed by LRO (221.26 q/ha) and TSS was recorded the lowest in local white (2.52%)

The highest bulb yield was recorded in Vermi compost @ 12t/ha (252.65 q/ha)

At Rajendranagar

Soil application of Neem Cake @ 250 kg /ha at 30 & 60 days after planting followed by spray of NSPE 4% neem soap 1% at 10 days interval.

Spray fipronil 5 Sc @ 1ml/l or lambda cyhalothrin 5 EC @ 0.5 ml/lit with spray of Azadirachtin form^{n} > 10,000 ppm @ 2 ml/lit.

TURMERIC

At Kammarapalli/Jagityal

At present, 273 (189+84) genotypes/germplasm collections are being maintained at HRS Jagityal (189 genotypes in the year 2003-04 another 84 genotypes were added Genotypes are grouped into long (8-9 months), medium (7-8 months), short duration groups (6-7 months) based on duration. Among the all germplasm lines tested CLI-317 recorded highest rhizome yield (20.66 t/ha) followed PTS-52 (17.99 t/ha). Variability was also observed for diseases like Rhizome rot, *Colletotrichum* and *Taphrina* leaf blotch.

Out of twelve (12) cultures tested in the CVT 2004-Series VI ,PTS-59 has recorded more fresh rhizome yield (29.9 t/ha) followed by NDH-9 (28.8 t/ha) in comparison to Duggirala red check variety (29 t/ha)

Out of 10 promising turmeric cultures tested, JTS-401 has recorded high fresh rhizome yield (31.02 t/ha) followed by JTS-402 (29.7 t/ha). The check variety PCT-13 recorded fresh rhizome yield (23.1 t/ha)

Among the nine genotypes tested, Roma recorded the highest rhizome yield (17.49 t/ha) followed by Rasmi (15.60 t/ha) and the lowest rhizome yield was observed on CLI-317-317 (7.06 t/ha)

There was significant effect of chemicals on rhizome germination and disease index of both leaf spot and leaf blotch. Rhizomes treated with Varbedazim + Mancozeb (0.1% + foliar spray of Carbendazim + Mancozeb (0.1%) on 45 and 90 DAP gave the highest germination (90.1%).

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 Carbendazim + 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 leaf blotch, the lowest per cent disease index was recorded in rhizomes rhizome treatment with Carbendazim + Mancozeb 0.1% + foliar spray of Carbendazim + 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)

More fresh rhizome yield was recorded in rhizomes rhizome treatment with Carbendazim + Mancozeb (0.1% + foliar spray of Carbedazim + Mancozeb (0.1%) on 45 and 90 DAP (17.1 t/ha) which was followed by rhizome treatment with Hexaconazole (01.% + foliar spray of Hezaconazole (0.1%) on 45 and 90 DAP (16.9 t/ha).

Screening of Germplasm cultures against Turmeric **Rhizome rot** revealed that 47 Accessions were found **resistant (R)** (0-20%), 82 Accessions were found **moderately resistant (MR)** (>20-40), 44 Accessions were found **moderately susceptible (MS)** (>10-60) and 9 Accessions were found **susceptible (S)** (>60).

Screening of Germplasm cultures against Turmeric **Leaf blotch** revealed that 15 Accessions were found **resistant (R)** (0-20), 26 Accessions were found **moderately resistant (MR)** (>20-40), 17 Accessions were found **moderately susceptible (MS)** (> 40-60) and 5 Accessions were found **susceptible (S)** (>60)

Screening of Germplasm cultures against Turmeric **Colletotrichum leaf spot** revealed that 7 Accessions **resistant (R)** (0-20), 9 Accessions **moderately resistant (MR)** (>20-40) and 3 Accessions **moderately susceptible (MS)** (>40-60)

VEGETABLES

At Rajendranagar

GOURDS

In **ridge gourd**, among the 19 genotypes tested, LA-181 was found to be of high yielding (2.40 kg/vine) with acceptable fruit (25.7 cm length, 4.93 cm width and 205.3 g weight) which is within the acceptable limits of consumer preference.

In **ridge gourd**, of six promising genotypes tested, LA-74 produced significantly higher yield (1.29 kg/vine) with good quality fruits (21.37cm length, 13.80cm girth, 145.00g weight and 10.33fruits /vine). However, LA-75 produced lengthy vines (2.58m) and LA-76 produced longest fruits (29.00cm).

In **ridge gourd** AVT-II, the entry Utkal Trupti recorded significantly higher yield (82.9 q/ha) and fruit weight (162.3 g)over local (63.8 q/ha).

In **bottle gourd**, among 18 genotypes tested, LS-111 was found to be promising with respect to earliness (first female flower appeared 60 DAS at 10^{th} node), high yield (13.44kg/vine) with acceptable fruit quality (46.0cm length, 9.0 cm width and 1.92 kg weight).

Out of 26 genotypes of **ash gourd** evaluated, Bh-24 recorded highest yield of 44.1 kg/vine.

Out of 5 superior lines of **ash gourd** evaluated in AYT Ash gourd, Bh -2 recorded highest yield (24.2 kg/vine).

In **ash gourd** AVT-II, the entry KAG-1 recorded significantly higher yield (443.3 q/ha) and fruit weight (3.4 Kg) when compared to check IVAG-90 (263.3 q/ha) and Local Shakti (226.6 q/ha).

Out of 12 genotypes of **snake gourd** evaluated, highest yield /vine was recorded in Swetha (3.5kg/vine).

CUCURBITS

Out of 33 genotypes of **cooking melon** evaluated, RNC-55-1 was found to be high yielding (6.45 kg/vine).

In integrated management of downy mildew disease of **cucurbits**, seed treatment with Ridomil MZ @ 0.25% + 3 sprays of mancozeb @ 0.25% was found to exhibit minimum incidence (18.1 POI) of downy mildew disease and produced 357.8 q/ha yield in bottle gourd.

GHERKINS

Three varieties namely Sparta, Ajax, Casata were tested with 3 different months of planting i.e. October, November & December and noticed that October month planting with Casata variety recorded the highest yield 441.4 gr/plant followed by Sparta 436.2 g and Ajax 416.8g

BEANS

Among 10 promising genotypes of **cluster bean** evaluated, RCT-48 produced significantly more number of pods per plant (296.78), followed by RCT-74 (237.63) and RCT-65. RCT-48 produced significantly higher pod yield (677.29g), followed by RCT-68 (565.87 g) and RCT-71(540.97 g).

In **dolichos bean (bush type),** four superior transgressive segregants viz., DBS-1,2,3 and 4 were isolated and are under preliminary evaluation.

TOMATO

In an experiment on resistance breeding to biotic and abiotic stresses, initially 13 promising lines of cultivated **tomato** (*L. esculentum*) were crossed with *L. pimpinellifolium* and *L. hirsutum*. The resultant crosses are to be evaluated in *kharif* and summer.

In **tomato**, 8 superior genotypes were crossed with Arka Vikas, Arka Saurab and Arka Alok. The resulting 24 F_1 hybrids are under evaluation.

In **tomato (Determinate)** AVT-II, the entry DVRT-2 recorded significantly highest yield (369.8 q / ha) over the other entries. DVRT-2 recorded highest fruit weight (108.3 g).

In **tomato (Indeterminate)** AVT-II, none of the entries tested were significantly superior to check NDT-9

In **tomato hybrid (Indeterminate**) AVT-I, 08/TO IN HYB-5 recorded significantly higher yield (342.8 q/ ha), higher number of fruits per plant (27.8) and was on par with ARTH-128 (319.3 q/ha).

In **tomato hybrid (Indeterminate**) AVT-II, ARTH-128 recorded significantly higher yield (333.2q / ha) and higher fruit weight (97.7 g) and was on par with 08/ToINHYB-1 (301.3 q/ha)

BRINJAL

In **brinjal**, seed multiplication of 'Improved Bhagyamati' was undertaken for minikit testing.

In **brinjal**, application of FYM 10 t/ha and neem cake 500 kg/ha proved to be the best in reducing the population of sucking pests as well as the borer incidence and recorded higher yields compared to the recommended dose of NPK.

Brinjal attracted more number of whiteflies compared to mung bean,urd bean and maize when sown as trap crops in tomato.

In **brinja**l, application of Spinosad 45 SC @ 0.5 ml/lt recorded lowest fruit damage (13.62% followed by Emamectin benzoate (17.23%).

BHENDI

Of the 10 promising genotypes of **okra** evaluated, although the genotypes could not differ significantly in plant height, number of fruits per plant, yield per plant, RNO-199 and 174 recorded significantly lower incidence of YVMV on plants (30%), followed by RNO-168 (45%).

Of the 11 genotypes of **okra** screened preliminarily against YVMV incidence, RNOYR-5 produced significantly higher yield (366.41g/plant), followed by RNOYR-1(259.63g/plant). The genotypes RNOYR-1 recorded lowest YVMV incidence on plants at final harvest (8.33%).

In **okra**, application of vermicompost @ 5t/ha + Vermiwash 5 sprays @ weekly interval of 30 DAS application of Vermicompost @ 5 t/ha + vermiwash 4 sprays and recommended NPK + vermiwash 5 sprays recorded comparable yields (100.9, 100.2 and 99.8 q/ha). These three treatments recorded significantly higher yield to recommended NPK treatment

In **okra hybrid** AVT-II , AROH-465 recorded significantly highest yield of 97.0 q/ha and was on a par with Prerna (93.2q/ha).

In **Okra** Yellow Vein Mosaic Virus (YVMV) resistance trial – AVT-I one entry viz., KS- 442 exhibited disease resistance and recorded incidence of below 5.0 per cent. Three entries VRO-21 (12.7), VRO-22 (9.3) and PB-31-1 (14.6) exhibited disease incidence of below 15.0 per cent.

At Malyal

TUBER CROPS

In Integrated disease management in **Amorphophallus**, the experimental treatments showed differential responses in the integrated disease management of the Elephant Foot Yam. Increased and early sprouting of Elephant Foot Yam was recorded in the plots of IDM package compared to farmers practice. Minimum incidence of Leaf blight (14.21%) and Mosaic (7.42%) was recorded in chemical control, how ever minimum incidence of collar rot was recorded in IDM Package, where as maximum yield of 34.4 t/ acre was recorded in chemical treatment followed by integrated disease management package (31.3).

In **colocasia**, KCS-2 recorded highest yield of 21.5 t/ha, followed by RNCA-1(21.3 t/ ha)

In **colocasia**, all the fifteen cultivars showed low to moderate blight infection in the filed. The susceptible cultivar 'Telia' has recorded maximum percent disease index of Phytophthora leaf blight disease of 31.9% and 'Muktakeshi recorded minimum percent disease index of 4.3 per cent and this was followed by RNCA – 1 11.7 with maximum yield of 31.4t/ha

In orange fleshed **sweet potato**, IGSPC-15 recorded highest yield (15.0 t/ha), followed by AV-98 (13 t/ha).

In white fleshed **sweet potato**, CO-3-4 recorded highest yield of 25 t/ha, followed by SV-280 (24 t/ha).

In **sweet potato**, the results on the effect of barrier crops (Yam Bean and marigold) indicated that planting of sweet potato with marigold as alternate planting is the best effective treatment to reduce the weevil infestation among the non-chemical treatments followed by yam bean planting, which have similar trend in reducing the weevil.

In **sweet potato**, against the weevil nine treatments were tested among non chemical treatments *Beauveria bassiana* (Bio-power 1.5% WP) which recorded total marketable tuber yield of 19.6 t/ha with weevil infestation of 18 per cent followed by T4- Neem (*Azadiracta indica*) cake which recorded total tuber yield 18.9 t/ha with weevil infestation of 18.0%

AGAKARA

At Aswaraopet

Intermediate type recorded the highest mean number of fruits per vine (25 no) and Trilobed type recorded the highest mean yield per vine (341.7 gr/plant) followed by Sparta 436.2 g and Ajax 416.8 g.

At Rajendranagar

The preliminary evaluation of 130 female accessions of ***M.dioica*** revealed that the genotypes RNK-113, RNK-85 and RNK-122 are found to be horticulturally superior and high yielding.

CAULIFLOWER and LEAFY VEGETABLES

Four different varieties viz NS 60 n, Basant, Silver cup 60, Swetha early tested at three different dates of planting viz October, November and December and noticed that more yield was recorded in NS 60 N (4.51 tons/ac) followed by Basant (4.21 tons/ac) during October month transplanting.

At Rajendranagar

Of the three non-traditional vegetables tested for their adaptability under open field conditions during *Rabi* 2009 under Hyderabad conditions, all the three viz., **Chinese cabbage, Brussels sprout and sprouting broccoli** fared well with an yield potential of 61.99, 27.86 and 12.89 t/ha respectively. Among the three, Chinese cabbage was found to be highly prone to aphids, diamond back moth and *Prodenia*, while the remaining were relatively free from these pests

In **cabbage**, IPM module consisting of border planting of Chinese cabbage as trap crop, spraying the trap crop with Dichlorovos (1ml/lt) at weekly interval to kill the trapped DBM larvae and Spraying of Sl NPV and NSKE (4%) proved to be the best in reducing the head damage.

In **amaranthus**, the two varieties (RNA-1 and CO-3) recorded on par yields with each other. In the application of recommended dose of NPK, application of FYM @ 20 t/ha + PSB + Azospirillum each @ 5 kg/ha and application of Neem cake @ 2 t/ha + PSB + Azospirillum each @ 5 kg/ha have recorded on par yields (89.0, 97.2, 83.8 q/ha respectively).

Among the two varieties RNA-1 recorded significantly lowest content of Oxalates. Among the sub treatments, recommended NPK treatment recorded significantly lowest Oxalates. Among the interaction the variety RNA-1 with Neem cake @ 2 t/ha recorded lowest oxalates and it was on par with Co-3 variety with recommended NPK application treatment.

In **Spinach**, All Green variety recorded significantly highest yeild of 473 q/ha. Among the sub treatments, application of FYM @ 20 t/ha + PSB + Azospirillum each @ 5 kg /ha recorded highest yield of 489 q/ha. In the interaction affect the variety all green with application of FYM @ 20 t/ha + PSB + Azospirillum each @ 5 kg/ha recorded highest yield of 532 q/ha and was on par with all green variety with application of Neem cake @ 2 t/ha + PSB + Azospirillum each @ 5 kgha.

In **spinach,** Arka Anupam recorded lowest oxalates contents. Among the sub treatments Neem cake 2 t/ha + PSB + Azospirillum each @ 5 kg /ha. Recorded lowest oxalates content. In the interaction affect Arka Anupam with application of Neem cake 2 t/ha + PSB + Azospirillum each @ 5 kg /ha recorded significantly lowest oxalates content among all the treaments.

Floriculture

At ARI, Rajendranagar

GLADIOLUS

Out of 43 varieties of gladiolus evaluated during the year 2009-10, Super star, Bindiya, Shubnam, IIHR hybrid-87, and yellow pril were the early flowering ones(50-55 days), Spike length and no.of florets increased with spike length. Floret size was maximum with Pure yellow, Arun, Swarnima, Hybrid-10, IIHR Hybrid-87 and Aldrion.

In the INM studies on gladiolus application of 75% RDF, FYM, Vermicompost and Azospirillum and application of 75% RDF, FYM, Vermicompost showed superiority in floral characters over other treatments.

The pre-storage pulsing chemicals $Al_2(SO_4)_3$ $16H_2O$, 300 ppm and $Al_2(SO_4)_3$ 16 H_2O, 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, longivity 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

In germplasm collections, out of 145 lines were evaluated for their performance 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 button (0.5g) while the parameter was maximum with HCC-25 (3.4g).

Application of 75% RDF, FYM, vermicompost and Azospirillum flowered early and showed superiority in all the floral characters viz, diameter of the flower, flower wt., duration of flowering, yield of flowers per plant and per m^2

Among different potting media tried, soil + sand + FYM + vermicompost followed by cocopeat + sand + vermicompost were found superior for growth of potmums.

Up to 3 days of wet storage in BAP 50ppm enhanced vase life and flower diameter in chrysanthemum. The holding solution of sucrose 2% + $Al_2(SO_4)_3$ $16H_2O$ 300 ppm envisaged a similar results.

TUBEROSE

Among the singles, Rajatha Rekha and Prajwal were the early flowering ones whereas no. of florets were more in Phule Rajni and Rajatha Rekha. Among doubles, early flowering and extended period of flower availability was noticed in Hyderabad double. Large sized bud and floret were observed in Suvasini and Hyderabad Double and were on par with each other.

In the varietal evaluation, Hyderabad Double and Calcutta double were the early flowering ones, whereas, Suvasini and Shringar were the late flowering ones. Duration of flowering was highest in Hyderabad double and Hyderabad single. Weight of spike (91.60g) maximum in Hyderabad Double and no.of flowers were maximum in Hyderabad Single.

Combination of 75% RDF, FYM, Vermicompost and Azospirillum and combination of 75% RDF, FYM, Vermicompost showed superiority in floral characters over other treatments.

The holding solution of (Al_2 (SO_4)$_3$ 16H_2O) 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

Out of 25 varieties tried Gaudina, Corsa, Tempo and Nabilla were found to be superior in growth and floral characters under Hyderabad conditions.

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 treatments

Earliest flowering was observed in treatment combination of 75% RDF, FYM, Vermicompost and Azospirillum. "A" grade flowers were maximum in T_3 followed by T_5 maximum vase life was observed in T_4 and T_3 and were on par with T_6, T_7 and T_1.

The holding solutions of (Al_2 (SO_4)$_3$.16H_2O 300 ppm + BA) and (Al_2 (SO_4)$_3$ .16H_2O 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 - Sucrose 10% + STS +Al_2 (SO_4)$_3$ 16H_2O + 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.

FLOWER AND LEAF FILLERS:

Ten varieties of philodendron sp. four varieties of Diffenbachia and four varieties in asparagus were collected to study their performance as cut foliage and fillers.

In the staggered planting technologies for extending the availability of gladiolus flowers, number of days for flowering was least with 15th August planting (43.4) for Bindya-2 and 1st August planted corms for Aarti (59.1 days). Plant ht. and rachis length were more with 15th July planting in Bidya-2 and it was more with 30th June planting in Aarti. However total no.of flowers per spike size of floret and wt.of spike were more with 15th June planting in both the varieties. Further studies are needed to confirm the exact time of planting for better yield and quality in gladiolus.

Standardization of Horticultural techniques for captive cultivation of Gerbera and carnations in different agro climates of Andhra Pradesh, among ten varieties tested for their suitability under poly house conditions maximum plant height was recorded in Sun way (40.6cm), Dana Ellen (40.27cm) and in Galilio (40.4cm). Flower diameter was maximum in Loriana (10.33cm.), Vilassor (9.57cm) and in Balance (9.43cm). Field Longevity of flowers was maximum in case of Malibu (19.27 days), Vilassor and DanaEllen (17.90 and 17.53 respectively). Flower yield per sq.m was more in case of Malibu (35.2) and in sunway (32.27).

Standardization of techniques for preponing and postponing flowering season for extending harvesting period in Chrysanthemum, statice and marigold, delayed flowering by 25 days was observed by breaking dark period during the flowering season using 40 watts incandescent bulb compared to control.

At Adilabad

Four different varieties of Gerbera viz., Julia, Marinell, Cocuy and Lorina have been tried under Adilabad polyhouse conditions. All the varieties established well and put forth sufficient vegetative growth to yield marketable flowers.

Four different varieties of Rose viz., First Red, Gold Streak, Carvity and Tropical Amazon have been tried under Adilabad polyhouse conditions. All the varieties established well and put forth sufficient vegetative growth to yield marketable flowers.

Four different varieties of Rose viz., Charmant, Farida, Rendejonu and Salmanca have been tried under Adilabad polyhouse conditions. All the varieties established well and put forth sufficient vegetative growth to yield marketable flowers.

Herbal garden, Rajendranagar

Soaking of *Cassia absus* seed in ethrel 100 ppm for 24 hrs. recorded significantly higher germination percentage (56.25%) over all other pre germinative treatments.

Among the different inter crops evaluated in tree medicinal species, Sankhapushpi produced maximum herbage yield (6.56Q/ha) followed by *Phyllanthus amarus*. (4.85 Q/ha).

Among the different organic manures studied on seed yield of Isabgol application of vermicompost @ 1.5 t/ha resulted in higher seed yield (7.20 Q/ha).

In studies on standardization of method of sowing and plant population for yield maximization of Aswagandha, broadcasting of Aswagandha seed @ 7kg/ac resulted in maximum dry root yield (4.44 Q/ha).

During rainy season Guggal cutting treated with IBA 1000 ppm has recorded highest percentage of sprouting in 30 cm long cuttings.

POST HARVEST TECHNOLOGY

At Rajendranagar

In an experiment on modified atmosphere packaging of **pomegranate**, it was found that the four types of bags (polypropylene bags of 50 gauge, 100 gauge and 250 gauge and MAP (X tend) used, pomegranate fruits could be successfully stored up to 90 days in X tend (MAP bags).

In an experiment on modified atmosphere packaging of mango, in X tend (MAP bag), the fruits of Banaganapalli Cv. of mango harvested at two different maturity stages with 7-8% and 8-9% TSS could be stored up to 28 days at 12.5±1 ^{o}C as against 4 days at ambient temperature.

Adoption of pruning in **guava** resulted in increased yields to an extent of 60 percent. In addition, technologies like spraying of Imidacloprid @ 1ml/l to control thrips, NAA @ 20 ppm to control fruit drop were transferred to fields.

Molecular characterization of **mango** germplasm in Andhra Pradesh revealed magnificent intra-varietal variability in popular cultivars of Andhra Pradesh to the tune of 42% in Beneshan, 49% in Peddarasam, 39% in Chinnarasam, 20% in Cherukurasam and 7% in Panchadarakalasa. In addition, profound variability to the tune of 8-41% has been observed in juicy genotypes. Similarly, few promising new genotypes viz., DM ACC-3, 4, 7, 15, 17 and 18 have been found to be horticulturally superior and genetically distinct and thus can be exploited commercially after further testing.

TECHNICAL SESSION-II

(Crop wise production recommendations)

Chairman : Dr.K.Purusotham, Director of Research, APHU

Co-chairman : Dr.K.V.Seshadri, Director of Extension, APHU

The folowing scientists have acted as resource persons and explained the present scenario and answered the problems raised by the Farmers and Horticultural Officers.

Dr.A. Bhagavan, Senior Scientist (H) FRS, Sangareddy	Fruits
Dr. R.V.S.K. Reddy, Principal Scientist (H) HRS, Rajendranagar, Hyderabad	Vegetable
Dr.Satyanarayana Reddy, Principal Scientist (H) Herbal Gardens Scheme, Rajendranagar, Hyderabad	Plantation, spices, aromatic and medicinal plants
Dr. J.Dilip Babu, Principal Scientist (Head) VRS, Rajendranagar	Post Harvest Technology

Rapporteurs : Dr. Hameedunnisa Begum
Smt. Lalitha Kameshwari
Dr. Sireesha

Guntur District

GENERAL

Vasireddy Rama Krishna Prasad, Farmer, Pedapalem (village)

Q: It is very useful to have this type of session under APHU and expressed his gladness towards conducting ZREAC in all three regions. He opined that Visiting the places where farmers got good results by following recommendations of University scientists is highly useful.He requested to collect the germplasm from the farmer's fields and utilize in future for varietal improvement like ber (near Jurreru river bank), Jamun from Eepuru (Mandal) Guntur (Dt.), (100 yrs aged, Jamun trees fruits are very good, smell & yield of fruits), Oranges from Parchuri Rajaram Mangalagiri, pedavadlapadu Guntur (Brodipet),(these oranges are good quality, high yielding) seedling trees for pickllng in mango. Global warming recommendations of scientists should be implemented to avoid global warming Coordination between different departments like APHU, SHM, Departments is essential.

A: Already collection and maintainance of germplasm in different crops in different research stations is being done. Definitely we utilize this information to improve these varieties

Medak District

Ravinder Rao, Jaheerabad

ALOEVERA AND SAFED MUSLI

Q: Root rot was noticed in Aloe vera and safed musli also in rainy season. Suggest the control measures.

A: Planting on the ridges and irrigation management during root formation will reduce the incidence. Drench the soil with 0.3% COC or 0.1% Carbendazim.

Venkatareddy, Sangareddy

MANGO

Q: In mango, die back was observed (out of 4000 nearly 2000 trees are dead)

A: Advised to contact scientists at FRS, Sangareddy.

Q: Nearly 98% flower drop in this season. Flowering came in Jan. due to rains severe flower drop.

A: Plant protection may be taken up

Q: Training programmes are to be conducted at regular intervals to create awareness among the farmer.

A: Advised to contact the concerned H.O./ADH and Scientists at FRS, Sangreddy.

Raji Reddy, Amalapuram (Village) Siddipet

ALOEVERA

Q: Aloevera dots were observed on the leaves which are a major problem. How to prevent?

A: Frequent weeding to keep the plot clean. It occurs during rainy season. Spray Mancozeb @ 2.5 g/lit.

CASSIA ABSUS

Q: Germination problem in *Cassia absus*.

A: Soaking of seed in ethrel 100 ppm for 24 hours improves the germination upto 50- 70%.

Deva Mohan Reddy, ADH

VEGETABLES

Q: Virus diseases are major problems in vegetables. Green house cut flowers – problems in production

In Carrot weed problem is more and hence request chemical control

Harvesting is also a problem and develop Mechanization

Protected cultivation of vegetables in summer.

A: Already experiments are going on some of the problems. For the others the research will be taken.

Sreedhar, Medak, H.O.

COLEUS

Q: Coleus root rot

A: Planting on the ridges and irrigation management during root formation will reduce the incidence. Drench the soil with 0.3% COC or 0.1% Carbendazim.

GINGER

Q: Ginger root rot is major problem.

A: Follow better management practices, following crop rotation

WATERMELON

Q: Bud necrosis in watermelon

A: Remove the affected plants and destroy. Control the vectors by spraying systemic insecticides.

TOMATO

Q: Lateblight, bacterial spot in tomato though we are using HYV

A: Seed treatment with Carbendazim (2g/kg). Spraying of Mancozeb (0.25%) or Carbendazim 0.2% at 10 days interval.

TURMERIC

Q: In Turmeric we need latest varieties like suprabha which is high yield vairiety.

A: Advised the concerned scientists to contact the source namely TNAU etc., and get the material, test and multiply.

GARLIC

Q: Garlic-Thrips attack is severe

A: Spraying of systemic insecticides like Dimethoate (2.0ml/l) or Phosalone 2ml/l or Fipronil 2ml/l at 10 days interval for 2-3 times.

ONION

Q: In onion, rainfed crops are more effected by Thrips

A: Spraying of systemic insecticides like Dimethoate (2.0ml/l) or Phosalone 2ml/l or Fipronil 2ml/l at 10 days interval for 2-3 times.

Mahaboobnagar

Venugopal Reddy, Kalvakurthy

SWEET ORANGE

Q: Dry root rot in sweet orange is a major problem.

A: Use budlings on rangapur lime root stock and follow the management practices.

PAPAYA

Q: Ring spot virus in papaya.

A: There is no resistant variety. Control the vector from the nursery stage.

MELONS

Q: Viruses in melons

A: Control the vectors by spraying systemic insecticides.

Q: Mulching was affective in melons and requested to create awareness among farmers and to provide subsidy.

A: Advised the concerned H.O.s/ADH

Bhupal Reddy, P.S.(Retd.) ANGRAU

VEGETABLES

Q: Underexploited vegetables like parwal, cowpea are to be popularized.

A: Already work is going on parwal and cowpea at Rajendranagar. Interested farmers can contact the scientists for further details.

Mallareddy

MANGO

Q: Fruit & flower drop in Mango is a major problem.

A: Spray 2,4-D @ 10ppm at the time of flowering, marble stage and one month before harvest to reduce the fruit drop. Advised to contact Scientists of FRS, Sangareddy for further details.

Q: For Agri crops Dhiancha is given on subsidy but it is not suitable for fruit crops.

A: Any green leaf manure crops can be raised in interspaces and incorporated in to the soil during monsoon.

Nalgonda

Smt. Avanija, REC Member, Suryapeta

SWEET ORANGE

Q: Sweet orange plants are declining after 5 years and suggest control measures.

A: Soil problems in Nalgonda district are aggravating the situation. Plant the budlings buded on Rangapur lime and follow the package of practices.

Nimmala Anjireddy

CITRUS

Q: In Nalgonda, citrus occupies major area and hence processing industry is required.

A: Investment to start a processing industry is high and hence advised to form co-operative society and contact Department of Horticulture and SHM for taking necessary action.

Q: In citrus thrips is another problem.

A: Spray Dimethoate during peanut stage of the fruit.

Q: Main commercial inter crops are required.

A: Ground nut, vegetables expecting solanaceous crops, green manure crops can be raised as inter crops upto 4-5 years.

Q: Create awareness among farmer regarding new weedicides and other weeders in citrus orchards.

A: Advised to contact Scientists at ARS, Mallepalli/H.O.s/ADH for further details.

Smt. Suneetha, ADH

CITRUS

Q: About 80 lakh ha. under citrus PH & Marketing are main problem. Low cost processing technology is need for this area.

A: Establishment of processing industry requires heavy investments and hence public, private partnership or co operative societies have to come forward for establishment. Anyhow it is taken as a research gap.

Q: In orchards though no. of power weeders are there, they are effective only in smooth soils. But in hard soils they are not effective. So concentrate more on power weeder.

A: Since the Engineering division in Horticulture has to be established so contact the engineering department of ANGRAU for the solution.

Q: Provide training especially about weedicides in all horticultural crops.

A: Training can be had with the collaboration of the Scientists of HRS, Mallepalli.

Q: To study the market intelligence, project work may be given to the Horti. – Business Management students.

A: The suggestion will be taken care of.

VEGETABLES

Q: Viral problems in vegetables, Herbicides in vegetable crops, salt resistant varieties.

A: Research will be taken up.

Nizamabad

Yugandar, ADH, Armur

TURMERIC

Q: In turmeric, a schedule may be prepared regarding the usuage of organic fertilizers like Vermicompost and vermiwash.

A: There is no research information on this aspect.

Q: As Salem variety of turmeric is becoming popular among the farmers, research need to be initiated.

A: Scientists are requested to obtain the material and test in the research station.

Karimnagar

Suryanarayana, ADH

MANGO

Q: Stone weevil is a major problem in some of the varieties like Tellagulabi and local mango varieties and needs control measures.

A: Collection of fallen infested fruits from orchard and destroying them by incineration. Spraying of Fenthion 50 EC @ 2ml/lit. during fruiting stage. (marble stage).

Q: Mango hoppers are attacking in all stages of mango crop.

A: Spray Carbaryl @ 3g/lit. on entire plant parts including trunks during November- December months to control the initial plant population. Spray Imidacloprid @ 0.3 ml/lit + Carbendazim @ 1g/lit when the trees are with flower bud stage. At full bloom stage, Endosulfan @ 2ml/lit + Carbendazim @ 1g/lit is recommended. Spraying of Synthetic pyrethroids should be avoided.

Q: Demonstrations are to be conducted regarding paclobutrazol usage in mango.

A: Please contact concerned H.O./ADH to contact the Scientists to demonstrate in the farmers fileds.

PAPAYA

Q: Improve varieties in papaya which is comparable to Taiwan varieties.

A: No resistant variety is available.

AGAKARA

Q: In Agakara, improved varieties are need to be developed.

A: Work is being carried out at Rajendranagar and Aswaraopet.

CUCURBITS

Q: Serpentine leaf minor is major problem in cucurbits and needs control measures.

A: Spray Triazophos @ 2ml/lit.

Q: Diagnostic field visits are need to be arranged in rainy season.

A: Department of Horticulture can arrange in consultation with the scientists.

PAPRIKA

Q: High yielding varieties are to be developed in paprika.

A: Work is being done at Lam and Malyal.

Q: No standard recommendation for soluble fertilizer through drip system in floricultural & vegetable crops.

A: Work will be taken up.

TURMERIC

Q: In turmeric cooking/curing machines are need to be developed.

A: After the strengthening of Engineering and post harvest technology work will be taken up and meantime efforts will be made to coordinate with ANGRAU to fabricate.

VEGETABLES

Q: IPM & INM for cabbage & cauliflower.

A: They are available and contact the Scientists of Vegetable Research Station, Rajendranagar for further information.

Adilabad

Pannala Vasu

TURMERIC

Q: In turmeric, root rot is a problem, prepare experiments on vermiwash, panchagavya & Jeevamrutham.

A: There is no scientific data available on this aspect and since there is no specification or standards for the preparation, the results may vary.

Q: Control of Rhyzome root rot in Turmeric.

A: Treating the seed rhizomes with Metalazyl + Mancozeb @ 3g./lit prevents disease. Apply cultured *Thichoderma Viridi* to the soil. When the disease is noticed in the field, the soil around the plants should be drenched with Metalaxyl + Mancozeb @ 2.0 g/lit.

Khammam

Kurra Bhaskara Rao

MANGO

Q: In Mango HYV are needed.

A: There are number of hybrids/varieties suitable for our conditions are available but the major problem in popularizing the variety is consumer acceptance and market preference.

Q: Proper training in proper time is required. Mechanical cutters are required for pruning in Mango.

A: Advised to contact the Scientists of FRS, Sangareddy for the technology and H.O./ADH may be contacted for the supply of tree pruners on subsidy

Q: Training programmes need to be conducted.

A: Horticultural Officers are advised to contact the scientists as resource persons for training programmes.

Umamaheswara Rao, Aswaraopet

Mango

Q: Mango, more prone to climatic fluctuations, resulting in drastic loss for the last 3-4 years. So suggest alternate crops in mango orchards, to have secondary income in case of failure of main crop.

A: Till 4-5 years any leguminous crops, vegetable crops, oil seeds like ground nut, pulse crops can be grown as intercrops further upto 10 years age crops like drum sticks, curry leaf, annual flower crops can be grown.

B.Panduranga, ADH-I

MANGO

Q: Mango awareness in training & pruning aspects in high density planting and post harvest management is needed.

A: Advised to contact the Scientists and fix up the training programmes and for on farm trials, in advance.

Q: Mango fruit borer is noticed. So improved cultural practices are to be given.

A: Phytosanitation plays very important role in avoiding the pest. In second fortnight of January spray of chloripyriphos 2.5 ml or dichlorovas 1.5 ml or carbaryl 3 g per litre of water especially in those gardens where previous incidence of this pest is.

Q: Salt injury in fruit crop due to high EC in water.

A: Farmers should be educated by the Horticultural Officers to necessarily go for soil and water testing and their suitability before planting.

Q: Rejuvenation of old mango orchards canopy management is to be standardized through demonstration by APHU.

A: Advised to contact the Scientists and fix up the training programme in advance

CASHEW

Q: In cashew Root and Shoot borer and tea mosquito bug are common and control measures may be suggested.

A: Root and Shoot borer infected, dead and trees with complete yellowing should be removed immediately along with root system by digging deep pit of 2 feet all around the base of the trunk in a radius of 1 meter and disposed off. The cocoons (pupae the resting stages of the pest) present within and around the trunk and root system 1 to 2 feet below the soil surface should be destroyed mechanically. Waste material should be burnt in the pit to destroy the resting stages of the pest if any. This should be the most important practice in cashew orchards in order to prevent further spread of the dreaded pest.

Periodical monitoring of the trees for identification of the pest infestation at early stages (Gummosis). Tree base must be kept clean and weed free so as to observe the gum exudation which is the early symptom of borer attack.

Extraction and killing of the grubs & cocoons by chiseling the affected portion of bark of trunk or root followed by spraying the chiseled portion with neem oil 5% or chlorpyriphos 0.2% or carbaryl 0.2% and earthling up on to the chiseled portion.

Chiseled pieces of bark should be burried deep in to the soil immediately. More than 50% of the bark circumference on the trunk / root should not be removed while extracting the grubs and or cocoons.

As prophylactic measure brush the tree trunk up to a height of 1 m. and also the exposed roots with a smooth iron bristles brush and spray with neem oil 5% thrice during the year at an interval of 4 months starting from June onwards or onset of monsoon.

(ii) Tea mosquito Bug: Sprayings with monocrotophos (1.6 ml/lt), endosulfan (2.0 ml/lt) and carbaryl (2g/lt) during flushing , flowering and nut formation stages, respectively are essential to control the pest

VEGETABLES

Q: Growing of vegetables on trellis are to be popularized.

A: This is an extension activity and hence the department of horticulture with the help of scientists can take up this.

Warangal

Saravanan, ADH-II

VEGETABLES

Q: Requested to give monthly information on vegetable crops as article to papers.

A: Many a times Scientists are disseminating information through media and the same can be utilized. Further requested to contact the Scientists whenever necessary.

Q: Growing of vegetables under trellies, increases yield 30 to 40 %

A: This is an extension activity and hence the department of horticulture with the help of scientists can take up this.

Dr. Tej Bahadur Gour, REC Member

GENERAL

Suggested to prepare the action taken report on the suggestions made in this deliberations and present in the next deliberations. Further he advised to use Pheromones for diamond back moth and also for castor capsule borer. There may be possibility of Pheromone for mango fruit borer also and hence request to take up research in this line. Chloride injury is common in almost all areas 8 years Mango crop dried and this may be due to the cultural operations taken up by the farmers. To get higher yields and big size fruits through irrigation after pruning especially in high density planting. This coupled with the drought resulted in the Chloride injury due to the deposition of salts near root zone and is reflected in the new flush after pruning. And this may be over come by applying 10 kg of Gypsum per plant followed by spraying 30-50 g of Potassium Nitrate twice at 2-3 weeks intervals. This is based on the personal practical experience. In his opinion aeration of water may reduce the incidence and this has to be experimentally proved. He also suggested to introduce new crops like Ber and Pomegranate.

SEED SPICES

Q: Take up research on Seed spices since there is a lot of export market and also for value addition

A: Already tested in Black and Red soils and this will be continued with inclusion of cumin also.

Pest and disease management in Flower crops

Q: Documentation of pest & diseases of Horticultural crops esp. on floricultural crops is very poor.

A: This is a good suggestion and will be taken up.

TECHNICAL SESSION-III

(Crop wise presentations & Interaction with farmers and Horticultural Officers and Identification Research and Extension Gaps)

Time 2.30 -4.30 PM

Chairman : Dr.K.Purusotham, Director of Research, APHU

Co-chairman : Dr.K.V.Seshadri, Director of Extension, APHU

Sub-groups

1. Dr.A. Bhagavan	:	Fruits Group
2. Dr. R.V.S.K. Reddy	:	Vegetable Group
3. Dr.Satyanarayana Reddy	:	Plantation, spices, aromatic and medicinal plants
4. Dr. J.Dilip Babu	:	Post Harvest Technology

Rapporteurs : : Dr. Hameedunnisa Begum
Dr. Lalitha Kameshwari
Dr. Sireesha

Mango

1. Control of Mango hopper

Spray Carbaryl @ 3g/lit. on entire plant parts including trunks during November-December months to control the initial plant population. Spray Imidacloprid @ 0.3 ml/lit + Carbendazim @ 1g/lit when the trees are with flower bud stage. At full bloom stage, Endosulfan @ 2ml/lit + Carbendazim @ 1g/lit is recommended. Spraying of Synthetic pyrethroids should be avoided.

2. Control of Mango Thrips

Spray Fipronil 2ml or Carbaryl 3g or Dimethoate 1.5ml or Emidachlophid 0.3ml or Hotothion 2ml/lit at the time flowering and peanut stage.

3. Control of Fruit borer

Phytosanitation plays very important role in avoiding the pest. In second fortnight of

January spray of chloripyriphos 2.5 ml or dichlorovas 1.5 ml or carbaryl 3 g/lit of water especially in those garden where previous incidence of this was recorded.

4. Control of Stone weevil

Collection of fallen infested fruits from orchard and destroying them by incieration. Spraying of Fenthion 50 EC @ 2ml/lit. during fruiting stage (marble stage).

5. For improving the productivity

Spray $ZnSO_4$ 1gm/lit twice during July and August. Boran spray at the time of August and November.

6. Pruning and canopy management in high density mango

Pruning of criss-crossed branches, dried twigs and dried fruit stalks of previous seasons growth will be done regularly to get good crop. In old trees aged above 25 years, centre opening of the tree will be done in order to facilitate proper light and ventilation to inner parts of the tree.

At Brain storming session, detailed discussions will be done for canopy management and high density management.

7. Rejuvenation of mango orchard in Khammam

FRS, Sangareddy will demonstrate the technology with the help of RARS, Aswaraopet.

8. Tip burning in mango

Already survey was conducted in Khammam and corrective measures were suggested and farmers reported the success of technology. FRS, Sangareddy will demonstrate the technology with the help of RARS, Aswaraopet.

9. Post harvest technology in mango

FRS, Sangareddy to provide technical help to RARS, Aswaraopet so that the technology can be transfered to farmers.

10. Intercropping in mango

Intercrops like vegetables and fruits like phalsa can be profitably grown in alleys in young orchards. Redgram is not advisable as it is an alternative host to mealy bug. In old orchards shade tolerating crops like ginger, turmeric etc. can be taken.

Intercropping with pulses checks the weed growth and increases soil nutrient status.

Sweet Orange

1. Mangu in sweet orange in Nalgonda

Spraying with wettable sulphur 3g or dicofol 3.5ml or propargite 2ml per liter of water in September, October and November months, 3 times at monthly intervals is recommended. The spraying should coincide with the marble stage of the fruit.

2. Fertigation in Sweet orange

Already experiments were initiated at CRS, Tirupati

3. Revival of sweet orange planted in calcareous soils in Nalgonda by reclamation of calcarious soils.

HRS, Mallepalli will coordinate with the Scientist of CIP and onfarm trials will be initiated.

4. Low cost juice processing of sweet orange may be taken up.

Dr. J. Dilip Babu P.S., VRS, Rajendranagar will take up the research.

Guava

1. Pruning in guava

Remove the side branches upto 1m height in young plants. Remove the criss cross branches and infested and dried branches. Prune upto ¾ of the branches which yielded fruits in previous year.

2. High density planting in guava

Already the trial was taken up at FRS, Sangareddy & HRS, Aswaraopet.

Cashew Nut

1. Shoot and root borer problem

Dried, dead trees with complete yellowing should be removed immediately along with root system by digging deep pit of 2 feet all around the base of the trunk in a radius of 1 m and disposed off. The cocoons present with in and around the trunk and root system 1 – 2 feet below the soil surface should be destroyed mechanically. Waste material should be burnt in the pit to destroy the resting stages of the pest if any. This should be the most important practice in cashew orchards in order to prevent further spread of the dreaded pest.

Periodical monitoring of the trees for identification of the pest infestation at early stages (gummosis). Tree base must be kept clean and weed free so as to observed the gum exudation, which is the early symptom of borer attack. Extraction and killing of the grubs and cocoons by chiseling the affected portion of bark of trunk or root followed by spraying the chisel portion with neem oil 5% or chlorpyriphos or 0.2% carbaryl and earthing up on the chisel poertion.

Chiseled pieces of bark should be buried deep in to the soil immediately. More than 50% of the bark circumference on the trunk/root should not be removed while extracting the grubs and cocoons.

As prophylactic measures brush the tree trunk upto a height of 1 m and also brush the exposed roots with a smooth iron bristles and spray with neem oil 5% thrice during the year at an interval of 4 months starting from June onwards or onset of monsoon.

Papaya

1. Yellowing of older leaves during February – April especially in Red lady

Survey will be conducted by the Scientist (Pathology) of VRS and Scientst (SSAC) of GRS, Rajendranagar

Vegetables

1. Tomato

Control of Blight disease

Spray Mancozeb @ 3 g/lit or SAF-2g/lit

2. Watermelon

Control of Budnecrosis virus

Control the vectors by spraying systemic insecticides

3. Onion

Suggest the variety suitable for Kharif.

Experiments will be initiated at HRS, Malyal

4. Vegetables like parwal and vegetable cowpea are to be popularized.

Already work is going on parwal and cowpea at Rajendranagar. Interested farmers can contact the scientists for further details.

5. Control of Serpentine leaf miner in Ridgegourd and watermelon

Spray Triozophos @ 2ml/lit.

6. Control of Midge in Chillies

Spray neem seed-kernel extract (4%) or Phosphamidon (0.05%) once in 2-3 weeks after flowering.

7. IPM & INM for cabbage & cauliflower.

They are available and contact the Scientists of Vegetable Research Station, Rajendranagar for further information.

8. Fertigation in vegetables

Experiments will be taken up

9. Take up research on Cumin and other Seed spices since there is a lot of export market and also for value addition.

Seed spices were already tested in Black and Red soils and this will be continued with inclusion of cumin also.

10. Growing of vegetables on trellis are to be popularized.

This is an extension activity and hence the department of horticulture with the help of scientists can take up this.

11. Weed control with post emergency herbicide in vegetables

Experiments will be initiated at VRS, Rajendranagar.

12. Turmeric varietal evaluation with new varieties for disease resistance and high yield

Experiments will be conducted at HRS, Kammarapalli

13. In turmeric cooking/curing machines are need to be developed.

After strengthening of Engineering and post harvest technology work will be taken up and meantime efforts will be made to coordinate with ANGRAU to fabricate. Department of Horticulture/ SHM may be contacted for the assistance to provide subsidy.

MEDICINAL AND AROMATIC PLANTS

Aloe Vera

Control of leaf spot in Aloe Vera

1. Keep field as weed free
2. Spraying of Mancozeb @ 0.3%

Coleus

Control of Root rot in Coleus

1. Irrigation water management is most important
2. Irrigate the field if necessary
3. Ridge planting is recommendation
4. Drenching with Bavistin 1% or copper oxychloride 0.3%

Cassia absus

Improving the seed germination in *Cassia absus*

1. Seed germination soaking of seed in ethrel 100ppm for 24 hours improve germination upto 50-70%

FLOWER CROPS

Marigold

1. Farmers are asking for marigold seed

Seed production will be increased and supplied to the farmers.

2. High yielding variety of Marigold

Germplasm collection has been under taken this year. These will be screened for high yield and bud multiplication will be done.

Asparagus

Asparagus is not coming up well.

Recently florosis has been developed in some of the areas. It may be due to soil or quality of water problem and advised to contact scientists with soil and water test reports.

Asparagus comes up well in all types of soils only under water logged condition and in problematic soils will not come up well.

Gerbera

1. Technology for growing gerbera
2. Please contact the floriculture scheme scientists for the information.
3. Floride toxicity in growing flower crops
4. Flower crops are sensitive to florosis. Hence soil and irrigation water have to be analyzed before they go for cultivating flower crops.

TECHNICAL SESSION-IV

(PLENARY SESSION)

(Problems identified through interaction with farmers, Officers of the department of Horticulture & Scientists. (Research & Extension Gaps))

MANGO

1. Identification, description of true Baneshan variety
2. Package of practices for high density planting.
3. Canopy management in more than 40 years old mango plants
4. Nutritional and irrigation requirements of more than 40 years old mango plants.
5. Fertigation in Mango
6. To study the non conversion of green pigment in some of the varieties like Rumani in Chittor district.
7. To study the research for the delay in flowering every year which is causing low yields.

CITRUS

1. Root stock for Calcarious soils of Nalgonda.
2. Identification of budlings on Rangapur lime and Rough lemon root stocks in the nursery stage.
3. Fertigation

GUAVA

1. To develop Red fleshed variety for processing.
2. Develop wilt resistant variety
3. Management of wilt disease
4. Fertigation

SAPOTA

1. Survey to identify the problems of low yields every year in Nellore District.
2. Pruning technique in Sapota
3. Fertigation in Sapota

PAPAYA

1. Varietal development to replace Taiwan variety (Red lady/786)
2. Resistant variety against ring spot and leaf curl virus

CASHEW

1. High density planting
2. Fertigation

TURMERIC

1. New improved variety with root rot resistance, high yields and Curcumin content.
2. Fertigation
3. Fabricate low cost boiling and curing machine

TREE SPICES

Intensify research on tree spices like Cumin.

VEGETABLES

1. Onion variety suitable for Kharif cultivation either by transplanting or direct sowing.
2. Wilt resist variety in Brinjal
3. Yellow vein mosaic virus resistant variety in Okra
4. Production of F_1 hybrids in vegetables
5. Herbicidal control of weeds in vegetables
6. Development of value added product of Tomato during glut by solar radiation
7. Fertigation.

MELONS

1. Develop high yielding varieties/hybrids
2. Develop varieties which produce maximum number of first grade fruits.
3. Fertigation

FLOWERS

Development of Marigold and Chrysanthemum varieties

GENERAL

1. Package of practices for organic production of Horticultural crops.
2. Fertigation information for all the Horticultural crops.
3. Water management for all the Horticultural crops.
4. Herbicidal control of weeds
5. Post harvest techniques and value addition in all the Horticultural crops
6. Study on the biofertilizers usage
7. Compatibility between different newly introduced pesticides, fungicides and chemicals.
8. Research on fabrication of weeders, harvesters drying and curing equipment, dehusking in coconut etc.

EXTENSION GAPS

MANGO

1. Control of Mango hopper, powdery mildew and Thrips
2. Control of fruit borer and stone weevil in Khammam District
3. Improving productivity in mango by micronutrient spray.
4. Pruning and canopy management
5. Rejuvenation of mango orchards in Khammam
6. Control of tip burning in Mango
7. Harvesting technology in Mango
8. Intercropping in Mango.

SWEET ORANGE

1. Control of Mangu on Sweet orange in Nalgonda
2. Package of practices for Sweet orange planted in calcareous soils of Nalgonda

GUAVA

Pruning in guava

CASHEW NUT

Control of Stem and root borer.

VEGETABLES

TOMATO

Control of Blight disease

COWPEA and PARAWAL

Popularization of cowpea and parawal varieties

Ridgegourd and Watermelon

Control of serpentine leaf miner in Ridgegourd and watermelon

CHILLI

Control of Midge

CABBAGE and CAULIFLOWER

Adpotion of IPM technology in Cabbage and Cauliflower.

TRELLING IN VEGETABLES

To conduct awareness programmes on trelling in vegetables.

Recommendations

1. To intensify the research to provide the raw material regularly to the processing industry.
2. Intensify the research on passion fruit, pineapple, strawberry, phalsa etc., as intercrops.
3. Device suitable intercultural and harvesting machines.
4. To develop and maintain crop museum in every station.
5. To develop CD's depicting the on going programmes and technology developed etc.,
6. To develop Vermicompost unit in the research station.
7. To increase the production of seed and plant material.
8. To establish multipurpose quality control labs.
9. To form the diagnostic teams with department of horticulture.
10. To formulate research on crop diversification and utility diversification.
11. To take up on farm trials wherever necessary and could not be conducted in the research stations with the coordination of department of horticulture.
12. Fertigation schedule in Horticulture crops (Bulletin) to be prepared obtaining the information from other states/research stations.

At the end of the Session/Day Dr.J.Dilip Babu, Principal Scientist (Head), VRS, Rajendranagar proposed Vote of thanks to all the participants, organizers, press and media etc.,

ANNEXURE-I

List of Titles of the Research Projects proposed for 2010-2011

FRUIT RESEARCH STATION, SANGAREDDY

Horticulture

S.No.	Code No.	Name of the project
1.	**AICRP PLAN**P2/91/AHD A-52/1120	Varietal collection, evaluation and maintenance of germplasm in mango
2.	P2/92/1-AHD/F-30/1120	Survey of seedling germplasm in mango
3.	P2/92/1-AHD/F-30/1120	Clonal selection of Banganapalli
4.	P2-2001/1-AHD/F-30/1120	Testing of two superior clones of 'Dashehari'
5.	P2/96/3-AHD/F-30/1120	Testing of the promising mango hybrids
6.	P2/96-AHD/F-30/1120	Root stock trial in mango
7.	P2/99/2-AHD/1120	Pruning trial for high density planting (double row) in mango
8.		Effect of different chemicals on regulation of flowering and fruiting in mango
9.		Pre harvest treatment for extending the post harvest shelf life of mango
10.		Effect of Calcium, Boron and Sorbitol on Pollination and Fruit set in Mango
11.		Evaluation of new hybrids of mango
12.		Performance of released hybrid/selections of mango
13.	P1/54/99/7/AHD/1116	Collection and evaluation of guava germplasm
14.	1.3.2	Varietal trial in guava
15.	P2/97/11 AHD F-25/1120	Evaluation of substrate dynamics for IPNM in Mango
16.	P2/98/2 AHD F-25/116	Evaluation of substrate dynamics for IPNM in Guava
17.		Nutritional Survey
18.		Fertigation scheduling for quality fruit production of mango
19.	NON – PLANP1/91-1/AHD-F60/1120	Effect of graded doses of organic and inorganic sources of nutrients on Mango
20.		Effect of packing material and storage intervals at low temperature (12.5^{o}C) on shelf life of mango Cv. Beneshan at maturity stage of 6-7^{o}B
21.		Effect of Post harvest chemical treatments and storage intervals at low temperature (12.5^{o}C) on Shelf life on mango Cv. Beneshan at maturity stage of 6-7^{o}B

22.		Drip Irrigation trial in Mango
23.		Varietal response to differential pruning in Pomegranate
24.		Effect of stress and defoliants on flowering behavior of Pomegranate Cv.Bhagawa
25.		Enhancement of Shelf life of pomegranate using Modified Atmospheric packing
26.	P1/03/AHD/1290	Fertilizer trial in Annona
27.		Studies on propagation of Guava by wedge grafting
28.		Studies on IPNM of Ginger
29.		Evaluation of varieties and pruning time for wine grapes

Plant Pathology

S.No.	Code No.	Name of the project
1.	P2/83-1/AHD-H20/1120	Screening of germplasm against powdery mildew disease in mango
2.	P2/85-4/AHD-H20/1120	Studies on mango malformation
3.	P2/87-3/AHD-H20/1120	Epidemiological studies of mango powdery mildew
4.	P2/2006-1/AHD-H20/1120	Management of mango anthracnose
5.	P2/2006-1/AHD-H20/1120	Management of Blossom blight of mango
6.	P2/2006-2/AHD-H20/1120	Seasonal occurrence of different diseases of Mango
7.	P2/2007-1/AHD-H20/1120	Study on variability of *Colletotrichum gloeosporloides* penz., causing Anthracnose disease of Mango (*Mangifera inidca* L.)
8.	P2/2207-1/AHD-H20/1120	Bio-intensive management of *colletotrichum gloeosporloides* penz., causing Anthracnose disease of Mango (*Mangifera inidca* L.)
9.	STATE PLAN	Intensification of Horticulture Research on Pomegranate
10.	P1/2008/AHD-H20/1120	Management of blackening of fruits (mangu) in Mango

Entomology

S.No.	Code No.	Name of the project
1.	**ICAR PLAN**P2/98/AHD/1120	Screening of germplasm against mango stone weevil *Sternochetus mangiferae*
2.	P2/87/3/AHD/1120	Crop loss assessment in mango due to hopper
3.	P2/98/4/AHD/1120/IPM/MH	Integrated Pest management of mango hopper
4.	P2/2006-1/AHD/1120	Population dynamics of major pests of mango (Hopper and fruit fly)

5.	P2/2006/AHD/1120	Survey and Surveillance of Pollinators
6.	P1/2005/AHD/1120	Management of Scales of mango
7.	P1/2007-1/AHD/1120	Efficacy of insecticides on mango hopper and their dissipation pattern in mango fruits.
8.	P1/2007-2/AHD/1120	Identification of Fruitfly in sitaphal and its management
9.	P1-08/1-AHD/1120	Management of scales in mango using Botanicals.
10.	**State plan**	IPM Package for reducing residues in export quality mangoes by using optimum number of sprays and organic alternatives.
11.		Population dynamics of major pests of Pomegranate

GRAPE RESEARCH STATION, RAJENDRANAGAR

S.No.	Code No.	Name of the project
1.	P2-96/HD-ADC-0940	Collection and evaluation of germplasm
2.	P2-96/HD-ADO-0940	Varietal trial with reference to raisin making
3.	P2-93/HD-ADO-0940	Performance of promising seedless hybrids
4.	P2-95/HD-ADO-0940	Performance of promising seeded hybrids
5.	P2-96/HD-ADO-0940	Rootstock trial
6.	P2-03/HD-ADO-0940	Evaluation of varieties for export purpose
7.	P2-2007/HD-ADO-0940	Evaluation of table and raisin varieties
8.	P2-2007/HD-ADO-0940	Evaluation of juice and wine varieties
9.	P2-2007/HD-ADO-0940	Evaluation of commercial varieties on different rootstocks
10.	P1-2005/HD-ADC-0940	Collection, maintenance and evaluation of germplasm
11.	P2-2000/HD-ADO-0940	Evaluation of varieties for juice and wine making on 110 R root stock
12.	P2-2009/HD-ADO-0940	Evaluation of varieties for table and raisin making on 110 R root stock
13.	P2-2009/HD-ADO-0940	Evaluation of commercial varieties on 110 R, Dogridge, 1103 P root stocks

VEGETABLE RESEARCH STATION, RAJENDRANAGAR

S.No.	Code No.	Name of the project
1.	P2/96/AHD-H20/1500	Survey and surveillance of pests and diseases in tuber crops in AP (ICAR)
2.	P2/08/AHD-H20/1587	Integrated Disease Management in elephant foot yam. (ICAR) (2008)

3.	P2/05/AHD-H20/1587	Evaluation of colocasia lines for Phytophthora leaf blight resistance/tolerance. (ICAR) (2007-08)
4.	P2/07/AH/H10/1587	Management of sweet potato weevil through barrier crops of yam bean and marigold (ICAR) (2007)
5.	P2/08/AHD/H10/1587	Sweet potato weevil management by bio-pesticides and microbial agents (ICAR)
6.	P2/08/AHD/H20/1587	Biointensive management of taro leaf blight (2008)

Plant Breeding

S.No.	Code No.	Name of the project
1.	P2-87/1/AHD-F.30/1820	Collection, evaluation and conservation of pumpkin germplasm
2.	P2-08/1-CXX-F30/1690	Collection, evaluation and conservation of Amaranthus Germplasm
	Varietal Trials	
3.	P2/07/4-CXX-F30/1820	Ash gourd AVT-1
4.	P2/06/3-CXX-F30/1820	Ash gourd AVT-II
5.	P2/07/4-CXX-F30/1850	Tomato (Determinate) AVT-I
6.	P2/06/1-CXX-F30/1850	Tomato (Determinate) AVT-II
7.	P2/07/2-CXX-F30/1850	Tomato (Indeterminate) AVT-I
8.	P2-06/2-CXX-F30/1822	Pumpkin AVT-II
9.	P2-08/3-CXX-F30/1740	Onion (*Rabi*) AVT-I
10.	P2-08/4-CXX-F30/1740	Onion (*Rabi*) AVT-II
11.	P2-08/5-CXX-F30/1720	Garlic (*Rabi*) IET
12.	P2-08/6-CXX-F30/1720	Garlic (*Rabi*) AVT-I
13.	P2-08/9-CXX-F30/1840	Okra Hybrid IET
14.	P2-07/5-CXX-F30/1840	Okra Hybrid AVT-I
15.	P2-08/7-CXX-F30/1850	Tomato Hybrid (Indeterminate) IET
16.	P2-08/8-CXX-F30/1850	Tomato Hybrid (Indeterminate) AVT-1
17.	P2-07/6-CXX-F30/1820	Pumpkin Hybrid AVT-I

ARI, FLORICULTURE, RAJENDRANAGAR

Horticulture

S.No.	Code No.	Name of the project
1.	P2/2002/2.1/CXX.F30/3300	Collection, maintenance and evaluation of Gladiolus germplasm
2.	P2/99/4.1/CXX/F30/3300	Collection, preliminary assessment and maintenance of chrysanthemum germplasm
3.	P2/2007/3.1A/CXX.F30/3300	Enrichment of carnation germplasm for genetic enhancement

4.	P2/2007/3.1B/CXX.F30/3300	Assessment of newly developed carnation cultivars
5.	P2/99.7.1A/CXX.F30/3300	Collection, evaluation and maintenance of tuberose germplasm
6.	P2/99/7.1B/CXX.F30/3300	Testing of new cultivars of tuberose
7.	P1/2007/8/CXX.F30/3300	Assessment of Rose cultivars under naturally ventilated poly house.
8.	P2/2009/14.1/CXX.F30/3300	Collection, evaluation and improvement of cut foliage and fillers (asparagus, gypsophila, ferns and philodendron)
9.	P2/2007/2.3/CXX.F30/3300	Integrated nutrient management in Gladiolus
10.	P2/2007/3.2/CXX.F30/3300	Integrated nutrient management in Carnations
11.	P2/2009/4.4/CCX.F30/3300	Integrated nutrient management in Chrysanthemum
12.	P2/2009/4.5/CXX.F30/3300	Standardization of media composition for pot mum production (open conditions) in Chrysanthemum
13.	P2/2009/7.2/CXX.F30/3300	Integrated nutrient management in Tuberrose

Plant Physiology

S.No.	Code No.	Name of the project
1.	P2/2006/1/CHD-F130/3300	Studies on the wet storage of cut gladiolus spikes in relation to stage of harvest
2.	P2/2006/2/CHD-F130/3300	Studies on the dry refrigerated sorage of cut gladiolus spikes with pre-storage pulsing treatment
3.	P2/2006/3/CHD-F130/3300	Varietal response to storage of cut gladiolus spikes
4.	P2/2006/4/CHD-F130/3300	Standardization of pulsing solutions for improving vase life of carnation flowers
5.	P2/2006/5/CHD-F130/3300	Effect of wrapping materials on simulated transit of cut carnations
6.	P2/2006/6/CHD-F130/3300	Studies on the wet storage of cut carnation stems
7.	P2/2006/7/CHD-F130/3300	Standardization of holding solutions for improving keeping quality of cut carnation stems.
8.	P2/2006/8/CHD-F130/3300	Studies on the wet storage of cut chrysanthemum stem
9.	P2/2006/9/CHD-F130/3300	Standardization of holding solutions for improving keeping quality of cut chrysanthemum stems
10.	P2/2006/10/CHD-F130/3300	Effect of holding solutions on keeping quality of cut tuberose flowers.
11.	P2/2006/11/CHD-F130/3300	Studies of refrigerated storage of cut tuberose stems.

S.No.	Code No.	Name of the project
1.	RKVY	Staggered planting technologies for flower, corm and cormel production in Gladiolus

2.	RKVY	To standardize the horticultural techniques for captive cultivation of Gerbera to different agro climates of Andhra Pradesh.
3.	RKVY	Studies on different bending and pruning techniques for captive cultivation of exotic Roses
4.	RKVY	To develop horticultural techniques for cultivation of flower and leaf fillers in three regions of Andhra Pradesh
5.	RKVY	Standardization of techniques for continuous growth and production in Jasmine
6.	RKVY	Standardization of techniques for preponing and postponing flowering season for extending harvesting period in Chrysanthemum

HERBAL GARDEN SCHEME, HYDERABAD

S.No.	Code No.	Name of the project
1.	F1-89/1-AHD-F-30	Collection, maintenance and conservation of medicinal plants germplasm
2.	F1-89/2-AHD-F-30-2200	Collection, maintenance and evaluation of aromatic plants germplasm.
3.	F1-89/3-AHD-F-30-2200	Improvement of seed germination in *Cassia absus* L.
4.	F1-89/4-AHD-F-30-2200	Standardization of method of sowing and plant population for yield maximization of aswagandha (*Withania somnifera* Dunal)
5.	F1-89/5-AHD-F-30-2200	Standardization of season, size of the cutting and growth regulators for propagation of guggul (*Commiphora wightii* (Arn.) Bhand) through semi-hard wood stem cuttings.
6.	F1-89/6-AHD-F-30-2200	Studies on the effect of organic manures on Seed yield of Isabgol (*Plantago ovata*)
External Projects		
7.		Facilitation center for Quality Planting Material, Certification and Standardization of Technology for Medicinal Plants(National Medicinal Plants Board-Government of India.)
8.		Technology dissemination through frontline demonstration of organic farming in Medicinal and Aromatic plants (National Medicinal Plants Board-Government of India.)
9.		Establishment of Sanitary and Phytosanitary laboratory (State Horticulture Mission)
10.		Micro propagation of Medicinal plants (Government of India)

HORTICULTURAL RESEARCH STATION, ASWARAOPET

S.No.	Code No.	Name of the project
1.	P1-89/20-AHD-F-30/1120	Studies on the Performance of certain Mango Cultivars
2.	P1-92/18-AHD-F-30/190	Studies on the performance of Sapota cultivation
3.	P1-09/1-AHD-H-10/1116	Effect of high density planting and training method on yield and quality of guava cv.Arka Mrudula
4.	P1-09-AHD-E	Effect of date of planting on loss of yield of Papaya due to viral infestations
5.	P1-09/1-AHD-F30/1120	Demonstration of prevention of Mangu disease in Mango (Observational trail)
6.	P1/09-AHD	Studies on increasing water use efficiency in oil plam
7.	P1-09/1-AHD-F-30/0311	Demonstration on multistoried cropping in coconut
8.	P1-09/-AHD/F-30/1120	Influence of foliar nutrition on flowering and fruit yield of Mango
9.	P1-09/-AH/-F-30/1120	Clonal selection and evaluation of Mango cv Baneshan
10.	P1-09/-AH/-F-30/1120	Studies on the effect of high density planting on yield and quality of Mango
11.a	P1-09-AHD	Standardization of variety and training system of passion fruit under Aswaraopet conditions.
11.b	P1-09-AHD	Standardization of grafting/budding for commercial multiplication of passion fruit under poly house conditions (with mist facility)
12	P1-09-AHD	Standardization of varieties and pruning time for wine grapes under Aswaraopet condition.
13.	P1-09/-AH/-F-30/1120	Exploratory trail on preponing the harvesgting in Mango cv Totapuri
14.	P1-09-AHD	Demonstration of improved technologies of banana

Vegetables

S.No.	Code No.	Name of the project
1.	P1-2003/6-AHD-F-30/1829	Survey, Collection & Maintenance of germplasm of Agakara (M dioica)
2.	P1-09-AHD	Performance of different varieties of gherkins with different dates of planting
3.	P1-09-AHD	Performance of different varieties of pointed gourd under Aswaraopet conditions
4.	P1-09-AHD	Studies on the production of capsicum under poly house conditions.
5.	P1-09-AHD-F30/1850	Studies on the production of tomato under poly house conditions.

6.	P1-09-AHD	Effect of dates of planting on performance of summer varieties of Cauliflower
7.	P1-09-AHD-F30/1850	Demonstration of organic productions of Tomato
8.	P1-09-AHD-F30/1850	Studies on nutrient and water use efficiency in tomato through drip irrigation and fertigation
9.	P1-09-AHD-F30/1850	Effect of mulching in increasing water use efficiency in Tomato

HORTICULTURAL RESEARCH STATION, ADILABAD

S.No.	Code No.	Name of the project
1.	RKVY/ADB/01/2008-GC	Standardization of horticultural techniques for captive cultivation of Gerbera & Carnations to different agro-climates of Andhra Pradesh
2.	RKVY/ADB/02/2008-R	Pruning and bending techniques for improving yield and quality of Rose flower under protected cultivation
3.	F3/2004/3-AHD	Evaluation of gladiolus varieties suitable to Adilabad district under Telangana zone.
4.	V1/2009/4-AHD	Evaluation of tomato varieties/cultivars suitable for Adilabad district
5.	V2/2009/5-AHD	Low cost management of high temperature in tomato F1 hybrids cultivation
6.	V3/2009/6-AHD	Effect of plant growth regulators on the growth and yield parameters of bitter gourd.
7.	V4/2009/7-AHD	Effect of plant growth regulators on the growth and yield parameters of ridge gourd.

HORTICULTURAL RESEARCH STATION, MALYAL

1. Evaluation of varietal and local selections in chilli
2. Evaluation of Paprika genotypes under irrigated conditions.
3. Evaluation of Onion varieties
4. Standardization of Onion productions by organic farming
5. Studies on the performance of Mango (variety Baneshan) under different spacing (High density planting)
6. To Study the effect of fertigation on yield and quality of chilli
7. To study the performance of Amla varieties.
8. To study the effect of organic manures in combination with nitrogenous fertilizers on growth and yield on Bhendi
9. Multi location testing of promising canker tolerant Acid lime selections/clones

HORTICULTURAL RESEARCH STATION, KAMMARPALLY

1. Germplasam collection, characterization, evaluation and conservation
2. CVT 2004 – Series – VI
3. Comparative yield trial 2005-06
4. Genotype X Environment interaction on quality of turmeric
5. Management of foliar diseases in turmeric
6. Screening of germplasmlines cultures against Turmeric leaf blotch, leaf spot & Rhizome rot
7. Standardization of fertigation in turmeric

Seed multiplication

1. Seed production of PCT-13
2. Seed production of Duggirala red
3. Demonstration plot (Nizamabad Local, PCT-13 and Duggirala red)

On going Experiments at TRS, Kammarapally

Survey and monitoring of turmeric diseases.

HORTICULTURAL RESEARCH STATION, MALLEPALLY

S.No.	Code No.	Name of the project
1.	p-2008	Clonal selections in Sweet orange
2.	p-2008	Coloured clonal selections of Baneshan mango
3.	RKVY-2-2009	Standardization of cultural practices/chemical sprays of crop regulation in Sweet orange
4.	RKVY-1-2009	Development of IDM for management of Dry root rot in sweet orange
5.	p-2007/2-AHD-1060	Effect of growth retardants and chemicals on stress induction of Sathgudi Sweet Orange
6.	p-2007/2-AHD	Standardization of Organic farming in Sathgudi Sweet Orange
7.	p-2007/4-AHD/3400	Effect of Integrated Nutrient Management on yield and quality of Sapota var kalipatti
8.	RKVY-3-2009	Biochemical status in relation to fruit drop in Sweet orange

ANNEXURE-II

List of Participants - Farmers

S.No.	Name of the Farmer	Address
	Sarvasri	
1.	V. Ramulu	
2.	Anketi Umamaheswara Rao	Dammapeta (M), Khammam (Dt.)
3.	Kurra Bhaskara Rao	Vepakuntla (PO & V), Khammam (Dt.)
4.	Nallapu Subba Rao	Dammapeta (M), Khammam (Dt.)
5.	Kasarla Srisailam	Kandhukoor
6.	Y.Bhadrappa	
7.	B. Ravi Kumar	Balampur
8.	P. Malla Reddy	Balanagar
9.	B. Sangeetha	Bakapur
10.	K. Avanija, REC Member	Suryapet, Nalgonda (Dt.)
11.	V. Rama Krishna Prasad	Padapalem, Tenali, Duggirala (M)
12.	Y. Venu Gopal Reddy	Kalvakurthi, Mahaboobnagar (Dt.)
13.	Y.Nirup Reddy	Veldanda, Mahaboobnagar (Dt.)
14.	Y. Eswar Chandra	Kalvakurthi, Mahaboobnagar (Dt.)
15.	Nimala Anji Reddy	Gurrampalem, Nalgonda (Dt.)
16.	Rajeswara Rao	
17.	G. Surender Reddy	Nedunoor
18.	Zaheer Baig	Nedunoor
19.	K. Seeta Ramaiah	T.P.Gudem
20.	B. Siva Kumar	Kummarigadda, Shadnagar
21.	T.Prabhakar Reddy	Kummarigadda
22.	K. Ravindra Reddy	Arutla
23.	N. Sai Reddy	Arutla
24.	K. Bucha Reddy	Adilabad
25.	V. Ganga Reddy	Adilabad
26.	Pannala Vasu	Adilabad
27.	A. Srinivasa Reddy	Adilabad
28.	Y. C. Ranga Reddy	Adilabad
29.	G. Konda Reddy	Adilabad
30.	P. Mahipal Reddy	Kandukoor
31.	K. chenna Krishna Reddy	Kandukoor
32.	N. Raji Reddy	Siddipet
33.	A. Manohar Reddy	Shadnagar
34.	K.V. Ramana Rao	16-Vikaspuri, Hyderabad-38
35.	S. Shiva Shankar	Ameer pet, Hyderabad
36.	G. Karunakar	A.Kummarayya colony
37.	G. Srisailam	A. Kummarayya colony
38.	K.V.N.C. Reddy	Alwal
39.	V.Gopal Reddy	M.C. Pally
40.	B. Venkat Reddy	Adibatla
41.	R.A. Ray	
42.	B. Abhilash Reddy	Adibatla
43.	B. Purshotham Reddy	Adibatla
44.	A. Reddy	A.K. Cheruvu
45.	G.Rama Krishna Reddy	Mucherla
46.	Sridhar	Lemur, Kandukur
47.	B. Surendar Reddy	Nedunoor
48.	S. Ravinder Rao	Zaheerabad.

ANNEXURE-III

List of Participants – (Department of Horticulture & other institutes)

S.No.	Name of the Officer	Designation
	Sarvasri	
1.	R. Srinivasa Rao	A.D. (Horticulture), Khammam
2.	B. pandu Ranga	A.D. (Horticulture)-I, Khammam
3.	P.Sunitha	A.D. (Horticulture)-II, Nalgonda
4.	M.Saravanan	A.D. (Horticulture)-I, Warangal
5.	G.Yugandhar	A.D. (Hortiuculture)-II, Nizamabad
6.	K. Suryanarayana	A.D. (Hortiuculture)-II, Karimnagar
7.	M.V.Ramana	A.D. (Hortiuculture), Adilabad
8.	Dr. M.G.Deva Mohan Reddy	A.D. (Hortiuculture)-I, Rangareddy
9.	M. Venkateswara Rao	Joint Director, Horticulture
10.	O.Laxman Rao	Deputy Director of Horticulture
11.	D. Umadevi	A.D.Horticulture
12.	B. Sridhar	Horticulture Officer, Sangareddy
13.	K.Suresh	Horticulture Officer, Siddipet, Medak
14.	G.Suvarna	A.D. (Horticulture), Karimnagar
15.	Shyam Rao Rathoad	Horticulture Officer, Adilabad, Nirmal
16.	V. Vijay Bhaskar	A.D. (Horticulture)-I, Malyal

ANNEXURE-IV

List of Participants – (Scientists of APHU)

S.No.	Name of the University Officers/Scientist	Designation
	Sarvasri	
1.	K. Uma Maheswari	Scientist (Hort.) & Head, TRS, Kammarapally, Nizamabad (dt.)
2.	Dr. M.Vijya	Principal Scientist, ARI, VRS, Rajendranagar, Hyderbad.
3.	P.Madhavi Latha	ARI, VRS, Rajendranagar, Hydrbad
4.	Dr. Hameedunnisa Begum	Senior Scientist (Hort.), ARI, VRS, Hyderabad.
5.	V.Gopala Krishna	Scientist (Crop production), DAATTC, Nalgonda
6.	Dr. A.S. Padmavathamma	AICRP on Floriculture
7.	P. Lalitha Kameswari	AICRP on Floriculture
8.	Dr. K. Purushotham	Director of Research, APHU
9.	Dr. G. Rao Reddy	Scientist, (Pl.path), GRS, Rajendranagar
10.	Dr. G.Sreehari	Senior Scientist, HRS, Malyal
11.	M. Ravindra Babu	HRS, Aswaraopet
12.	Dr. B.K.M. Lakshmi	VRS,Rajendranagar, Hyderabad.
13.	Dr. G.S.N.Reddy	Herbal garden,
14.	Dr. M. Siva Prasad	Scientist (Hort.), HRS, Adilabad
15.	S. Narasimha Rao	Scientist, (Pl.Path) TRS, Kammarapally
16.	D. Lakshminarayana	Scientist (Hort.) HRS, Aswaraopet
17.	A. Kiran Kumar	Scientist (Hort.) FRS, Sangareddy
18.	Dr. R.Dhanunjaya Rao	VRS, Rajendranagar
19.	Dr.R.V.S.K.Reddy	VRS, ARI, Rajendranagar
20.	M. Thirupathi Reddy	Scientist, VRS, ARI, Rajendranagar
21.	D.Vijaya	Scientist (SS)
22.	S.A.Reddy	A.D. (Horticulture)
23.	Dr.K.V.Seshadri	Director of Extension, APHU
24.	Dr. K. Sireesha	Scientist (Ento.), ARI, Vegetables
25.	M. Hanuman Naik	Scientist (Hort.), HRS, Malyal
26.	Dr. A. Bhagavan	Senior Scientist (Hort.), FRS, Sangareddy
27.	G. Narashimhulu	S.R.F. (Vegetable Scheme)
28.	B. Venkateswara Rao	Scientist (Hort.)
29.	B. Srinivas Rao	Senior Scientist (Hort.), GRS, Rajendranagar
30.	Ch.Saradah	S.R.F. VRS, ARI, Rajendranagar
31.	G.Sandeep Reddy	S.R.F., VRS, Rajendranagar
32.	Dr. Syed Ismail	Associate Dean, CoH, Mojerla
33.	V.S.Rao	CRIDA, Hyderabad
34.	T.B.Gour, REC Member	Retd. Professor (Ento.)

35.	Dr. T.Susila	Scientist (Hort.) Herbal Garden, Rajendranagar
36.	B. Ramesh Babu	Scientist (Hort.), HRS, Mallepally
37.	Dr.D. Manohar Prasad	Senior Scientist (Hort.) GRS, Rajendranagar
38.	Dr. T. Bhupal Reddy	Scientist
39.	P. Sunitha	Scientist, (Hort.), Herbal Garden, Rajendranagar
40.	J. Dilip Babi	Scientist (Hort.)
41.	P. Veeranna Goud	Professor, College of Horticulture, Rajendranagar
42.	Dr.D.Sri Hari	Professor, (Hort.)
43.	M. Pratap	Professor, (Hort.)
44.	Dr.B. Padmodaya	Principal Scientist and Coordinator
45.	Md. Ali	
46.	Dr.A. Girwani	FRS, Sangareddy
47.	Dr. D.Anitha	FRS, Sangareddy
48.	Dr. A. Ranga Reddy	Principal Scientist, GRS, Rajendranagar.

ANNEXURE-V

List of Participants – (Press and Media)

S.No.	Name	Address
	Sarvasri	
1.	K.Srinivasa Reddy	Senior Sub Editor, Annadata
2.	V. Nageswara Rao	Rythunestham
3.	A. S. Reddy	Rythunestham
4.	A. Bramaiah	Andhrajyothi
5.	B. Anjaiah	Zee TV
6.	M. Dhamodar Reddy	Vaartha
7.	P. Venkatesh	Sakshi
8.	M. Manikyam	ABN
9.	Surya Narayana	Surya
10.	K. Chandrakanth	I news
11.	M. Premrai	Andhra Bhoomi
12.	M. Ravi Kanth	Prajasakthi
13.	V.Charulu	Andhra Prabha
14.	T. Venkataiah	HMTV
15.	Ramesh Kumar	Agriculture Today
16.	Surya Kiran	Agriculture Today
17.	T. Vidya Sagar	Agriculture Today
18.	Smt. T.Prasanna	AIR, Hyderabad
19.	Smt. Balakameswari	AIR, CC

ANNEXURE-VI

List of Participants – (Private Companies)

S.No.	Name	Address
	Sarvasri	
1.	S. Hari Prasada Rao	Bayer Crop Science
2.	P. Venkat Reddy	Meghana Organics Limited
3.	E.Shankar	Meghana Organics Limited
4.	B. Praveen	Bayer Crop Science

ANNEXURE-VII

List of Participants – (Group discussion/interaction)

FRUITS AND VEGETABLES

S.No.	Name	Designation & Address
1.	B. Pandu Ranga	ADH-I, Khammam
2.	Kurra Bhaskara Rao	Farmer
3.	R. Srinivasa Rao	AD, (Horticulture)
4.	A. Umamaheswara Rao	Malekavaram
5.	P. Sunitha	ADH-II, Nalgonda
6.	K. Seeta Ramaiah	Farmer (W.G.Dt.)
7.	M. Ravindra Babu	Scientist, HRS, Aswaraopet
8.	B. Ramesh Babu	Scientist, HRS, Mallepally
9.	M. Nagendra	ADH-II, Mahaboobnagar, H.O.
10.	Dr. D. Manohar Prasad	Sr.Scientist (Head), GRS, Rajendranagar
11.	D. Lakshminarayana	Scientist (H), HRS, Aswaraopet.

ANNEXURE-VIII

List of Participants – (Group discussion/interaction)

SPICES AND PLANTATION CROPS

Sl.No.	Name	Designation & Address
1.	Dr.A.S.Padmavathamma	Principal Scientist (Hort.), AICRP on Floriculture, ARI, Rajendranagar, Hyd-30
2.	Dr.G.Satyanarayana Reddy	Senior Scientist (Hort.), Herbal gardens, Rajendranagar, Hyderabad-30
3.	Dr. Suseela	Scientist (Hort.), Herbal gardens, Rajendranagar, Hyderabad-30
4.	Dr. Devamuni Reddy	ADH
5.	Sri K. Narasimha Reddy	
6.	Sri N. Ravi	
7.	Sri. G. Venkata ReddY	
8.	Sri K.Madhusudan Reddy	
9.	Sri K. Sadasiva Reddy	
10.	Sri G. Pulla Reddy	
11.	Sri S. Sivasankar	Ananthapur
12.	Sri P.Ravindra Rao	Zaheerabad, Medak District
13.	Sri K.V.Ramana Rao	Moinabad, Rangareddy District
14.	Sri Raji Reddy	Siddipet,Nalgonda Distirct

ANNEXURE-IX

List of Participants – (Group discussion/interaction)

FLOWERS

Sl.No.	Name	Designation & Address
1.	Dr.A.S.Padmavathamma	Priincipal Scientist (Hort.), AICRP on Floriculture, ARI, Rajendranagar, Hyd-30
2.	Dr.G.Satyanarayana Reddy	Senior Scientist (Hort.), Herbal gardens, Rajendranagar, Hyderabad-30
3.	Dr. Suseela	Scientist (Hort.), Herbal gardens, Rajendranagar, Hyderabad-30
4.	Dr. Devamuni Reddy	ADH
5.	Sri K. Narasimha Reddy	
6.	Sri N. Ravi	
7.	Sri. G. Venkata ReddY	
8.	Sri K.Madhusudan Reddy	
9.	Sri K. Sadasiva Reddy	
10.	Sri G. Pulla Reddy	
11.	Sri S. Sivasankar	Ananthapur
12.	Sri P.Ravindra Rao	Zaheerabad, Medak District
13.	Sri K.V.Ramana Rao	Moinabad, Rangareddy District
14.	Sri Raji Reddy	Siddipet, Nalgonda Distirct