ANDHRA PRADESH HORTICULTURAL UNIVERSITY

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

PROCEEDINGS OF
ZONAL RESEARCH & EXTENSION ADVISORY COUNCIL MEETING

2010-2011

RAYALASEEMA ZONE

(Chittoor, Kadapa, Kurnool, Anantapur, Prakasam and Nellore districts)

28th APRIL, 2010

CITRUS RESEARCH STATION

TIRUPATI, CHITTOOR DISTRICT-517 507

ANDHRA PRADESH HORTICULTURAL UNIVERSITY

RAYALASEEMA ZONE

(Chittoor, Kadapa, Kurnool, Anantapur, Prakasam and Nellore districts)

PROCEEDINGS OF

ZONAL RESEARCH & EXTENSION ADVISORY COUNCIL MEETING

2010-2011

28th APRIL, 2010

CITRUS RESEARCH STATION

TIRUPATI, CHITTOOR DISTRICT-517 507

INDEX

S.No.	Contents	Page Nos.
1.	Technical Session – I (Inaugural Session) (Presentation of Research Results)	02
2.	Salient Research Results of Rayalaseema Zone	03
3.	Technical Session – II (Crop wise production recommendations)	12
4.	Technical Session – III (Crop wise presentations & Interaction with Farmers and Horticultural Officers)	25
5.	Technical Session – IV (Plenary Session) Problems identification (Research & Extension Gaps) through interaction with Farmers, Officers of the Department of Horticulture & Scientists	30
6.	Annexure – I (List of the Titles of the Research Projects proposed for 2010-2011)	34
7.	Annexure – II List of Participants – (Farmers)	39
8.	Annexure – III List of Participants – (Department of Horticulture & Other Institutes)	43
9.	Annexure – IV List of Participants – (Scientists of APHU)	44
10.	Annexure – V List of Participants – (Press and Media)	45
11.	Annexure – VI List of Participants – Fruits, Spices and Plantation Crops (Group discussion/interaction)	45
12.	Annexure – VII List of Participants – Vegetables (Group discussion/interaction)	46
13.	Annexure – VIII List of Participants – Flower Crops (Group discussion/interaction)	46

ANDHRA PRADESH HORTICULTURAL UNIVERSTIY

RAYALASEEMA ZONE

ZONAL RESEARCH AND EXTENSION ADVISORY COUNCIL MEETING

2010-2011

28TH APRIL, 2010

PROGRAMME

Venue: S.V.Veterinary University Auditorium, Tirupati

INAUGURAL SESSION

(TECHNICAL SESSION-I)

(PRESENTATION OF RESEARCH RESULTS)

10.00 AM	Invocation & Lighting of Lamp	
10.05 AM	Welcome	: Dr.K.V.Seshadri Garu Director of Extension, APHU, Tadepalligudem
10.10 AM	Presentation of Research Highlights	: Dr.B.Srinivasulu Garu Controller of Examination APHU, Tadepalligudem
10.40 AM	Address by Chief Guest	: Dr.V.Rajagopal Garu, Former Director, CPCRI, Kasargod
11.00 AM	Address by Guest of Honor	: Sri.V.Jayarami Reddy Garu Member, Board of Management APHU, Tadepalligudem
11.30 AM	Address by	: Assistant Director of Horticulture Commissionerate of Horticulture Hyderabad
11.40 AM	Presidential remarks	: Dr.S.D.Shikhamany Garu Hon'ble Vice-Chancellor APHU, Tadepalligudem
	Vote of thanks	: Dr.B.Srinivasulu Garu Controller of Examination APHU, Tadepalligudem

TEA BREAK

TECHNICAL SESSION-II

Crop wise production technology recommendations

Time 12.00 – 1.30 PM

Address by REC members : Sri. G.Venkatramaraju Garu
: Sri. P. Raghavendra Rao Garu
: Sri.T.N.V.Sanjeeva Reddy Garu
: Smt. N.Aruna Reddy Garu

Major problems faced by Horticultural farmers of Ananthapur, Chittoor, Kadapa, Kurnool, Nellore and Prakasam districts.

Ananthapur District	Farmers, Asst. Director of Horticulture
Chittoor District	Farmers, Asst. Director of Horticulture
Kadapa District	Farmers, Asst. Director of Horticulture
Kurnool District	Farmers, Asst. Director of Horticulture
Nellore District	Farmers, Asst. Director of Horticulture
Prakasam District	Farmers, Asst. Director of Horticulture

Chairman **Dr.B.Sreenivasulu, Controller of Examination**

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

Rapporteurs **Smt. Madhumathi, Scientist (Hort.)**
Dr.D.Srinivas Reddy, Scientist (Ento.)
Smt. A.Snehalatharani Scientist (PP)

LUNCH BREAK 1.30 PM – 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 -4.30 PM

Resource Persons

Dr.A.Bhagwan, Senior Scientist (H) FRS, Sangareddy	: Mango, Guava, Sapota
Dr.K.Gopal, Principal Scientist (CP) CRS, Tirupati	: Citrus
Dr.A.Ranga Reddy, Principal Scientist (Ento) GRS, Rajendranagar	: Grapes
Sri. D.Madhava Rao, Senior Scientist (H) HRS, Darsi	: Banana, Turmeric
Dr.K.Subramanyam, Senior Scientist (Pl.Path) HRS, Ananthapur	: Pomegranate
Dr.R.V.S.K.Reddy, Principal Scientist (H) HRS, Rajendranagar, Hyderbad	: Vegetables
Dr.B.Srinivasulu, Senior scientist (H) HRS, Anantharajupet	: Onion, Papaya
Smt. C.Madhumathi, Scientist (H) HRS, Anantharajupet	: Flower Crops

Chairman : **Dr.K.V.Seshadri, Director of Extension, APHU**
Co-Chairman : **Dr.B.Srinivasulu, Controller of Examination, APHU**

Rapporteurs : **Dr.K.Subramanyam, Senior Scientist (PP)**
Smt. G.Thanuja Sivaram, Scientist (Hort.)

TECHNICAL SESSION-IV

(PLENARY SESSION)

Time 4.00 - 5.00 PM

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

Chairman : **Dr.S.D.Shikhamany, Vice-Chancellor, APHU**
Rapporteurs : **Dr.B.Srinivasulu, Controller of Examination, APHU**
Dr.K.V.Seshadri, Director of Exension, APHU

Vote of Thanks : **Dr.B.Srinivasulu, Senior Scientist (Hort.),**
HRS, Anantharajupet

ANDHRA PRADESH HORTICULTURAL UNIVERSITY

VENKATARAMANNAGUDEM, WEST GODAVARI DISTRICT-534101

PROCEEDINGS OF THE ZONAL RESEARCH AND EXTENSION ADVISORY COUNCIL MEETING OF RAYALASEEMA ZONE 2010 -2011 HELD AT TIRUPATI, CHITTOOR DISTRICT

VENUE : S.V.VETERINARY UNIVERSITY AUDITORIUM, TIRUPATI, Date: 28th April, 2010

The Zonal Research and Extension Advisory Council (ZREAC) meeting of Rayalaseema Zone - 2010-2011 (Chittoor, Kadapa, Kurnool, Anantapur, Prakasam and Nellore districts of Andhra Pradesh) was held on 28th **April, 2010** at S.V.Veterinary University Auditorium, Tirupati, Chittoor district. Officers from Department of Horticulture, Scientists of APHU, Officers from S.V.Veterinary Unviersity, Line departments and progressive farmers from the above mentioned 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.V.Rajagopal, former Director, CPCRI, Kasargod. The other guests of honour were Sri V. Jayarami Reddy, Member, Board of Management, APHU and Sri Challa Amarnatha Reddy, Member, Board of Management. The other dignitaries on the dias were Dr.K.V.Seshadri, Director of Extension, Dr.B.Srinivasulu, Controller of Examinations, Dr. Satyanarayana Reddy, Director of Extension, S.V.Veterinary University, Tirupati, Dr. K. Raja Reddy, ADR, RARS, Tirupati (ANGRAU), DDH, Chittoor, ADHs of Chittoor, Kadapa, Kurnool, Anantapur, Nellore and Prakasam districts, Smt. Aruna Reddy, Sri P.Raghavendra Rao and Sri Venkatramaraju, 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 throughly 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 a 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 presidential note 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 serve the farmers better. He also expressed that lot of scope for growing horticultural crops in Rayalaseema.

Dr. B. Srinivasulu, Controller of Examination, APHU, on behalf of Director of Research, APHU has presented the salient Research Results of the work carried out during 2009-10 in this zone.

The chief guest Dr. V. Raj Gopal, Former Director, CPCRI, Kasargod expressed that face to face interaction of farmers and Scientists will help in better identification and solving of problems in farming. He called for Vision with Mission, reaching every farmer, crop cutting knowledge and interdisciplinary approach to increase farm output, to arrive better protection technology, processing technology, value addition and market. Chitoor stands first in utilizing the coconut in the country. He opined that use of tender coconuts also have lot of economical value and needs to be exploited. Participatory research is very important in solving the farm problems.

Sri Jayarami Reddy, Member, Board of Management expressed that main idea of emerging Andhra Pradesh Horticultural University is to serve the farmers. Visibility of APHU's research stations can be enhanced by supplying quality planting materials or at least should be able to supply quality scion material. ATMA funds may be utilized for publishing research bulletins, publication of research results. Revolving fund, if possible should be doubled or tripled to utilize it for income generation. Visual aids such as CDs about research stations and its research activities should be developed. For the recently occurred gale storms the immature fruits of Mango were dropped and resulted in huge losses. However few people utilized these fruits for preparing pickles and sent to North India. Hence, the techniques may be developed to utilize the dropped fruits. He pointed out that near Kodure at village Orampadu farmers are dehydrating the acid lime, drying, processing and exporting them to Gulf Countries to use in tea preparation and called the scientists to explore the possibilities to avoid market glut and lower prices. A team should be created involving agri and horticultural scientists and personnel from dept. of horticulture and agriculture to conduct surveys of different areas and forecast the possible problems.

Every research station has to create a 'crop museum' of their mandate crops, live specimens/ models should be in display for the visitors. A score card for assessing the performance of the Scientist has to be created and responsibility are to be fixed to AEO's. Each research station should have a vermicompost unit to reutilize the organic waste, mainly plants and other green material. If there is enough or surplus land, a commercial block has to be created for income generation and should strive to become self sufficient for funds. It's the fundamental duty of Station Head to monitor all the experiments of scientists working under him/her irrespective of their disciplines. It should become a practice that monthly meetings have to be conducted within each station and review the progress. Scientists and newly recruited scientists should be given a chance to visit various production and processing units to learn new things. Diversification of

crops has to be promoted among farmers. University is striving hard for better establishing the infrastructure and in this direction it has approached NABARD for assistance.

Representative of JDA, Horticulture, expressed that they have been successfully implementing the different programmes of SHM, RKVY etc. He expressed his satisfaction over the co-operation of University in implementing various projects and needs some more cooperation. He urged the university help in evolving crop diversification, supply of better plant material, location specific fertilizer recommendation, moisture retention techniques. Organic farming, water management, plant protection technology, storage techniques, postponement of harvest to have better prices. He requested for joint field visits or diagnostic visits and deputing scientists as resource persons in training programmes organized by Department of Horticulture. In the closing remarks Vice – Chancellor called the scientists to conduct need based research through Participatory Rural Appraisal. He emphasized the need to develop technology to avoid the bitterness in sweet orange. He stressed on prioritization of problems.

Dr. B. Srinivasalu, Controller of Examinations thanked the participants, press and electronic media for their participation and expressed the gratitude to the Veterinary University Officers for sparing the Auditorium to organize the meeting.

SALIENT RESEARCH RESULTS

MANGO

At Anatharajupet

Among pre-released mango hybrids, Neelum x Panchadarakalasa hybrid was superior to other crosses both in terms of number of fruits per tree (1510.41) and yield per tree (397.24 kg) based on the performance over the last 9 years. The next best crosses in terms of cumulative yield per tree were, Ambalavi x Alampur Baneshan (386.48 kg) and Panchadarakalasa x Willard (329.12 kg). The cross, Alampur Baneshan x Malgoa recorded high TSS content with 24.2^{o} brix and attractive peel (red blush) colour was recorded in Khader x Jehangir.

The studies on the production and quality of mango hybrids/varieties released from other research stations revealed that, among the varieties Vikarabad recorded highest yield per tree (472.44 kg) followed by Safeda (247.12 kg) and the TSS content was maximum in Mahamooda Vikarabad (26.6^{o} brix). Among hybrids, Manjeera recorded highest fruit yield (177.01 Kg) followed by Amrapali (138.88 Kg). The hybrid, Mallika recorded the maximum TSS (23.0^{o} brix).

Among Baneshan clones collected from Veeraballi village of Kadapa district, maximum number of fruits per plant was recorded in Veeraballi selection -1 followed by Veeraballi selection -3. Coloured clones of Baneshan, Totapuri and Rumani were identified and collected during the survey.

The studies on the effect of pruning on growth and flowering behavior of mango variety, Baneshan,revealed that, the time taken for bud sprouting (18.22 days) was less and also number of fruits per panicle was more (0.76 fruits) in the trees pruned up to 3rd node + spraying ($ZnSo_4$ 0.5% + Urea @ 2%). The time taken from pruning to flowering was less in the treatment pruning of shoots up to 1st node + spraying (161.74 days).

In Baneshan apply of 100 % RDN + Azotobacter 50 gm + **PSM** 15 gm/plant recorded highest organic carbon (0.52%), available Nitrogen (245 kg/ha), Phosphorus (25.9 kg/ha) and Potassium (433 kg/ha).

Peak incidence of hoppers on vegetative growth was observed from I week of August and population increased up to 4th week of September and then declined, but later gradually increased from 3rd week of November and continued up to March end with peak incidence during 4th week of February. Thrips incidence was maximum during the months of February and March. Peak fruit fly incidence was recorded during June 3rd and 4th week. Other insect pests viz., leaf webber, leaf cutting weevil, ash weevil, leaf galls were observed during September month.

Spraying with Spinosad @ 0.3ml/lit was found to be effective in controlling mango stone weevil (S*ternochaetus mangiferae*)

Mango leaf webber (*Orthaga exvinacea)* was effectively controlled by emamectin benzoate 5% SG @ 0.75g/lit Mallika (6.5), Alphonso (7.0) and Allipasand (10.3) varieties recorded lower no. of webs/tree compared to Jehangir (43.6), Yellamanda (42.5) and Neelum (41.5) varieties.

More number mango stone weevil (*Sternochaetus mangiferae*) were found in the bark of trunk, cracks and crevices as off season shelter than in the leftover and collected nuts. It was observed that the female adult weevil preferred to lay eggs in the middle portion of fruit compared to pedicel (upper) and sinus (lower). Maximum number of eggs (98.6%) were emerged from middle portion of fruit. During the survey conducted in Kadapa and Chittoor districts, it was observed that Bangalora and Neelum were more susceptible to this pest and Chittoor region had more incidence of this pest (4-358%) compared to Kadapa region (3-15%).

At Anantapur

Installing the drip laterals at 30cm depth below the soil surface was found effective which would facilitate intercultivation, minimize the evaporation losses, weed problem and damage by squirrels and rats.

At Petlur

In the varietal trial of mango Neeluddin (356 fruits weighing 159 kg./ha) and Neelgoa (259 fruits weighing 128.4 kg) among hybrids; Jehangir (417 fruits weighing 216.2 kg) among table varieties; Peddarasam (114 fruits 58.3 kg.) among juicy varieties; Pulihora (335 fruits 88.2 kg.) among regular varieties; Allipasand (148 fruits 114.6 kg.) among pickle varieties performed well.

CITRUS

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

ACID LIME

In the 9 year old acid lime seedlings, when irrigated at 50% CPE through drip gave almost equal yields per plant per year (1324 fruits weighing 55.26 kg) utilizing 25,386 liters of water as compared to double ring system which requires 34,200 lit. of water. The cumulative yields from the last 6 years are maximum in the 50% CPE (16,172 fruits weighing 618.89 kg.) as against to double ring system of irrigation (15,789 fruits weighing 596.07 kg.)

Acid lime budlings on Gajanimma root stock produced significantly highest yield of 1826 fruits/plant weighing 67.12 kg. closely followed by Rangpur lime at the age of 11 years under drip irrigation. But the percentage of survival was maximum on Rangpur lime root stock. Survival on Calamondin and sathgudi Root stocks were very poor. Most of the plants were died

due to *Ganoderma* root rot. Compared to all root stocks, Acid lime seedlings survived maximum even after 9 years with good growth and yield performance.

Among the 36 acid lime clones of 1996 planting, Petlur Selection-1 and Tenali (Balaji) were found good both in canker tolerance and yield. In 1998 planting Pramalini variety showed less canker disease incidence than the other Clonal selections.

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

Seventeen (17) released and pre-released acid lime varieties have established well and are in pre-bearing stage. Among them L-49, TAL-94-14, TAL-94-2, RHRL-159, CRS-21 and CRS-1 are highly precacious.

Survey in Nellore district indicated Bacterial canker incidence was wide spread in all the acid lime gardens. Canker and root rot diseases were the major factors for the decline of acid lime orchards.

Among the 1996 planting Petlur Selection-1, 21, and Balaji were found good both in canker tolerance and yield. In 1998 planting Pramalini variety showed less canker disease incidence than the other Clonal selections.

In the nursery application of *T.viride* (PCT_6) 100 gms in combination with FYM (2.5 Kg) and Mancozeb (0.2%) recorded highest seedlings emergence with least root rot incidence.

Root samples from the rhizoshere soils of acid lime orchards of Nellore district revealed the presence of *B. theobromae* in the plants having bark and wood splitting disease.

At Tirupati

Among the 22 Acid lime clones which were planted during 1996, maximum plant height and volume was more in Acid lime local (3.72 m and 53.17 cu.m.) followed by RHRL-124 (3.5 m and 52.90 cu.m.) respectively.

Maximum number of fruits and weight of fruits per plant were observed in TAL-94/14 (3268 fruits and 183.99 kgs per tree) followed by TAL-94/13 (2456 fruits and 133.08 kgs per tree). Although the yield (both in number and weight) is less in TAL-94/13 when compared to TAL-94/14, the fruit shape and storability was more.

Bacterial canker in acid lime nursery could be controlled effectively by spraying neem seed kernel extract (4%), twice at an interval of 3 weeks starting from the appearance of canker spots, which reduced about 75% of spots on leaves and 65% of canker spots on stem compared to control.

SWEET ORANGE

Among the nine clones of sweet orange which were of 17 years old, planted at Citrus Improvement project, the highest yield was recorded in Sathgudi (CIP) clone (1098 fruits weighing 168.50 kgs per plant) followed by Ananthapur Selection (798 fruits weighing 141.30 kgs per plant) followed by Ankalamma gudur with 805 fruits weighing 107.5 kgs per plant. Brix acid ratio is also more in Sathgudi (CIP) (11.98) and in Ananthapur selection (11.77)

However, the yields both in number (1005 fruits/plant weighing 129.20 kgs) was significantly more in Kodur Sathgudi, followed by Mosambi (870 fruits, weighing 101.62 kgs per plant) with maximum brix (9.9^o) and titrable acidity (1.08).

Even though the plant volume is significantly more in control (21.04 cu.m). Highest yields both in number and weight (40.5 fruits weighing 72.50 kgs) was recorded when the plants were supplied with 75% RDF along with VAM 500g + PSB 100g + Azospirillum 100g + T. harzianum 100 g per plant closely followed by application of 100% RDF + VAM 500g + PSB 100g + Azospirillum 100g + T.harzianum 100 g per plant.

Plant girth (44.38 cm.), height (2.93 cms) and volume (22.38 cu.m.) were more in the soil application of recommended dose of Nitrogen. Which is closely followed by recommended dose of Nitrozen along with 75% of potash applied through fertigation and the yields both in number (305 fruits) and weight (52.46 kgs) per plant. Total soluble solids (9.5^{o}) and Titratable acidity (0.90%) were also more in the plants supplied with 75% of potash and recommended dose of Nitrogen through fertigation.

Soil drenching with Mancozeb (0.25%) + soil application of neem cake @ 2kg/plant + P. fluorescence @100 g/plant recorded about 80% recovery in the dry root rot affected plants.

Transmission studies of citrus greening bacterium by patch inoculation in to 441 individual citrus plants under artifical controlled conditions revealed that 59 plants were CGB positive by PCR. Percent transmissibility ranged from 0 to 68.5% among various citrus species.

Out of 377 trees of sweet orange cv Sathgudi indexed for CGB and CYMV, 239 trees are found infected with either CGB/CYMV or both.

About 89,000 number of Sathgudi budlings and 1.03 lakh Sathgudi budsticks and 10,935 balaji acid lime seedlings were supplied to orchardists and registered nurseries.

On sweet orange rust mite can be effectively controlled by giving 3 sprays with Imidachloprid 0.005% followed by neem seed kernel extract @ 5% at inflorescence, button and marble stages of the crop.

Spraying Imidachloprid @ 0.25ml/lit of water was found effective in reducing leaf minor. Among the non-chemicals, neem seed kernel extract 5% was found effective.

Bacillus thuringiensis 0.1% was found significantly superior in controlling citrus butterfly when different bio-agents were tried in sweet orange nursery.

BANANA

At Anantarajupet

A total of seven accessions of banana viz., Karpooravalli, MS-93-1, Sugandhalu, Amruthapani, Karpoora Chekkarakeli, Grand Naine and Rubusta were selected from the available germplasm based on the yield and quality parameters.

In the trial on effect of bulky organic manures on growth, yield and quality of banana cv.Grand Naine, the data on vegetative characters revealed that, there is no significant difference in growth characters viz., plant height, plant girth, no. of leaves and leaf area. Among the soil properties, high available nitrogen content (281.0 kg/ha) in the soil was recorded with 100% RDF, followed by 75% RDN + Neem cake 1.5kg/plant (269 kg/ha). Maximum percentage of organic carbon in the soil was recorded with 75% RDN + Ground nut cake 1.0 kg/plant whereas, soil pH, EC, available phosphorus and available potassium in the soil were found to be non significant.

At Mahanandi

In the Integrated Nutrient Management in banana variety Sugandham plant height (3.49cm), No. of leaves (17.0), Stem diameter (50.50), root growth (12.6cm) and length of the leaf

(161.8) was more when FYM + Oil cake + 50% RDF PSB were applied. Width of the leaf was more when FYM + Oil cake + 50% RDF were applied.

In the Comparative yield trial with banana varieties viz. Sugandham and Grand Naine, Grand naine has recorded more no. of fruits (141.67), more length of the fruit (24.50cm), more fruit wt (161.46 gm/one banana) as compared to Sugandham. Grand naine when planted at 2x2 m spacing yielded more no. of fruits (141.67) as compared to 1.2x2x1.2 m spacing. The incidence of sigatoka leaf spot was found more in the closed spacing.

PAPAYA

At Anantarajupet, the studies on INM in papaya cv.Red Lady revealed that the application of 100% recommended dose of fertilizers recorded maximum plant height (82.80 cm) and plant girth (20.53 cm). However when 75% RDN + Neem cake (1.25 Kg/plant) + Azotobacter (50 g/ plant) + PSB (50 g/plant) was applied which was equally effective with the application of 100% RDF regarding plant height and plant girth but other parameters like no. of leaves and leaf area were non significant.

Studies on Integrated Nutrient Management in Papaya indicated that, 100% RDF recorded highest available nitrogen (260 kg/ha). The treatment 75 % RDF + vermicompost (31.25kg/ha) recorded highest available phosphorus and potassium (25.7 kg/ha and 420 kg/ha respectively).

POMEGRANATE

At Anantapur

Survey and surveillance of diseases of arid zone fruits: Bacterial blight disease in pomegranate continued to be a major constraint in cultivation of pomegranate. Fungal fruit spots and wilt are the emerging constraints.

The following Management schedule was tested at seven farmer's orchards in hotspots of Anantapur and Mahaboobnagar districts, and found that the schedule is working effectively in minimizing the losses due to Bacterial blight in pomegranate.

Plant Disease free planting material.

Spacing of 4.5m X 3m was found ideal.

Do not leave infected plant parts (leaves, flowers, fruits and twigs) in orchards nor dump near orchard or throw in irrigation channels. The orchards should be swept clean to collect all fallen parts and burnt.

During pruning secautures should be sterilized with Dettol (1%) or Sodium hypo chlorite (1%) Prune twigs and branches 2 inches below the cankers, followed by spraying of 1% Bordeaux mixture and Bordeaux paste should be applied to the cut ends.

Drenching of bleaching powder @ 150g/5-7 L of water per plant or dusting of copper fungicide dust (4%) @ 20 kg/ha on soil below canopy at the time of bahar treatment reduces the bacterial inoculum due to left over plant debris in orchard.

Second spray at foliage iniitation with Streptocyclin sulphate (250 ppm) + Copper oxy chloride (0.3%)

Third spray with 0.5% Bordeaux mixture after 15 days of second spray.

Fourth spray at flower initiation with Streptocyclin sulphate (250 ppm) + Carbendazim (0.1%)

Under favourable condition of overcast sky and rains sprays to be repeated with Streptocyclin sulphate (500 ppm) + Carbendazim (0.1%) at 10 days interval.

Foliar application of Micronutrients namely Ferrous Sulphate (0.2%), Manganese Sulphate (0.2%). Zinc Sulphate (0.2%) and Boric acid (0.1%) based on symptom expression.

Follow the rest period of at least 3 months between the bahars.

At Anantharajupet

Under Collection and evaluation of promising varieties of pomegranate, Bagua recorded maximum number of fruits per plant (36.0) followed by Mrudula (20.0).

BER

At Anantapur, plant height (3.5 m) and plant spread (28.7 m^3) were recorded maximum in Kaithili. Highest fruit yield per plant was recorded in Umran (31.9 kg/plant), Mundia (31.4 kg/plant) and Gola (30.8 kg/plant)

Percent Disease Index (PDI) of Powdery mildew is significantly and negatively correlated with maximum and minimum temperature and positively correlated with relative humidity.

In the bio-control of ber powdery mildew lowest percent disease (30.8) was recorded with 0.1 % Karathane alone and which differed significantly with 0.05% Karathane alone and combination of bio-agents (*Trichoderma* CIAH 240, CIAH NR and *Pseudomonas florescence* CIAH 196 CIAH NR) + 0.05% Karathane

TAMARIND

At Ananthapur

Highest fruit yield was recorded in Vellore – 2 (23.5 kg/plant) followed by Vellore – 29 (22.6 kg/plant) and N-1 (21.5 kg/plant)

At Petlur

Among 40 Tamarind clones 13 clones are in pod bearing stage. Under rainfed condition PTS-18 produced good yields of 29 kg pods/plant followed by PTS 31 & 32.

In another trial **Urigam** variety recorded 13.5 kg pods/plant.

AONLA

At Anantapur

In aonla collection, highest plant height (5.5m) and spread (102.5 m^3) was recorded in Local. Highest fruit yield per plant was recorded in NA – 10 (51.3 kg/plant) followed by kanchan (36.5 kg/plant)

At Petlur

Narendra 7 produced 12.5kgs/plant, stargoose berry yielded 13.5 kgs/plant under rainfed conditions.

CUSTARD APPLE

At Anantapur

Highest plant height (3.1 m) and spread (22.7 m^3) was recorded in Malakalmur-9. The highest fruit yield per plant was recorded in K.E.palli No.1 (7.0 kg/plant)

At Petlur

Custard apple (A X B) produced 10.5 kg fruits/plant under rainfed conditions.

GUAVA

At Petlur, during this year under rainfed conditions Guava L-49 produced 56.7 kg/plant.

SAPOTA

At Petlur, during this year under rainfed conditions Kalipatti Sapota produced 34.5 kg/ plant.

JAMUN

Among 29 clones of Jamun PJS-13 and PJS-14 are highly vigorous. At the age of 6 years 12 clones of Jamun (PJS-1,6,7,8,11,12,13,21,23,24,25,26 and 27) have showed precocity. All the 29 clones of Jamun are in pre-bearing stage.

WOOD APPLE

Among 10 wood apple clones PWAS-2 and PWAS-9 are yielding better.

JACK

At Anantarajupet

Among the 10 jack collections evaluated, Gunnegora recorded highest fruit yield (30.5 fruits/tree). Weight of the fruit was recorded maximum in KO selection (10.60 kg). Maximum TSS was recorded in KRS (22^0 Brix). Among the growth parameters recorded Manglore local recorded maximum plant height (10.33 m) while minimum height was recorded by KO Selection (4.70 m).

At Petlur

Under rainfed conditions Kodur selection has produced 8 fruits/plant.

PASSION FRUIT

At Anantarajupet, passion fruit, Kaveri variety grafts from IIHR, Bangalore and seedlings raised from seeds collected from yellow passion fruit were performing better in terms of growth and early yield.

MUSKMELON

At Anantarajupet, among 19 varieties/selections of Muskmelon studied, Kanpur recorded highest number of fruits per vine (5.33) and maximum fruit yield per vine (3.71 kg) Sharbatti netted-2 recorded maximum fruit weight (1032.66g). The maximum TSS content was recorded in Ingan – oblong ($17.5\ ^0$ brix).

BETELVINE

At Anantarajupet, among 25 Bangla clones, maximum yield was recorded in SGM-1 (44.40 lakh leaves per hectare) closely followed by Calcutta Bangla and Bangla Ganmala (35.50 lakh leaves per hectare). Among 24 Kapoori types, maximum leaf yield was recorded in Karpoora kodi (37.90 lakh leaves per hectare) followed by Tellaku Ponnur (35.00 lakh leaves per hectare).

Studies on the effect of soil and foliar application of Zinc on betelvine revelaved that all the plant characters like vine length (284cm), number of leaves per vine (139.0), number of branches (6.46) were recorded maximum with the application of ZnSo4 @ 50 kg/ha. Soil properties

like P^H, EC, organic carbon available nitrogen, phosphorus, potassium and Zinc status were found to be non significant.

Results of the fertigation studies in betel vine revealed that, 100% RDF through drip resulted in highest increase in vine elongation (48.45 cm), no. of laterals per vine (7.75) and yield (12.05 lakh leaves/acre). It was on par with 75% RDF applied through drip. All the soil properties like P^H, EC, organic carbon, available phosphorus was found to be non significant. Soil available nitrogen and potassium content found to be significant. In treatment receiving 100 kg N + 100 kg K/ha recorded highest available nitrogen (295 kg/ha) and available potassium (470 kg/ha).

TURMERIC

At Anantarajupet

A total of 25 short duration, 19 medium duration and 88 long duration types are being maintained at HRS Anantharajupet. Among short duration types, CLI-370 (42.35 t/ha), under medium duration types CLI-322 (54.79 t/ha) and among long duration types, Alleppy (50.79 t/ha) recorded highest yield. In initial evaluation trial in Turmeric. The varieties CLS-369 (41.02 t/ha), G.L.Puram (38.89 t/ha), PCT-2 (31.63 t/ha) and CLI-325 (30.15 t/ha) recorded significantly more yields compared to local check Mydukur (25.48 t/ha).

At Mahanandi

Maximum atmospheric temperature was positively correlated with disease leaf spot in turmeric crop.

ONION

At Anantharajupet

A total of 9 varieties and 8 hybrids were evaluated. Among varieties, maximum fresh bulb yield was recorded in K.P.Onion (9.09 t/ha), and among hybrids, Orient recorded maximum bulb yield (10.55 t/ha).

Application of 75% RDN + 25% through vermicompost @ 1.25 t/ha gave higher fresh bulb yield (11.39 t/ha) with least neck diameter of 7.71 mm. Maximum available nitrogen (281 kg/ha) was observed in with 100% RDF. Highest available phosphorus (33.5 kg/ha) and potassium (450 kg/ha) were recorded when 100% RDN through vermicompost @ 5 t/ha was applied.

At Mananandi

In onion Plant height (52.11cm), Stem diameter (4.33 cm), No. of leaves and buld yields (82.42 kg/plant) were found maximum when 75% RDF + Castor cake @ 2.5 t/ha + Azospirillum + PSB were applied.

Maximum temperature was negatively correlated with purple leaf blotch disease in onion other factors were positively correlated with disease incidence.

TOMATO

Less number of days was taken for first flowering, number of flowers per plant, number of fruits per plant, length of the fruit diameter were found more in fertigation treatment when compared to control.

Maximum and minimum atmospheric temperatures were negatively correlated and other factors were positively correlated with Early blight disease incidence.

In the integrated management of wilt in tomato crop, soil solorization with polyethylene sheets, seed treatment with Mancozeb @ 3g/kg seed, soil drenching with copper oxy chloride @ 3 g/lit and soil application of *Trichoderma viride* and *Pseudomonas fluorescence* along with FYM @ 25 t/ha was found to be effective in controlling wilt disease. The percent disease incidence was lowest (10.65, 14.33, 21.29 and 31.56 at 15,30,45,60 days after planting respectively).

Seed treatment with Imidacloprid (Gauch) @ 5 g/kg seed + N.S.K.E. @ 5%+ Spinosad 0.3 ml/l is found to reduce leaf curl (17.36, 18.05, 20.40 and 22.55 at 15,30,45,60 day after planting respectively) and Budnecrosis (7.14, 10.55, 16.29 and 18.55 at 15,30,45,60 day after planting respectively) in Tomato.

BRINJAL

At Mahanandi plant height, stem girth, number of branches and spread of the plant were more in the fertigation as compared to the control. Regarding the flowering characters like number of days for first flowering, number of days for 50% flowering were less in the fertigation treatment compared to control. Number of flowers per plant. Number of fruits per plant, length of the fruit and diameter of the fruit were found maximum in fertigation treatment compared to control.

OKRA

Bio efficacy of Bt formulations for the control of fruit borer in okra is conducted at HRS, Mahanandi to evaluate the superior *B.t* formulations to control fruit borer, Out of the tested *B.t* treatments Delfin @ 1.5% was found to be superior treatment with lowest fruit borer population 16.45/5 plants at 3rd day, 10.22/5 plants at 5th day, 15.61/5 plants at 7th day after spraying.

Survey conducted on vegetable and fruit crops grown in Kurnool, Anantapur and Prakasam districts of Andhra Pradesh indicated that damping off (5-10%) was recorded in tomato and chillies. Purple leafblotch (10-15%), Downy mildew (20-30%) in cucumber and mosaic (20-30%) in watermelon crop were recorded. In chillies Fusarium wilt (20-30%) in Adoni division of Kurnool district. In tomato leaf curl (30-40%) and Budnecrosis (20%) were observed.

VEGETABLE CULTIVATION UNDER SHADE NET

Sprouting broccoli grown under 35% shade recorded maximum plant height (39.3cm), girth (7.8 cm), curd weight (567.7g), diameter (173.37cm) and yield (20.9 t/ha) as compared to broccoli raised under 50% ,75% shade net and raised in open condition. Cabbage grown under 35% shade net was found superior in growth parameters viz., plant height (37.2 cm), girth(7.2 cm) and yield (43.6 t/ha) compared to cabbage raised under 50% ,75% shade net and raised in open condition. Capsicum raised under 50% shade net recorded maximum plant height (68.2cm), no. of branches (4.6), no. of fruits (11.4), fruit weight (172.4g) and yield (1.97 Kg/plant or 14.8 t/acre), fruit length (10.7cm), circumference (22.6 cm) and diameter (7.12 cm).

MARIGOLD

At Mahanandi, 7 varieties of marigold were tested and among them the variety Indus Yellow-II recorded more flower yield (13.40 t/ha) followed by Pusa basanti gainda (10.42 t/ha). Lowest yield was noted from the local orange variety (8.0 t/ha).

CROSSANDRA

In the integrated management of collar rot in crossandra lowest wilt percent (36.8) was recorded with drenching + spraying with Carbendazim @ 1 g/l followed by application of *Trichoderma viride* through FYM + Neem cake (38.4).

TECHNICAL SESSION - II

(Crop wise production recommendations)

Chairman : Dr.B.Srinivasulu, COE, APHU

Co-Chairman : Dr.K.V.Seshadri, DE, 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.Bhagwan, Senior Scientist (H) FRS, Sangareddy	:	Mango, Guava, Sapota
Dr.K.Gopal, Principal Scientist (CP) CRS, Tirupati	:	Citrus
Dr.A.Ranga Reddy, Principal Scientist (Ento) GRS, Rajendranagar	:	Grapes
Sri. D.Madhava Rao, Senior Scientist (H) HRS, Darsi	:	Banana, Turmeric
Dr.K.Subramanyam, Senior Scientist (Pl.Path) HRS, Ananthapur	:	Pomegranate
Dr.R.V.S.K.Reddy, Principal Scientist (H) HRS, Rajendranagar, Hyderbad	:	Vegetables
Dr.B.Srinivasulu, Senior scientist (H) HRS, Anantharajupet	:	Onion, Papaya
Smt. C.Madhumathi, Scientist (H) HRS, Anantharajupet	:	Flower Crops

Rapporteurs : Smt. Madhumathi, Scientist (Hort.), HRS, Anantharajupet

Dr. D. Srinivas Reddy, Scientist (Ento.), HRS, Anantharajupet

Smt. A. Snehalatharani Scientist (PP), CRS, Trupati.

REC members

Venkatramaraju garu, Kodur, Kadapa District

He has enlightend about the various crops growing in the district and the problems they are facing with these crops. He told that Anthracnose and hoppers in Mango and purity of the germ plasm are the major problems in Mango. Where as mango mite is the major problem in citrus. Decreased yield in case of banana and papaya were observed.

Sri.T. Raghavendra Rao garu, Ananthapur District

He told that market information technology should be available to farmers. He needed the details on organic forming and biopesticides or biocontrol agents against pests and diseases.

Sri. T.M.V. Sanjeeva Reddy garu, Nellore District

He asked for region specific cultural practices in the crops, improved harvesting tools for fruit crops and on preparation of dried acid lime and growing of coloured oranges in this area.

Kurnool District

CHILLIES

Sri Jayarami Reddy

Q: Please suggest the high yielding varieties in chillies.

A: G-3, G-4(Bhagya Lakshmi), G-5 (Andhra Jyothi), CA-960 (Sindhur), LCA-200 (Kiran), CA-1068 (Aparna), LCA-235 (Bhaskar), LCA-206 (Prakash), LCA-305, LCA-334 and LCA-353.

FLOWER CROPS

Q: Please suggest the varieties in marigold.

A: French Marigold, American Marigold, Pusa Naringa Gainda, Pusa Basanth Gainda, Undia-1

Q: Management of nematodes in crossandra.

A: Soil solarisation, application of Neem cake and furadan granules to the soil will check the nematodes.

Sri Srinivasulu yadav

SAPOTA

Q: Irrigation schedule in sapota.

A: Irrigate the plants at 10-15 intervals during summer and fruit development stage. In the drip system of irrigation apply 60-100 lit. of water per day depending on the agro climatic conditions.

Q: Pruning in sapota.

A: Train the plants in the early stages by removing the lower branches up to 1 m. height. In the adult plants remove the dried branches, criss cross branches and branches touching the ground.

Sri Akbar, ADH, Kurnool.

MANGO

Q: The reasons for the delay in flowering in Baneshan every year.

A: Brain Storming Session on Mango flowering will be held at Sangareddy, Medak district on 6th May, 2010 and depending upon the out come of the deliberations the programmes will be finalized.

Q: Fertilizer and water requirement of 30-40 year old mango orchards.

A: For the adult plants more than 10 years age apply 1 N : 1 P : 1 K kg per plant.

Q: Information of high density planting in Mango

A: Experiments are in progress and after the confirmation of the results it will be informed.

CITRUS

Q: Package of practices to over come the micro nutrient deficiencies in sweet orange grown in the Calcarious soils.

A: Apply Farm Yard Manure and green leaf manure to the basin. Apply Gypsum @ 2-5 kgs/ plant depending upon the age of the plant. Spray 0.5% Zn + 0.2% Mg + 0.2% Mn + 0.2% Fe + 0.1% B + 1% Urea twice at fortnightly interval on the newly expanded young leaves.

Q: How to differentiate between the sathgudi budlings on rangapur lime and jambheri root stock in the nursery stage.

A: It is very difficult to identify and the study will be taken up.

BANANA

Q: During the rainy season the Banana plants are infected by leaf spot disease and needs control measures.

A: Control of Potassium deficiency followed by spraying of 0.1% Propiconazole or Tridimorph.

PAPAYA

Q: Virus resistant variety in papaya to substitute Tiawan variety.

A: So for resistant varieties to viruses are not available.

TOMATO

Q: Control of Tomato Spotted Wilt Virus.

A: Remove and destroy the affected plants and control the vectors.

Q: Control measure for Late and Early Blight diseases of tomato.

A: Spray Mancozeb @ 3g/lit. or SAF-2g/lit.

CHILLIES

Q: Control measures for Thrips in Chillies.

A: Seed treatment followed by Fipronil granules in the nursery as well as in main field and also spraying fipronil @ 2ml/lit or Spinosad @ 0.3 ml/lit.

RIDGEGOURD

Q: Reasons for bitterness in Ridgegourd during summer.

A: May be varietal character.

TURMERIC

Q: Control measures and resistant variety is requested for Rhizome rot disease in Turmeric.

A: Treating the seed rhizomes with Metalaxyl + 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.

ONION

Q: Nutrient management in Onion.

A: Incorporate FYM at 25 t ha^{-1} during preparatory cultivation and apply fertilizers @ 100:50:60 NPK Kg/ha. Apply entire P,K and half of the N as basal and the remaining 50 N has to be top dressed in two equal doses at monthly intervals.

Q: Suggest the variety suitable for Kharif.

A: Experiments will be initiated.

Madhusudhana Rao, ADH

ONION

Q: Improved method of storage on Onion.

A: Experiments will be initiated.

Q: Variety suitable for high rainfall in Kharif.

A: Experiments will be initiated.

Kadapa District

Sri Narasimha Reddy

MELONS

Q: High yielding varieties in Muskmelon and Watermelon to produce more number of first grade fruits.

A: Research gap

Q: Information on the compatibility between the newly coming pesticides, fungicides and chemicals is required.

A: Research gap

FLOWER CROPS

Q: To train the farmers on the production of quality seeds in the Marigold.

A: Advised to contact the scientist at Anantharajupet, Mahanandi and Rajendranagar.

MANGO

Q: How to identify the true Baneshaan variety in Mango.

A: Identified as research gap. Already the trial was under program under AICRP. Collection of ecotypes will be collected throughout state.

PALMYRAH

Q: Early variety in palmyrah is required.

A: Already research is initiated on palmyrah at HRS, Pandirimamidi, East Godavari, District.

CITRUS

Q: Control measures for gummosis in citrus.

A: Remove the affected portion with sharp knife and apply 1% Bordeaux paste or Copper oxy chloride.

Q: Control of fruit drop in Sathgudi.

A: Avoid water stress during the flowering and fruiting stage. Irrigate garden regularly. Spray 2, 4-D @ 10ppm during flowering, peanut stage and one month before harvest.

BRINJAL

Q: Control root rot in Brinjal.

A: Follow the management practices. Use of seeds from healthy plants. Crop rotation and using resistant varieties

ADH, Kadapa

PAPAYA

Q: Package of practices to control viral diseases in Papaya

A: Control the vectors regularly after removing and destroying the affected plants in the early stages.

BANANA

Q: Information on fertigation schedule in Banana.

A: 50% of the RDF i.e. 100 g each of N&K. devided into 25 equal doses. 20 doses will be applied at weekly intervals from 6th to 25th week i.e. before promordea initiation and the remaining 5 doses at weekly intervals after bunch emergence i.e. approx. 36th week onwards.

CITRUS

Q: Control measures for root rot in Sweet orange.

A: Plant the budlings on Rangapur lime. In the existing orchard, drench the soil the basin around the trunk 1 day after the irrigation with 0.2% Carbandezim or 0.25% Mancozeb or Cheshunt compound or 1% Boardeaux mixture. Use organic matter sufficiently to the basin. Apply tricoderma culture to the basins and incorporate.

Q: Control measure for stem end rot in Sweet orange.

A: Spray 0.1% Carbandezim at the time of flowering and fruit set during rainy season.

ONION

Q: The yields of KP Onion are reduced every year and require package of practices to get the higher yields.

A: Research gap

Q: Control measures for leaf spot in Onion.

A: Spraying of Mancozeb (2.5g/l) + Metasystox (2ml/l) at 7-10 days interval

MELONS

Q: Control measures for downy mildew in Muskmelon.

A: For the control of **Powdery mildew, s**pray dinocap @ 1 ml/lit or tridemorph @ 1 ml/lit 2-3 times at 10 days interval.

For the control of Downy mildew, spray mancozeb @ 2.5 g/lit. or metalaxyl M.Z @ 2g/lit. at 8-10 days interval.

CHILLIES

Q: Control measures for dieback in Chillies.

A: Seed treatment with Captan @ 2.5g/kg seed spray Captan 1.5 g/lit or Mancozeb 2.5 g/lit or Copper oxychloride 3.0 g/lit or Propiconazole @ 1 ml, Difenconazole 0.5 ml/lit, Copper hydroxide 2.5 g/lit of water 3-4 times.

BRINJAL

Q: Control measures for shoot and fruit borer in Brinjal.

A: Adopt IPM package. Application of carbofuran granules 10kg/acre immediately after planting. Clipping of infested shoots followed by spraying of Endosulfan 2ml/l) or Monocrotophos 1.6 ml/l or cypermethrin 0.5ml/l

TURMERIC

Q: Curing and drying machinery in Turmeric with low cost is required.

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.

Chittoor District

Kayam Narayana Reddy

GENERAL

Q: It is suggested to name the Horticultural Research Station at Anantarajupet in memory of late Dr. K.C.Noik, a stalwart and founder of Kodur Research Station who did a pioneering service to the Horticulture to honour his services.

A: It is a good suggestion and will be taken care of.

Q: It is suggested to conduct the farmers interaction meeting to enlighten about the BT Brinjal locally.

A: It is a good suggestion and will be taken care of.

Q: Suggested to prepare the Horticultural plan for Rayalaseema.

A: It is a good suggestion and will be taken care of.

Q: Suggest the crop diversity in Chittoor district and specify the crops and variety.

A: It is a good suggestion and will be taken care of.

Sri Jaya Chandra Chowdary, President, District Committee of Federation of Farmers Associations, Chittoor.

GENERAL

Q: Establishment of one Horticulture Research Institute in Chittoor District.

A: At least 50-100 acres of land is required to start a research station. If the land allotment proposal from the District Collector/People's Representative is received to start the research station the same will be considered.

Q: Establishment of one Leaf Analysis Laboratory

A: Already Phytosanitary Laboratory is being established at Citrus Research Station, Tirupati.

Q: Establishment of Mango Board in the District.

A: It is a policy matter and can be represented the Ministry of Agriculture, Government of India/Government of Andhra Pradesh.

MANGO

Q: Control measures of Balck Banded Fungal disease and the pests like Nut Weevil and Fruit fly on Mango.

A: For Black banded disease control apply 0.3% Copper oxy chloride for Bordeux paste. Spray 0.1% Carbendazim against fungal diseases.

For Fruit flies control : Pheromone trapping with methyl eugenol for Bactocera dorsalis Sp. Replenishing the traps with new wicks every fortnight during fruiting season. Bait sprays of Carbaryl (75%.wp) @ 2g/lit + Proteinhydrolysate @ 1.0g/lit. or molasses @ 1.0g/lit. starting at pre-oviposition stage (First week of April repeated once after 21 days).

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

Bala Krishan Reddy

MANGO

Q: Please identify the varieties for short, medium and long duration varieties in Mango to sustain the processing industry to enable to supply the fruits for at least six months.

A: Research will be taken up

GUAVA

Q: Please develop the variety with pink flesh in Guava for processing industry.

A: Research gap

Kohir Red was identified for red colour pulp and is being tested under AICRP trial. The results will coming in 3 years time.

GENERAL

Q: As there is a lot of area under aromatic and flowering plants around Madanapalli area a Research Station may kindly be started at Madanapalli.

A: At least 50-100 acres of land is required to start a research station. If the land allotment proposal from the District Collector/People's Representative is received to start the research station the same will be considered.

PRECESSION FARMING

Q: Studies on the precession farming may be taken up which gives 3-4 times increased yields over traditional farming in line with Krishnagiri, Dharmapuri district, Tamilnadu.

A: As and when the facilities and scientific personnel improved the same will be taken up.

POST HARVEST TREATMENT

Q: The Vapour heat treatment unit may be put to good working condition to enable the farmers to utilize it for exporting mango.

A: Advised to contact the Department of Horticulture, Agro Industries and Agricultural marketing.

Bhaskar Reddy, Puttur

MANGO

Q: Change of fruit color due to management practices?

A: Research gap. Advised to contact the Scientist at Anantharajupet/Sangareddy at the time of flowering and fruit development.

Prasad, ADH

TOMATO

Q: Post Harvest studies in Tomato to avoid the spoilage during glut season.

A: Research gap and the experiments will be taken up.

MANGO

Q: Standardize the spacing for high density planting in Mango

A: Experiments are in progress and after the confirmation of the results it will be informed

POLY HOUSE

Q: Training on the nutrient and pest management in the poly house cultivation of vegetable and flowers.

A: Advised to contact the Vegetable Research Station, Rajendranagar.

Ananthapur

Krishna Vardhan

MELONS

Q: Weed control in Watermelon by mulching or by herbicides.

A: Weed control can be done by using Metalachlor @ 1 lit. for light soils and 1.5 lit. for heavy soils in 200 lit. of water and spraying within one or two days after planting. Mulching can also be taken up to reduce the weed population.

ORGANIC FARMING

Q: Package of practices for organic cultivation.

A: The results are not available and the onfarm trials will be taken up with the coordination of Department of Horticulture and progressive farmers.

DRY LAND HORTICULTURE

Q: Suitable varieties in Jamun, Amla (aomla) and Sitaphal.

A: The experiments are in progress in Jamun.

Narendra-7, BSR-1, Chakiya, Kanchan in amla

Balanagar in Sitaphal are the recommended varieties.

Q: Information on Gaur cultivation for processing.

A: Research will be initiated.

Sreenath Reddy

HIGH DENSITY PLANTING

Q: Information on package of practices in high density planting in Pomegranate and Guava.

A: Research gap. Even though CISH Lucknow has developed high density and medow orcharding – the trial (New) was taken up in FRS – Sangareddy. The results will be forth coming in 3 year of time.

ADH, Ananthapur

POST HARVEST TECHNOLOGY

Q: Processing techniques in Sapota, Guava (Lalith-coloured variety).

A: This is taken as research gap and will be initiated.

Banana

Q: Whether Wires system of connecting the Banana plants to withstand gales and winds is useful?

A: It was failed in farmer's field in East Godavari district.

Q: Whether fallen Banana bunches during the days can be stored in cold storage or useful for ripen or for making chips.

A: Research information is not available and will be initiated.

Q: Whether grand naine variety is useful for chip making.

A: Grand naine variety is not suitable for chips making

Q: What are the specifications of Banana ripening chamber.

A: If the proposals sent to the Department of Horticulture for establishing the ripening chambers the concern firm will fabricate accordingly.

Q: Scientists may kindly be deputed for screening plant material and facilities to index viral diseases may be established.

A: It is possible by Phenotypical characters Like plant stature, leaf orientation, leaf colour, chimeral features, etc. Molecular characterization has to be standardized. (Research Gap). Virus indexing will be done at Environmental Protection Training and Research Institute, Hyderabad on payment.

GRAPE

Q: Depute grape scientists at least monthly once to guide the grape growers.

A: Whenever there is a need the scientist from Grape Research Station, Rajendranagar can be contacted through Department of Horticulture.

Multiple cropping

Q: Whether multiple cropping/inter cropping in Arecanut garden with Cocoa, Pepper or Pineapple.

A: If there is sufficient shade and micro climate cocoa can be tried on a test basis.

OIL PLAM

Q: Whether Oil palm can be grown in Ananthapur district.

A: As per the basic requirements of Oil Palm, its cultivation in Ananthapur district is not possible.

MICRO IRRIGATION

Q: Whether Micro sprinklers can be used in the vegetable cultivation.

A: There is no specific information but take care while using micro sprinklers during monsoon and foliar diseases are prevalent.

GENERAL

Q: Control measures for wild pigs.

A: Use of solar fencing, drum beating and firing the crackers during night times will avert the wild pigs.

CITRUS

Q: Whether Kinnow orange can be grown in Ananthapur District.

A: Kinnow orange is not suitable in Ananthapur climate.

Prakasam District

Sri D.Veeranjaneeyulu, Martur.

CHILLIES / CAPSICUM

Q: CMV resistant varieties in Chillies/Capsicum may be suggested.

A: Resistant varieties are LCA-334 and 353. Remove and destroy the affected plants followed by spraying Imidachloprid to control the vector.

DRUM STICKS

Q: High yielding variety to produce uniform drum sticks may be suggested.

A: Pruning 1 m above ground level followed by fertilizer application. Spray Zinc sulphate @ 2g/lit on new flush.

GENERAL

Q: Training programme to raise vegetable/Chilli nurseries may be organization during June-July to the farmers.

A: Advised to contact Scientist of HRS, Lam/Rajendranagar

CULTIVATION UNDER SHADE NETS

Q: Whether there is any specific colour shade nets for each Horticulture crop.

A: No such information is available.

Q: Control measures for mites and thrips on Capsicum grown in shade nets.

A: Use insect proof net on the sides to prevent entry of sucking pests.

ONION

Q: Whether Onion can be grown by direct sowing and suggest the variety for Kharif.

A: Research gap

Horticulture Office, Ulavapadu, Prakasam District.

CASHEW

Q: Control measures for shoot and root borer in Cashew.

A: 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.

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 portion.

As prophylactic measures brush the tree trunk upto 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.

Q: Mealybug is rampant this year and request to suggest to control measures in Cashew.

A: Infested branches should be cut and destroyed. Acephate @ 1g or Dichlorovos 1ml per liter of water can be sprayed.

Q: Training and pruning methods to be followed in Cashew.

A: Train the plants in the initial stage keeping the 1 m. clear stem from the ground without branches. In the grown up plants remove the dead wood and criss cross branches during June-July after the harvest.

Q: Information of high density planting in Cashew.

A: The experiment is in the initial stage.

BHENDI

Q: Resistant variety in Bhendi against YVMV virus.

A: Resistance against YVMV is breaking down in the succeeding generations. Control the vectors.

Nellore District

K. Prabhakar Reddy

CITRUS

Q: Control measures for gummosis in Acid Lime.

A: Remove the affected portion with sharp knife and apply 1% Bordeaux paste or Copper Oxy Chloride. Drench the soil with 1% B.M. 1 day after the irrigation.

Q: Control measures for snow scales in Acid lime

A: Rub the trunk portion with gunny cloth and spray Metacid or Metasystox @ 2ml/lit. upto 1m. height on the trunk and branches.

Q: Control of pink disease in Acid Lime.

A: Pruning the affected branches and spray 0.3% COC or 1% B.M.

Q: Control of bronze coloured leaves developed during summer in Acid Lime.

A: Spraying Dicofal @ 3-5 ml/lit during March-April and followed by 4% Lime solution. Maintain the soil moisture.

DRUMSTICKS

Q: Techniques for improve the size of Drumsticks in PKM-1

A: Pruning 1 m above ground level followed by fertilizer application. Spray Zinc sulphate @ 2g/lit on new flush.

Ramesh Naidu, Balayapalli

CITRUS

Q: Acid Lime plants are dying after 5 years suggest control measures.

A: Citrus plants planted after citrus declines early. Use of heavy quantities of FYM + green leaf manure will reduce the incidence.

Q: In the high yielding plants of Acid Lime twig blight and twig drying is noticed after the harvest. How to control it?

A: Remove the affected plants and spray 1% B.M.

ADH, Nellore

CITRUS

Q: Supply of plant material from Petlur Research Station may be increased.

A: Already number of plant material has increased and it is proposed to increased further

Q: Control measures for Black fly and Mangu mite in Acid Lime.

A: For the control for Black fly spray Profenophas @ 2ml/lit or Chloropyriphos @ 2.5 ml/lit under surface of the leaves.

For the control of Mangu spray wettable sulphar @ 3 g/lit or Dicofol @ 5 ml/lit at monthly intervals from the peanut stage of the fruit.

Q: Rangapur Lime seed and also Petlur selection-1 and Balaji Acid Lime seeds may be supplied on a large scale to the farmers or nursery men.

A: Depending upon the availability the seeds will be supplied.

MANGO

Q: Suggest the off season varieties in Mango for Nellore district as the flowering season coincides with heavy rains.

A: The problem is put for discussion in Brain Storming session on 6th May 2010.

BANANA

Q: Supply of Amruthapani Banana tissue culture plants.

A: Tissue culture plants are produced in all varieties but as per demand they are produced.

COCONUT

Q: Control measures for Eriophyid mite in Coconut.

A: Due to feeding of mite colonies, white streaks/triangular yellow and brown patches appear near the perianth region on nuts of 2 to 4 months age. These brown patches increase on the nut surface in the advanced stage causing longitudinal cracks. Button drop or reduced nut size and thereby decreased copra yield are associated.

Management:

- Collection and destruction of mite infested dropped nuts.
- Root feeding with Azadiractin 10000 ppm @ 10 ml + 10 ml of water or spraying of Azadiractin 10000 ppm @ 5 ml/lt of water.
- Application of neem cake @ 5 kg/palm/year along with other organic manures including green manuring.
- Application of recommended dose of fertilizers (1 kg U, 2 kg SSP, 2.5 kg MOP/palm/year)
- Providing regular irrigations.
- Growing of intercrops like banana, yams, cocoa, turmeric and vegetables.

CHILLIES

Q: Control measures for Conifera blight in Chillies.

A: Spraying 1 g streptocyclin mixed with 30g of Copper oxychloride per 10 lit of water twice at one week interval

BETELVINE

Q: Control measures for wilt disease in Betelvine.

A: Prophylactic soil drenching with 1% Bordeaux mixture @ 1 lt per linear meter and 0.5% Bordeaux mixture as foliar spray @ 500 lt per ha at monthly and fortnightly intervals respectively should be undertaken from November to February months.

MELONS

Q: Virus resistant high yielding varieties in Watermelon may be developed.

A: Trials will be initiated.

VEGETABLES

Q: High yielding varieties/hybrids in Colacasia may be suggested.

A: Satamukhi, KCS-2, KCS-3.

Q: Local Brinjal variety may be utilized and improved by the Scientist.

A: It will be collected and utilized in future programmes.

GENERAL

Q: Diagnostic field visits may be organized at least once in a month by the scientist.

A: Due to the paucity of personnel the scientists will be deputed as and when necessary arises.

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.V.Seshadri, Director of Extension, APHU

Co-Chairman : Dr.B.Srinivasulu, Controller of Examination, APHU

Sub-groups

1. Fruits -	Dr. Bhagwan Dr. Gopal
2. Vegetables -	Dr. R.V.S.K.Reddy Dr. Subrahmanyam
3. Spices & -	Dr. Madhava Rao
Plantation crops -	Dr.B.Srinivasulu
4. Flowers -	Smt. Madhumathi Smt. Ruth

Rapporteurs : Dr.K.Subramanyam, Senior Scientist (PP)
Smt. G.Thanuja Sivaram, Scientist (Hort.)

Mango

1. Hopper control

   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. Occurrence of different types of Banganpalli (differencing in shape)

   Already the trial was under program under AICRP

   Collection of ecotypes will be collected throughout state.
3. Irregular flowering and late flowering

   At Brain storming session, detailed discussions will be done
4. High density planting in Mango

   At Brain storming session, detailed discussions will be done
5. Neeleshan Black spots and oozing of gum/brown discoloration

   Suggestion: 1) Spray Boran (19%) at 1 gm/lt. at peanut stage of fruit.

6. Change of fruit color due to management practices?

   Research will be taken up

7. Whether in Nellore Mango cultivation be suggested due to N.W. Monsoon?

   At Brain storming cession, detailed discussions will be done

8. Pesticides and fungicide combination?

   Research will be taken up

9. Micronutrient deficiency Zn and Boron correction in Mango

   Spray : 1) $ZNSO_4$ – 1gm/lt. during July

   2) Boran (19%) – 1gm/lt. during August

Guava

1. High density and medow orcharding in guava – whether it is feasible in A.P. if so what is the spacing?

   Even though CISH Lucknow has developed high density and medow orcharding – the trial (New) was taken up in FRS – Sangareddy. 2. Any Red fleshed varieties produced by University?

   Kohir Red was identified for red colour pulp and is being tested under AICRP trial.

Sapota

1. Fertilizer & water management and pruning in Sapota

Manuring

400 g N_2 + 200 g P_2O_5 + 450 g K_2O per year for trees above 10 years given in two splits during June-July and October-November.

Under rainfed condition, fertilizers should be applied before the onset of monsoon. However, under irrigated conditions it should be applied in 2 splits. Total quantity of organic manure and half of chemical fertilizers should be applied at the beginning of monsoon and remaining half in the post-monsoon period (September-October). Since 90% of active roots are distributed within drip up to a depth of 30cm. nutrients should be applied under tree canopy and mixed thoroughly in soil up to a depth of 15cm. In Zn and Fe deficiency, the requirement should be met through application of organic manures and spraying in $ZnSO_4$ and $FeSO_4$ (0.5%).

Irrigation

Irrigation is necessary immediately after planting and during the first year, Later summer irrigations are necessary. Irrigate the plants at 10-15 days interval during summer and fruit development stage. In the drip system of irrigation applies 60-100 lit. of water per day depending on the agro climatic conditions.

Pruning

Sapota being an evergreen tree requires no regular pruning but regulation of vegetative growth to improve productivity and quality of fruits is necessary. At times thinning of branches is affected in old plantation. Pruning in sapota is confined to open the tree to light and removal of dead and diseased branches.

Train the plants in the early stages by removing the lower branches up to 1m. height. In the adult plants remove the dried branches, criss cross branches and branches touching the ground. 2. In Guntur & Nellore – problem of fruit set and reduced yields in Sapota?

Survey will be conducted to look into the problem and accordingly research programmes will be formulated.

Banana

Identification of Somoclonal Variants and Virus indexing

It is possible by Phenotypical characters like plant stature, leaf orientation, leaf colour, chimeral features, etc.

Molecular characterization has to be standardized.

Virus indexing will be done at Environmental Protection Training and Research Institute, Hyderabad on payment.

Sigatoka leaf spot of Banana

Control of Potassium deficiency followed by spraying of 0.1% Propiconazole or Tridimorph.

Fertigation schedule

50% of the RDF i.e. 100 g each of N & K devided into 25 equal doses. 20 doses will be applied at weekly intervals from 6th to 25th week i.e. before promordea initiation and the remaining 5 doses at weekly intervals after bunch emergence i.e. approx. 36th week onwards.

Tying of Rope as support

It was failed in farmer's field in East Godavari district.

Tissue culture plants in Bontha, Karpura Chakkera Keli and Amrit Pani varieties

Tissue culture plants are produced in all varieties but as per demand they are produced.

Bunch Sleeves

White Polyethylene of 100 guage with 2.0% ventilation are recommended as bunch sleeves.

Turmeric

Rhizome Rot

Treating the seed rhizomes with Metalaxyl + 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 + Menozeb @ 2.0 g/lit.

Nutrient management

Turmeric needs very heavy manuring. Chemical fertilizers should be applied along with FYM and organic cakes as detailed below.

Time of apply	Fertilizer	Qty./acre
Basal	FYM	10 T
	Castor/Neem cake	200 Kg.
	SSP	150 Kg.
	MOP	25 Kg.
40 Days after Planting	Neem cake	200 Kg.
	Urea	50 Kg.
80 Days after Planting	Urea	50 Kg
	MOP	25 Kg.
120 Days after Planting	Urea	50 Kg.
	MOP	25 Kg.

Coconut

Control of Eryophid Mite

- Collection and destruction of mite infested dropped nuts.
- Root feeding with Azadiractin 10000 ppm @ 10 ml + 10 ml of water or spraying of Azadiractin 10000 ppm @ 5 ml/lit of water.
- Application of neem cake @5 kg/palm/year along with other organic manures including green manuring.
- Application of recommended dose of fertilizers (1 kg U, 2 kg SSP, 2.5 kg MOP/palm/year)
- Providing regular irrigations.
- Growing of intercrops like banana, yams, cocoa and turmeric or vegetables.

Oil Palm

Oil Palm cultivation in Ananthapur disrtrict

As per the basic requirements of Oil Palm, its cultivation in Ananthapur district is not possible.

Vegetables

Tomato

Rainfed varieties

PED, Arka Vikas, Arka Sourab

Control of Blight disease

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

Control Tomato Spotted Wilt Virus

Remove & destroy the affected plants and control the vectors by spraying Dimethoate, 2m/l.

Control of Leaf miner

Spray Acephate 1.5g/lit or Imidachloprid 0.3 ml/lit.

Chilli

Control of Thrips

Seed treatment followed fipronil granules during nursery as well as in main fields & also spraying Fipronil 2ml or spinosad @ 0.3ml

Control of Cucumber Mosaic Virus

Remove & destroy the effected plants followed by spraying Imidachlopid to control vector. Grow resistant virus-LCA-334, 353

Control of Coneephara blight

Spraying COC @ 30 g + Streptocylin @ 1g/10lit. of water

Brinjal

Control of Wilt

Always transplant disease-free, healthy seedlings. Follow 3 year crop rotation in infested fields by including cereals and crucifers.

Purification of variety in a village in Nellore district

The material will be collected for further maintance and research.

Control of Shoot & Fruit borer

Three sprayings of Carbaryl 50% w.p. 2.5 g or Monocrotaphos @ 1.25 ml per lit of Water. A safe period of 10 days should be maintained between spraying and harvest. Ready mixture Betacyfluthrin + Imidaclopride 21% @ 200 ml/ha is effective. The trade name is Solomon 300 OD which is available in the market.

Control of Flower drop

Soil moisture should be maintained. Spray planofix @ 2.5ml/10lit. of water.

Drumstick

Decrease in yield in succeeding crops

Pruning 1m. above ground level followed by fertilization. Spray Zinc Sulphate @ 2 g/lit on new flush

Capsicum

Sucking pests problem in shadenet cultivation

Insect proof net on the sides to prevent entry of sucking pests and spray systemic pesticides.

Okra

Control of Yellow Vein Mosaic Virus

Resistance against YVMV is breaking down in the succeeding generations.

Rouge diseased plants.

Use resistant varieties Arka Anamika and Arka Abhay.

Control the vectors by spraying four to five foliar sprayings of Dimethoate (0.05%) or Oxydemeton methyl (0.02%) at 10 day interval, followed by 1 or 2 sprays of mineral oil (2%). Apply Carbofuran @ 1 kg/ha at the time of sowing.

Flower crops

1. Suitable varieties in flower crops Chrysanthemum (Chandini) and Marigold.

   Experiments will be laid out at HRS, Mahanandi.
2. Supply of good quality seed of Chandini

   To take up at HRS, Mahanandi and HRS, Anantharajupet.
3. Correction of iron deficiency in Crossandra

   Spray Ferrous Sulphate @ 2g/lit.
4. Control of Nematodes in Crossandra

   Apply 250 kgs of Neem cake/acre and 10 kg of Carbofuran granules/acre
5. Suggest the improved varieties in Tuberose.

   Hyderabad single, Hyderabad double, Calcutta Single, Shringar, Vaibhav, Bejwal etc.,
6. Control of rotting disease of tuberose and to increase the flower size.

Drench the soil with Blitox @ 3g/lit and spray Rogor or Metasystox @ 2ml/lit to control sucking pests during summer months.

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. High density planting.
3. Nutritional and irrigation requirements of more than 40 years old mango plants.
4. Fertigation in Mango
5. To study the non conversion of green pigment in some of the varieties like Rumani in Chittor district.
6. To study the research for the delay in flowering every year which is causing low yields.
7. Identify the varieties for short, medium and long duration varieties in Mango to sustain the processing industry to enable to supply the fruits for at least six months.

BANANA

1. Molecular characterization of varieties has to be standardized.

CITRUS

1. Root stock for Calcarious soils.
2. Identification of budlings on Rangapur lime and Rough lemon root stocks in the nurseries.
3. Technology for solar drying of Acid Lime fruits.
4. Fertigation

GUAVA

1. To develop Red fleshed variety for processing.
2. Fertigation
3. High density planting in Guava

SAPOTA

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

POMEGRANATE

1. Package of practices for high density planting.
2. Fertigation

PAPAYA

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

PALMYRAH

Develop early and high yielding variety

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

CHILLIES

1. Package of practices for capsicum grown under shadenet.
2. Control of pests and diseases in Capsicum grown under shadenet

VEGETABLES

1. Onion variety suitable for Kharif cultivation either by transplanting or direct sowing.
2. Package of practices for KP Onion
3. Wilt resistant variety in Brinjal
4. Yellow vein mosaic virus resistant variety in Okra
5. Production of F_1 hybrids in vegetables
6. Herbicidal control of weeds in vegetables
7. Development of value added product of Tomato during glut by solar radiation
8. Fertigation.
9. Purification of Brinjal variety in a village in Nellore district
10. Dehydration Techniques in onion
11. Onion storage

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. Festigation 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. Hopper control
2. Neeleshan Black spots and oozing of gum/brown discoloration. (Spray Boron 1% @ 1 gm/ lit at peanut stage of fruit).

SAPOTA

1. Fertilizer & water management and pruning in Sapota

BANANA

1. Control of Sigatoka leaf spot

CITRUS

1. Control of Gummosis in acidlime in Nellore/Ananthapur
2. Control of Pink disease in acidlime in Nellore
3. Control of Snow scales in acidlime in Nellore
4. Control of Mangu mite and blackfly infestation on acidlime in Nellore/Prakasam
5. Control of Dry root rot in sweet orange in Ananthapur/Kuirnool
6. Control of Fruit drop in sweet orange in Kadapa
7. Correction of Micronutrient deficiencies in calcarious soil of Kurnool and Mahboobnagar Districts.

TOMATO

1. Control of Blight disease

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

CHILLI

1. Control of Thrips
2. Control of Choanephora blight

BRINJAL

1. Control of Shoot & fruit borer
2. Control of Flower drop

CAPCICUM

1. Control of Sucking pests problem in shadenet cultivation

Recommendations

1. It is suggested to name the Horticultural Research Station at Anantarajupet in memory of late Dr. K.C.Noik, a stalwart and founder of Kodur Research Station who did a pioneering service to the Horticulture to honour his services.
2. Fertigation schedule in Horticulture crops (Bulletin) to be prepared obtaining the information from other states/research stations.
3. Enhancement of seed and plant material from the Research Stations.
4. Publication of technical bulletins utilizing of ATMA Funds
5. Visual aids such as CDs about research stations and its research activities should be developed.
6. Team may be constituted involving farmers, scientists and department of horticulture for conducting the survey in different areas and to forecast possible problems.
7. Crop Museums have to be developed in the research stations with mandate crops.
8. Introduce new crops for crop diversification.
9. It is suggested to conduct the farmers interaction meeting to enlighten about the Bt Brinjal locally.
10. Suggested to prepare the Horticultural plan for Rayalaseema.
11. Suggest the crop diversity in Chittoor district and specify the crops and variety.
12. Establishment of one Horticulture Research Institute in Chittoor District.
13. Establishment of Mango Board in the District.
14. As there is a lot of area under aromatic and flowering plants around Madanapalli area a Research Station may kindly be started at Madanapalli.
15. Studies on the precession farming may be taken up which gives 3-4 times increased yields over traditional farming in line with Krishnagiri, Dharmapuri district, Tamilnadu.
16. The Vapour heat treatment unit may be put to good working condition to enable the farmers to utilize it for exporting mango.

At the end of the Session/Day Dr.B.Srinivasulu, Senior Scientist (Horticulture), HRS, Anantharajupet 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
HORTICULTURAL RESEARCH STATION, ANANTHARAJUPET

Horticulture

S.NO.	CODE NO.	TITLE OF THE PROJECT
1.	P1-94/1-AHD-A00-0600/1120	Evaluation of pre-released mango bybrids
2.	P1-94/1-AHD-A00-0600/1120	Studies on the production and quality of mango hybrids/varieties released from other research stations.
3.	P1-2000/2-AHD-A00-0600/1120	Survey for selection of promising clones for commercially grown mango varieties.
4.	P21-2007/1-AHD-A00-A50/1120	Studies on the effect of pruning on growth and flowering behaviour of mango variety, Baneshan
5.	P1-2008-09/1-AHD-A00/1740	Effect of bulky organic manures on growth, yield and quality of banana cv. Grand Naine (AAA)
6.	P1-08/AHD-A00/F-30/1112	Initial evaluation of banana cultivars for yield and quality.
7.	P1-2008-09/1-AHD-A00/1740	Integrated Nutrient Management in Papaya
8.	P1-2007/1-AHD-A00/F30.	Collection and evaluation of promising varieties of pomegranate.
9.	P-2009/1-AHD-A00-F50/1190	Studies on effect of bahar treatment and pruning on cropping pattern of Pomegranate.
10.	P1-91/1-AHD/A00/0600/1290	Exploitation of Minor fruit crops for commercial cultivation.
11.	P1-2009/1-AHD-A00/F30/0940	Introduction and evaluation of Wine grapes
12.	P1-08/1-AHD-A00-0600/1190	Introduction and evaluation of Passion fruit.
13.	P1-2009/1-AHD-A00/F30/0810	Collection, maintenance and evaluation of Muskmelon germplasm
14.	P1-98/1-AHD-A00/0600/2370	Collection, maintenance and evaluation of Turmeric germplasm for crop improvement
15.	P1-08/1-AHD-A00/A50/2370	Initial evaluation trial in Turmeric
16.	P1-94/1-AHD-A00/F30/2190	Collection, maintenance and evaluation of betelvine germplasm.
17.	P1-2006/1-AHD-A00/1740	Collection, maintenance and evaluation of Onion.
18.	P1-2008-09/1-AHD-A00/1740	Integrated Nutrient Management in Onion
19.	P1-2008-09/1-AHD-A00/1623	Response of Capsicum, Red cabbage and Broccoli to different levels of shade.

CITRUS RESEARCH STATION, PETLUR

S.NO.	CODE NO.	TITLE OF THE PROJECT
A. Horticulture		
1.	P1-93/1-AHD-F30/1000	Collection, maintenance and evaluation of Citrus germplasm.
2.	P1-97/1-AHD-F30/1060	Evaluation of Drip irrigation in acid lime
3.	P1-97/2-AHD-F30/1060	Root stock trial in acid lime
4.	P1-96/1-AHD-H200/1040	Clonal selection in acid lime for canker resistance and high yield.
5.	P1-98/1-AHD-A00/0600/1120	Evaluation of promising Mango hybrids/varieties
6.	P1-98/2-AHD-F30/1290	Collection, maintenance and evaluation of minor fruit crops
7.	P1-2000/2-AHD-F30/1290	Response of NPK on pre-released acid lime selection (CRS-1)
8.	P1-2001/1-AHD-F30/1190	Evaluation of Tamarind clones
9.	P1-2001/2-AHD-F30/1190	Evaluation of Jamun clones
10.	P1-2001/3-AHD-F30/1190	Evaluation of wood apple clones
11.	P1-2001/4-AHD-F30/1190	Acid lime varietal trial
B. Plant Pathology		
1.	P1-93/1-AHD-H20/1040	Survey and monitoring of important diseases of acid lime.
2.	P1-96/1-AHD-H20/1040	Clonal selection in acid lime for canker resistance and high yield.
3.	P1-2006/1-AHD-H20/1040	Production and Distribution of Virus Free Planting Material
4.	P1-2008/1-AHD-H20/1040	Management of Sour rot disease in acid lime.
5.	P1-2008/2-AHD-H20/1040	Validation of IDM technology for management of dry root rot in acid lime
6.	P1-2008/3-AHD-H20/1040	Management of bark and wood splitting disease in acid lime

HORTICULTURAL RESEARCH STATION, ANANTAPUR

Horticulture

1. Germplasm survey, collection evaluation and maintenance of Ber.

1. Germplasm survey collection evaluation and maintenance of tamarind.

2. Germplasm survey collection evaluation and maintenance of aonla.

3. Germplasm survey collection evaluation and maintenance of Custard apple.

4. Sub surface drip irrigation influence on mango.

Plant pathology

1. Survey and surveillance of diseases of arid zone fruits.
2. Epidemiology of powdery mildew of ber.
3. Bio-control of ber powdery mildew.
4. Effective Management Schedule against Bacterial Blight in Pomegranate.
5. Integrated management of color rot in crossandra

HORTICULTURAL RESEARCH STATION, MAHANANDI

S.NO.	CODE NO.	TITLE OF THE PROJECT
Horticulture		
1	P1-2008-09/1-AHD-F30/1530	Identification of marigold varieties for commercial cultivation in Rayalaseema region.
2	P2-2008-09/2-AHD-A00/1740	Integrated Nutrient Management in onion
3	P4-2008-09/4-AHD-F-30/1850	Studies on the production of tomato under polyhouse conditions.
4	P5-2008-09/5-AHD-F-30/1850	Studies on the production of capsicum under polyhouse conditions
5	P6-2008-09/6-AHD-F-25-1112	Studies on the Integrated Nutrient Management in banana.
6	P7-2008-09-7-AHD-F-25/1112	Comparative yield trial with banana cv.Sugandham and Grand Naine.
7	P8-2008-09/8-AHD-F-30/1850	Minimisation of fertilizer usage through fertigation and foliar application in selected vegetables (Tomato)
8	P9-2008-09/8-AHD-F-30/1850	Minimisation of fertilizer usage through fertigation and foliar application in selected vegetables (Brinjal)
9	P2-2009-10/2-CXXF30/3300	Staggered planting technologies for extending the availability of gladiolus flowers
10	P1-2009-10/1-RKVY	Standardization of techniques for continuous growth and flower production in jasmine.
Entomology		
1	P1/2009/01/CHD-H10/1300	Survey and surveillance of pests on major horticultural crops existing in scarce rainfall zone.
2	P1/2009/02/CHD-H10/1740	Effect of staggered planting on thrips incidence and bulb yield in onion.
3	P1/2009/03/CHD-H10/1840	Bio efficacy of Bt formulations for the control of fruit borer in orkra.
4	P1/2009-04-CHD-H10/1830	Management of brinjal shoot and fruit borer through mass trapping technique

5	P1/2009/05/chd-h10/1830	Development of integrated Pest Management module for Brinjal shoot and fruit borer.
Plant Pathology		
1	P1-2008-1-AHD-H20/1300	Survey and surveillance of diseases in major Horticultural crops exhisting in Rayalaseema zone.
2	P1-2008-2-AHD-H20/1300	Studies on Epidemiology of major diseases of Horticultural Crops
3	P1-2009-3-AHD-H20/1840	Integrated management of wilt in tomato crop.
4	P1-2009-4-AHD-H20/1840	Management of Leaf curl and bud necrosis virus disease of tomato.

CITRUS RESEARCH STATION, TIRUPATI

S.NO.	CODE NO.	TITLE OF THE PROJECT
Horticulture		
A. Ongoing Projects		
1.	P2-68/1-AHD-F .30/1000	Collection, characterization, conservation, utilization of Germplasm
2.	P2/891-AHD-F.30/1060	Evaluation of Sweet orange
3.	P2-88/AHD-F.30/1030	Clonal selection in Acidlime
4.	P2-90/3-AHD-F.30/1060	Clonal selection in Sweet orange
5.	P2-1/AHD-F.30/1030	Effect of Organic and Inorganic nutrition in Acidlime
6.	P2-2003-1/AHD-F25/1060	Effect of Bio-fertilizers on Growth, Yield and quality of Sweet orange
7.	P2-2003-2/AHD-F.25/1060	Fertigation studies in Sweet orange
8.	P2-2007-1/AHD-P-10/1060	Standardization of stage wise requirement of nutrient in citrus (Sweet orange)
9.	P2-2007-2/AHD-P-10/1060	Identification of critical stage of water requirement in citrus
10.	P2-2007-3/AHD-P-10/F25/1060	Studies on irrigation and nutrient interaction in citrus (Sweet orange)
11.	P2-2007-2/AHD-P-10/1060	Standardization of stage wise requirement of nutrients in Sweet orange.
12.	P2-2007-4/AHD F-25/1030	Studying on residual and cumulative effects of nutrients in Acid lime
13.	P2-2007-5/AHD-F-25/1060	Studying on residual and cumulative effects of nutrients in Sweet orange.
14.	P2-2008/AHD-F-30/1060	Orchard efficiency analysis of Sweet orange

B. New Projects proposed		
15.	P2-2008-1/AHD-F-30/1030	Evaluation of Acid lime cultivars under Tirupati conditions
16.	P2-2008-2/AHD-F-30/1060	Nutrient management under high density planting in Sweet orange
Entomology		
1.	P2-80/1-AHD.10/1000	Survey and surveillance of pests and their natural enemies.
2.	P2-89/1-AHD-H.10/1040	Population dynamics of citrus leafminer
3.	P2-02/AHD-H-10/1040	Seasonal incidence, biology and management of citrus butterfly with bioagents in citrus nursery
4.	P2-02/1-AHD-H.10/1040	Chemical and non-chemical control of citrus leafminer (*Phyllocnistis Citrella*)
5.	P2-03/2/AHD-H.10/1040	Chemical control of Citrus black fly
6.		Survey and identification of Citrus Nematodes.
7.		Evaluation of Bio-rational insecticides against citrus mites.
Plant Pathology		
1.	P2-82/1-AHD-H.20/1000	Survey for incidence of diseases in Citrus
2.	P2-89/1-AHD-H.20/1060	Integrated Management of fungal disease of Citrus-Dry root rot in Citrus nursery.
3.	P2-89/1-AHD-H.20/1060	Characterization of Citrus Yellow Mosaic Virus
4.	P2-04/-AHD-H.20/1060	Studies on greening disease – survey, isolation and characterization of Citrus greening bacterial isolates.
5.	P2-84-AHD-H.20/1030 and 1060	Identification and molecular characterization of CTV isolates.
6.	P1-03/AHD-1+H20/1060	Etiology of Bark and Wood splitting disease in Acid lime
7.	P2-72-AHD-H.20/1060	Production and distribution of virus free planting material

ANNEXURE-II

List of Participants - Farmers

S.No.	Name of the Farmer	Address
	Sarvasri	
Chittoor District		
1.	D. Siddaiah	Chinthakalava
2.	D. Kucheludu	Chinthakalava
3.	P. Venkateswar	Chinthakalava
4.	D. Krishnaiah	Chinthakalava
5.	C. Sree Ramulu	Chinthakalava
6.	K.Kuppayya	Chinthakalava
7.	G. Munaswamy	Chinthakalava
8.	D.Jaya Ramayya	Chinthakalava
9.	P. Ramesh	Chinthakalava
10.	P. Subrahmanyam	Chinthakalava
11.	K. Narayana Reddy	Chinthakalava
12.	A. Prabhakar Raju	Surendharnagar
13.	V. Peera Swamy Reddy	Surendharnagar
14.	V. Velu Reddy	Surendharnagar
15.	M. Muraga Reddy	Surendharnagar
16.	M. Raja Reddy	M.G.Kota, Nimmanapalli
17.	M. Venugopal Reddy	A.R. Nimmanapalli
18.	G. Subrahmanyam Reddy	Palamanur
19.	N. Ram Murthy	K.B.R.Puram
20.	S. Chiranjeevulu	Rama Samudram
21.	E. Rama Murthy	Rama Samudram
22.	S. Vara Prasad	Ramasamudram
23.	N. Dhanunjaya Reddy	R.C.Puram, Nadalur V&PO
24.	T. Raghu	R.C.Puram, Nadalur
25.	K. Narashimhulu	Ramsamudram
26.	M. Sreenivasulu	Palamaneru
27.	C. Krishna Murthy	Palamaneru
28.	A. Ananda Naidu	R.C.Puram
29.	P.S.V. Reddy	Vadamalapeta
30.	K. Bala Krishna Reddy	Vadamalapeta
31.	M. Sri Ramulu Reddy	Vadamalapeta
32.	C. Radha Krishna Reddy	Vadamalapeta
33.	C. Changalarayudu	Vadamalapeta
34.	C.V.Maheswara Raju	Vadamalapeta
35.	C. Prabhakar Raju	Vadamalapeta
36.	S. Nageswara Rao	Vadamalapeta
37.	N. Dhanunjaya Naidu	Vadamalapeta
38.	N. Jayapal Naidu	Vadamalapeta
39.	P. Muni Krishnaiah	Vadamalapeta

40.	M. Nagi Reddy	Vadamalapeta
41.	A. Niranjan Reddy	Vadamalapeta
42.	B. Rajya Laxmi	Adaparevu Palli, Tirupati
43.	V. Venkatami Reddy	Adaparevu Palli, Tirupati
44.	P. Padmavathi	Adaparevu Palli, Tirupati
45.	Sri Muni Lakshmi	Adaparevu Palli, Tirupati
46.	P. Ramakka	Adaparevu Palli, Tirupati
47.	G. Nagamma	Adaparevu Palli, Tirupati
48.	Chamundeswari	Adaparevu Palli, Tirupati
49.	M. Rama Devi	Adaparevu Palli, Tirupati
50.	Vumireddy Laxmamma	Adaparevu Palli, Tirupati
51.	V. Krishna Reddy	Adaparevu Palli, Tirupati
52.	A. Chinnappa Reddy	Adaparevu Palli, Tirupati
53.	A. Ramachandra Reddy	Adaparevu Palli, Tirupati
54.	G.V. Jaya Chandra Chowdary	Kotturu, Tirupati (R)
55.	P.V. Naidu	Kotturu, Tirupati (R)
56.	V. Srinivas	Kotturu, Tirupati (R)
57.	Ram Prasad	Kotturu, Tirupati (R)
58.	G. Sree Hari Raju	Kotturu, Tirupati (R)
59.	S.Chitti Babu	Puttur
60.	M. Ramachandra Rao	Puttur
61.	B. Sri Kanth Reddy	Puttur
62.	M. Srinivasulu	Puttur
63.	R. Mani Kumar	Puttur
64.	C. Muni Krishna	A.Kandriga
65.	N. Venkata Krishna	A.Kandriga
66.	G. Munayya	A.Kandriga
67.	G. Mohan	A.Kandriga
68.	M. Mohan Rama Rao	Chiguruwada
69.	M. Nageswara Raju	K.B.R.Puram
70.	P. Gangadhar Reddy	Nodavalu (v v) R.C.Puram
71.	C. Lokanatham Reddy	Nodavalu (v v) R.C.Puram
72.	K. Dwarakanath Reddy	Kadiri Mangalam
73.	CH. Naga Sundaram Naidu	Mitoor Village
74.	P. Venkatadri	Mitoor Village
75.	K. Purushotham Naidu	Mitoor Village
76.	C. Ramesh	Mitoor Village
77.	M. Parasurami Reddy	Mitoor Village
78.	A. Tulasi Rami Reddy	Mitoor Village
79.	M. Nadha Muni Reddy	Mitoor Village
80.	M. P. Lakshmi Reddy	Mitoor Village
81.	M. Parameswar Reddy	Mitoor Village
82.	A. Murali Reddy	Mitoor Village
83.	A. Rama Krishnaiah	Chandragiri
84.	Wing Commander P. Bhaskar Reddy (Retd.)	Puttur

85.	T. Lalit Kumar	Tirupati
86.	P. Purushotham	Tirupati
87.	M. Vijaya Santhi	Tirupati
88.	Smt. N. Aruna Reddy,REC Member	Kalikiri
89.	U. Naga Raju	Durga Samudram
90.	A. Narayana Reddy	Durga Samudram
91.	Sheik Dada Saheb	R.C.Puram
Nellore District		
1.	L. Janaki Ramaiah	Venkatagiri
2.	T. Ramesh Naidu	Balayapalli
3.	K. Venkata Subba Raju	Arimenipadu
4.	G. Ravindra Raju	Arimenipadu
5.	G. Raghurami Raju	Arimenipadu
6.	G. Rama chandrayya	Arimenipadu
7.	T. Prabhakar Reddy	Podalakur
8.	P. Penchala Prasad	Podalakur
9.	V. Dharmaiah	Podalakur
Prakasam District		
1.	Danda Veeranjaneyulu	Martur
Ananthapur District		
1.	B. Diwakar	Rapthadu
2.	P. Raghavendra Rao	Penukonda
3.	T. Bhaskar Naidu	Kotiganikalva
4.	P. Srinadha Reddy	Parampalli
5.	P. Krishna Murthy	Kudair
6.	M. Lakshminarayana Reddy	Ananthapur
Kurnool District		
1.	K. Jayarami Reddy	Sirivella
2.	D. Srinivasulu Yadav	Nandikotkur
3.	S. Chandra Sekhar	Nandikotkur
Kadapa Districty		
1.	G. Venkatarama Raju	Koduru
2.	A. Jaya Chandra Raju	Koduru
3.	R. Prabhakara Raju	Koduru
4.	L. Raja Mohan Reddy	Koduru
5.	K. Subrahmanyam Raju	Koduru
6.	A. Venkata Rama Raju	V.R.Palli
7.	K. P. Rama Raju	C.P.Palli
8.	S. Subrahmanyam Raju	Pottirajugari Palli
9.	N. Ravindra Reddy	Chiyyavaram
10.	C. Jaya Chandra Raju	V.P.R.Kandriga
11.	G. Venkata Rama Raju	V.P.R.Kandriga
12.	D. Sudarshana Varma	V.P.R.Kandriga
13.	R. Rajendra Raju	V.P.R.Kandriga

14.	D. Kiran Kumar	V.P.R.Kandriga
15.	K.H. Subrahmanyam Raju	Koduru
16.	K. Venkata Rama Raju	V.P.R.Kandriga
17.	K. Bala Krishna	V.Raju Palli
18.	K. Subbayya	O. Kothapalli
19.	M.N. Narashimha Reddy	Nandi Mandalam
20.	V.T. Changal Reddy	Obulavari palli
21.	K. Ramana Reddy	Obulavari Palli
22.	S.V. Mallesu	Muddanur
23.	J. Chinna Narayana Swamy	Vempalli
24.	G. Guru Prasad	Chinna Kathera palli
25.	C. Mallikarjun	Kadapa
26.	K. Sannamaiah	Kadapa
27.	B. Ramayya	Kadapa
28.	S. Chinna	Kadapa
29.	P. Obulesu	Kadapa
30.	P. Venu Gopal	Kadapa
31.	C. Naga Raju	Kadapa
32.	P. Manohar	Kadapa
33.	S. Madhusudhana Raju	Kadapa
34.	M. Rami Reddy	Kadapa
35.	A. Narayana Reddy	Kadapa
36.	B. Bhasker Reddy	Gaddamvari Palli
37.	B. Mallikarjuna Reddy	Gaddamvari Palli
38.	N. Siva Rami Reddy	Gaddamvari Palli
40.	Gajula Chenna Reddy	Gaddamvari Palli
41.	N. Obayya	Gaddamvari Palli
42.	Nelivela Pakkira Reddy	Gaddamvari Palli
43.	Ramireddy Stalin Reddy	Gaddamvari Palli
44.	N. Sanjeev Reddy	Gaddamvari Palli
45.	Garla Nadipi Ganganna	Gaddamvari Palli
46.	Kambam Lakshmi Reddi	Gaddamvari Palli
47.	C. Madhusudhan Reddy	Bhakara Peta
48.	P. Subba Rami Reddy	Bhakara Peta
49.	M. Prasada Reddy	Bhakara Peta
50.	T. Ravi Kumar	Bhakara Peta
51.	Y. Rami Reddy	Sidhavatam
52.	B. Vasudeva Reddy	Kosinepalli
53.	S. Eswar Naidu	Kosinepalli
54.	K. Bala Raju	Kosinepalli
55.	Y. Nilakanta Reddy	Kosinepalli
56.	B. Chinna papodu	Kosinepalli
57.	S.V. Krishnaiah	Uppaluru
58.	P. Ravi Shanker	Uppaluru

ANNEXURE-III

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

S.No.	Name of the Officer	Designation
	Sarvasri	
1.	Y.M.N.V.S.Gopichand	H.O. Martur, Ongole
2.	E. Narasimha Rao	DDH (AEZ), Chittoor
3.	B.S.Subbarayudu	ADH-II, Chittoor
4.	Rudra Raju Ramesh	ADA (R), Railway Kodur, Kadapa
5.	B. Subrahmanyam Reddy	APO, APMIP, Chittoor
6.	K. Venkata Narayana	HEO, Tirupati
7.	V.S. Dharmaja	ADH-I, Kadapa
8.	C.Amruth Kumar Reddy	H.O. Molakala Cheruvu, Chittoor
9.	G. Chandra Sekhar	H.O. (Tech.), Anantapur
10.	S.Vandana	H.O., Chittoor
11.	K. Koteswara Rao	H.O., Chittoor
12.	Y.V.S. Prasad	ADH-I, Chittoor
13.	Harinatha Reddy	ADH-II, Anantapur
14.	M.K.V.Srinivasulu	ADH, Kadapa
15.	T.Sekhar	ADH, Nellore
16.	S.A.Bala Subrahmanyam	H.O. Tirupati
17.	B.M.V.Narasimha Rao	H.O. Nellore
18.	R. Srinivasulu	H.O. Ulavapadu, Prakasam.
19.	M.V.Subba Reddy	H.O. Naidupet, Nellore Dt.
20.	M.V. Madhusudhan	ADH-I, Kurnool
21.	M.A. Akbar	ADH-II, Kurnool
22.	D. Vidya Sagar	R.M. A.P. Agros, Chittoor
23.	A.V.Nagamani	H.O., Puthalapathu, Chittor
24.	N. Prasada Rao	H.O., Muddanur
25.	K. Sridhar Reddy	H.O., Kamalapuram
26.	K. Obulesu	F.C., Kamalapuram
27.	Y. Rama Rao	H.O. Chirala, Prakasam Dt.

ANNEXURE-IV

List of Participants - (Scientists of APHU)

S.No.	Name of the University Officers/Scientist	Designation
	Sarvasri	
1.	D. Shredhar	Scientist (Hort.), HRS, Mahanandi
2.	G.Sri Krishna	SMS, (Hort.), RASS, KVK, Tirupati
3.	Dr. Subrahmanyam	Senior Scientist (Pl. Path.), HRS, Ananthapur
4.	Dr. N. Srinivasan	Senior Scientist (Hort.) HRS, Ananthapur
5.	Smt. G.S.Thanuja	Scientist (Hort.) CRS, Petlur
6.	Dr. B. Srinivasulu	COE, APHU
7.	DR.K.V.Seshadri	DE, APHU
8.	CH.Ruth	Scientist (Hort.) HRS, Mahanandi
9.	N. Narayana	Senior Scientist, Tirupati
10.	Dr. R.V.S.K. Reddy	Senior Scientist (Hort.) VRS, Rajendranagar
11.	Dr. A. Bhagawan	Senior Scientist (Hort.) FRS, Sangareddy
12.	Dr. P. Srinivas	Scientist (Hort.) CRS, Petlur
13.	Dr. A. Ranga Reddy	Principal Scientist, GRS, Hyderabad
14.	V.N.P. Siva Rama Krishna	Scientist (Hort.) Tirupati
15.	Dr. D. Srinivasa Reddy	Scientist (Ent.) HRS, Anantharajupet
16.	Dr. A. Sreelatha Rani	Scientist (Pl. Path) CRS, Tirupati
17.	G. Sarada	Scientist (Ent.) CRS, Tirupati
18.	C. Madhumathi	Scientist (Hort.) HRS, Anantharajupet
19.	A. Rama Krishna Rao	Co-ordinator, DAATTC, Chittoor
20.	Y. Subba Rao	Scientist (Ent.) HRS, Mahanandi
21.	D. Madhava Rao	Senior Scientist (Hort.) HRS, Darsi

ANNEXURE-V

List of Participants - (Press and Media)

S.No.	Name	Address
	Sarvasri	
1.	K. Srinivasa Rao	AIR, Tirupati
2.	G. Raju	Sub-Editor, Annadata
3.	G. Venu Gopal Reddy	AIR, Tirupati
4.	Krishna	Photographer
5.	Sekhar	Local T.V.
6.	Sridhar	E-T.V.
7.		Andhra Jyothi
8.	I. Subrahmanayam	
9.	K. Bhaskar	Vaartha
10.	M. Venkata Subbayya	S.C.V.Reporter
11.	K. Chitti Babu	Balaji Voice Reporter
12.	C. Ramesh Babu	S.C.V.Reporter
13.	N. Narasimhulu	S.C.V.Reporter
14.	M. Pradeep Kumar	Sai Balaji
15.	P. Venu Gopal	Eenadu
16.	M. Hari Krishna	
17.	T.H. Ramulu	

ANNEXURE-VI

List of Participants - (Group discussion/interaction)

FRUITS, SPICES AND PLANTATION CROPS

Sl.No.	Name	Designation
1.	T.Sekhar	ADH, Nellore
2.	T.Ramesh Naidu	Farmer
3.	T.Prabhakar Reddy	Farmer
4.	K.Jaya Raami Reddy	Farmer
5.	D.Sreenivasulu Yadav	Farmer
6.	J.V.Deepika	Horticulture Officer
7.	M.Aruna Reddy	REC Farmer, Kalikiri
8.	U.Naga Raju	Horticulture Officer, Baceed
9.	C.Madhu Sudhana Reddy	Farmer, REC Member
10.	Sanjeeva Reddy T.D.V.	
11.	Dr.K.Gopal PS (CP & Head)	CRS, T
12.	D.A.SenhaLatha Rani	CRS Scientist, CRS, Tirupati
13.	G. Sarada (CRS)	Scientist, CRS, Tirupati
14.	G.S.Thanuja (SCH)	Scientist, CRS, Petluru
15.	Dr. D. Ranga Reddy	Principal Scientist (E) & Head, GRS, Hyderabad
16.	Dr.A.Bhagwan	Senior Scientist, FRS, Sangareddy

ANNEXURE-VII

List of Participants - (Group discussion/interaction)

VEGETABLES

Sl.No.	Name	Designation & Address
1.	Dr.R.V.S.K.Reddy	Senior Scientist (Hort.)
2.	Y.V.S.Prasad	ADH-I, Chittoor
3.	Dr.Natarajan Sreenivasan	Senior Scientist (Hort.)
4.	G.Subrahmanyam Reddy	Farmer, Ata Vice Chairman, Palamaur, Chittoor Dt.
5.	M.Sreenivasulu	Farmer, Palamanarur
6.	B.Subrahmanyam reddy	ADD-3, APMIP,
7.	Y.Subba Rao	Scientist (Ento.)
8.	Y.M.N.V.S.Gopichand	HO, Martur, Prakasam
9.	S.Vandana	C.H.O, G.D. Nellore
10.	A.V.Naga Rani	C.H.O.
11.	C.Amreeth Kumar Reddy	H.O. Molakalacheruvu, CTR.
12.	S.Azmathulla	Kalicherla (P.O.)
13.	P.Krishna Murthy	Antharaganga (V), Anantapur
14.	Dr.K.Subramanyam	Senior Scientist (PP), HRS, Anantapur
15.	M.Venugopal Reddy	A.R.Mandyamvari Palli, Nimmana puli (Mandal), Chittoor Dt.
16.	M.Raja Reddy	M.G.Kota, Nimmanu Puli (Mandal), Chittor Dt.

ANNEXURE-VIII

List of Participants - (Group discussion/interaction)

FLOWERS

Sl.No.	Name	Designation & Address
1.	Smt. C.Madhumathi	Scientist (Hort.), HRS, Anantharajupet.
2.	Smt. Ch. Ruth	Scientist (Pl.Path) HRS, Mahanandi
3.	B. Gangarami Reddyy	R.C.Puram Mandal, Chittoor district
4.	G. Chandra Sekhar	Penumur Mandal, Chittoor district
5.	Baskar Naidu	Ananthapur
6.	Narasimha Reddy	Kadapa
7.	L. Janakiramaiah	Chittoor