

**DRAFT PROCEEDINGS OF THE 32<sup>nd</sup> CROP SCIENTISTS MEET – HORTICULTURE 2016  
HELD AT SEMINAR HALL I, TNAU, COIMBATORE  
23.05.2016 and 24.05.2016**

The 32<sup>nd</sup> Crop Scientist's Meet on Horticulture was held at TNAU, Coimbatore between 23.05.2016 and 24.05.2016 at Seminar Hall I.

The Vice Chancellor, Deans, Directors and Special Officers, Scientists from Horticulture, Crop Protection and other disciplines attended the CSM (H) 2016.

Theme based presentations of ongoing research sub projects, action taken report based on the recommendations of CSM (Hort.) 2015, research highlights and action plan for next three years pertaining to Horticulture & Plant protection was presented during the meeting. Remarks are given below for follow up action.

**I. CULTURES PROPOSED FOR RELEASE**

S. No.	Crop	Name of the culture/Hybrid	Centre
1.	Banana	H212	HC&RI, Coimbatore
2.	Snake gourd	Hybrid CSgH1	HC&RI, Coimbatore
3.	Bottle gourd	Salad Bottle Gourd LS 6-1	VRS, Palur
4.	Amaranthus	Sirukeerai - AP 12 (Multicut Type)	VRS, Palur
5.	French Beans	FBP – 5 (Pole Type)	HRS, Ooty

**II. CULTURES UNDER MLT / ART**

S. No.	Crop	Name of the culture / Hybrid	MLT / ART	Centre
1.	Banana	H 96 / 7	MLT – I	HC&RI, Coimbatore
2.	Banana	NPH 02-01	MLT - I	HC&RI, Coimbatore
3.	Banana	H 531	MLT – I	HC&RI, Coimbatore
4.	Tomato	Hybrid CTH 1	MLT – II	HC&RI, Coimbatore
5.	Onion	ACA 15	MLT – II	HC&RI, Coimbatore
6.	Ribbed gourd	Hybrid CRgH1	ART	HC&RI, Coimbatore
7.	Bottle gourd	Culture PL1212	ART	VRS, Palur
8.	Bottle gourd	Culture LS 44	ART	VRS, Palur
9.	Garlic	Accession No. 72	ART	HRS, Ooty
10.	Turmeric	BS 9	MLT – II	ARS, Bhavanisagar
	Leafy Coriander	CS 38	ART	HC&RI, Coimbatore
11.	Jasmine( <i>Jasminum nitidum</i> )	Acc.Jn.1	MLT – I	HC&RI, Coimbatore

**III.CULTURES PROPOSED FOR MLT**

S. No.	Crop	Name of the culture / Hybrid	Centre
1.	Banana	H 914	HC&RI, Coimbatore
2.	Banana	H 916	HC&RI, Coimbatore
3.	Papaya	C 1-33	HC&RI, Coimbatore
4.	Brinjal Hybrid	IC 374928 x ABSR – 2	HC&RI, Coimbatore
5.	Brinjal hybrid derivative	HD 10 – 6 – 5 – 3	AC & RI, Madurai
6.	Cassava	Accession Me 681	TCRS, Yethapur
7.	Turmeric	ACC 48	HC&RI, Coimbatore
8.	Nutmeg	MF 4	HRS, Pechiparai
9.	Cashew	Hybrid HC 10	RRS, Vridhachalam
10.	<i>Solanum nigrum</i>	Sn 19	HC&RI, Coimbatore

**Recommendations of 32<sup>nd</sup> Crop Scientists meet on Horticulture 2016**

S. No.	Remarks	Action taken
<b>I. Fruit Crops</b>		
1.	Root training approaches being taken up at KFRI, Peechi may be studied in relevance to fruit crops.	Prof. & Head, Dept. of Fruit Crops, HC&RI, Coimbatore.
2.	Determination of sex expression in papaya at seedling stage may be conducted through PG research.	
3.	West Indian cherry and guava may be mass multiplied and planted along fence for the benefit of students.	
4.	Research may be taken up to regulate the size of jamun fruits and its development.	Prof. & Head VRS, Palur
5.	Shelf life of jack flakes may be studied.	Prof. and Head, Dept. of Fruit crops, HC&RI, Periyakulam
6.	Value addition studies may be taken up for Wood apple and Manila tamarind.	
7.	Intercrops suitable for sapota may be identified for the benefit of the farmers.	
8.	Studies may be taken up for uniform maturity, ripening and value added products in sapota.	Prof. and Head, PHTC, AEC&RI, Coimbatore and Prof. and Head, Dept. of Fruit crops, HC&RI, Periyakulam
9.	Grapes germplasm may be evaluated for high fructose content.	Professor and Head, GRS, Theni
10.	Field trial may be conducted at Theni area to demonstrate Y trellis system in grapes.	

11.	Performance of Red Globe variety of grapes may be studied at Theni District.	Professor and Head, GRS, Theni
12.	Thousand fruited Jack may be planted at AC&RI, Kudimiyamalai and NPRC, Vamban.	Prof. and Head, VRS,Palur/ NPRC, Vamban, Dean,AC&RI, Kudimiyamalai
13.	Seedless wood apple available at Coimbatore may be propagated through soft wood grafting	Prof. and Head, RRS, Aruppukottai
14.	In Aonla, for mulching, dried organic plant debris may be used instead of black polythene mulch.	
15.	Strawberry research may be strengthened at HRS, Ooty.	Prof. and Head, HRS, Ooty
16.	Plum, pear and peach may be evaluated at HRS, Kodaikanal.	Prof. and Head, HRS, Kodaikanal
17.	In temperate fruit crops, modified central leader system of architecture may be maintained	
18.	The performance of pomegranate may be studied in saline soils and it may be maintained as shrubs.	Dean, HC&RI, Trichy
19.	Studies may be conducted in paclobutrozol applied mango fields to assess the residual effect of paclobutrozol.	Prof. and Head, RRS, Paiyur
20.	In mango, quality attributes for pulp and pickle may be standardized.	Prof. and Head, RRS, Paiyur and Prof. & Head, Dept. of Fruit Crops, HC&RI, Periyakulam
<b>II. Vegetable crops</b>		
1.	Quality of small onion variety CO (On) 5 may be maintained as it is the preferred variety in Tamil Nadu.	Prof. &Head, Dept. of Vegetable crops, HC&RI, Coimbatore
2.	Research may be initiated to standardize growing media suitable for container grown vegetables.	Prof. &Head, Dept. of Vegetable crops, HC&RI, Coimbatore/ Periyakulam, VRS,Palur
3.	Heterosis over parents may be worked out to study the superiority of hybrids.	
4.	Grafting studies may be initiated for gourds.	
5.	Varietal purity of PKM 1 moringa seeds may be maintained at HC&RI, Periyakulam.	Prof. &Head, Dept. of Vegetable crops, HC&RI, Periyakulam
6.	Seed production of PKM2 moringa may be taken up at AC &RI, Killikulam	Prof. &Head, Dept. of Horticulture, AC&RI, Killikulam
7.	Vegetable seed production at ARS, Vaigaidam may be strengthened.	Professor and Head, ARS, Vaigaidam
8.	Tapioca genotypes may be evaluated for salinity tolerance at TCRS, Yethapur	Professor and Head, TCRS, Yethapur
9.	Weed control efficiency may be worked out in Garlic IWM trial conducted at HRS, Ooty	Professor(Agronomy), HRS,Ooty
10.	Marketability of the garlic accession AS 72 may be studied at Vadugapatti market.	Prof. & Head, HRS, Ooty.
11.	Weed control efficiency may be worked out in Tomato IWM trial conducted at RRS, Paiyur	Asst. Prof. (Agronomy),RRS, Paiyur
12.	In moringa cropping system experiment, ratio of intercrop may be mentioned.	Asst. Prof. (Agron.),Dept. of Vegetable crops, HC&RI, Periyakulam

13.	Confirmation letter from Botanical Survey of India for Salad bottlegourd is to be produced at the time of variety release.	Professor and Head, VRS, Palur
14.	Success rate of bhendi graft and ratoon behavior is to be studied.	Professor and Head, Dept. of Horticulture, AC&RI, Madurai
15.	Seed viability of thornless mullukathiri may be studied.	Professor & Head, ARS, Virinjipuram
16.	Snake gourd long type available at Tirunelveli District is to be revived.	Professor and Head, Dept. of Horticulture, AC&RI, Killikulam
<b>III. Spices and Plantation crops</b>		
1.	Medicinal flavanoid component at different stages of coriander crop may be studied.	Prof. & Head, Dept. of Spices and Plantation Crops, HC&RI, Coimbatore.
2.	Rainfed variety of coriander cultivated at Ramnad region may be collected and compared with CS 38.	
3.	MLT for the promising Nutmeg culture Mf 4 may be conducted at HRS, Yercaud / Thadiyankudisai and CRS, Aliyarnagar	Prof. & Head, HRS, Pechiparai.
4.	For the dwarf tender coconut, selection may be done based on yellow and orange colour instead of green colour.	Prof. & Head, CRS, Veppankulam.
5.	Tall coconut seedlings may be produced in large scale to meet the farmers demand.	
6.	The boldness of the cashew hybrid nuts may be verified before proposing for variety release.	Professor and Head RRS, Vridhachalam
7.	Demand driven nutrient studies may be done in the UHDP trials in cashew.	
8.	Research may be intensified on sweet tamarind.	Prof. & Head, Dept. of Spices and Plantation Crops, HC&RI, Periyakulam
9.	Value addition of coconut viz., puffing may be standardized.	Prof. & Head, PHTC, AEC&RI, TNAU, Coimbatore.
<b>IV. Floriculture &amp; Landscaping</b>		
1.	Flowering seeds (Marigold, Zinnia) may be produced in large scale for selling through seed vending machine.	Prof. & Head, Dept. of Floriculture & Landscaping, HC&RI, Coimbatore.
2.	Dwarf type ixora may be collected and promising type in dwarf ixora may be identified.	
3.	In flowering and foliage shrubs canopy may be maintained through pruning.	
4.	Foliage plants with colour variations and variegated leaves and flowering ornamental plants may be included in Botanical Gardens, Centenary building and RI building premises.	
5.	Lily & lotus collections may be maintained in Horticultural Colleges.	Dean, HC&RI, CBE, / Periyakulam / HC&RI (W), Trichy.
6.	Different colours of nerium may be collected and maintained in the germplasm at FRS, Thovalai	Prof. & Head, FRS, Thovalai
7.	Grafting of rose may be carried out at HRS, Ooty to maintain different colours in a single plant.	Prof. & Head, HRS, Ooty

8.	Blue anthurium types may be collected and included in the germplasm collection.	Prof. & Head, HRS, Yercaud
<b>V. Medicinal &amp; Aromatic Plants</b>		
1.	Medicinal plants suitable for animal care may be evaluated in consultation with Th. Puniyamurthy	Dean, HC&RI, CBE, / Periyakulam
2.	Research on <i>Hemidesmus indicus</i> may be initiated	Prof & Head, Dept. of Medicinal & Aromatic Crops
3.	Technical advises for establishing a Herbal Garden for the Tamil University, Thanjavur may be provided	Prof & Head, Dept. of Medicinal & Aromatic Crops

### General Remarks

- ❖ Need based sub projects may be formulated to satisfy the farmers demand.
- ❖ A protected cultivation unit is to be established in all horticultural stations.
- ❖ Fertigation units with sensor device are to be installed in all horticultural colleges.
- ❖ Double ring system of irrigation may be adopted for fruit orchards.
- ❖ Light interception studies may be carried out in high density planting experiments.  
Demand driven nutrient supply may be standardized for High density and Ultra high density planting systems.
- ❖ A team of scientists from HC &RI (W) may be visited to Vedharanyam to study the potentiality of horticultural crops.
- ❖ Vertical garden may be established in all three colleges for the production of leafy vegetables.
- ❖ Humic acid may be recommended for soil application.

## DRAFT PROCEEDINGS OF CROP PROTECTION IN HORTICULTURAL CROPS

- The floral morphology (orientation, arrangement, etc.) of mango in relation to nut weevil damage may be studied. Mango germplasm may be screened for nut weevil damage under controlled atmospheric conditions also **(Action: RRS, Paiyur)**.
- Commercial formulation of *Metarhizium anisopliae* is mixed with kaolinite and the media provided will not promote sporulation. Sporulation of *M. anisopliae* may be studied. **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- Azadirachtin content may be worked out in various neem formulations and the recommendations should be based on the active ingredient **(Action: All the centres working on neem)**.
- Efficiency of yellow sticky trap and light traps may be studied under protected cultivation **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- Use of *Menochilus sexmaculatus* in pest management need to be strengthened. **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- Biocontrol for the management of leaf miner in tomato and chilli may be strengthened **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- Study about nanomatrix used in the lures of rhinoceros beetle management. **(Action: CRS, Aliyar Nagar)**.
- Use of biocontrol agents may be intensified under protected cultivation. **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- The pest status in different planting systems such as normal planting/ HDP/ ultra HDP may be studied. **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- Severity of tomato pin worm in different agro-climatic zones and correlation between weather parameters and pest incidence may be studied. Fix ETL for pin worm if IPM intervention is made **(Action: Dept. of Agrl. Entomology, TNAU, Coimbatore)**.
- The local available germplasm materials (banana, papaya, tomato, bhendi, chillies, turmeric) may also be screened for disease resistance along with the AICRP entries.  
**(Action: HC&RI, Coimbatore)**
- The resistant entries evolved under field conditions may be screened under artificial conditions for confirmation.  
**(Action: HC&RI, Coimbatore)**
- Characterization of citrus greening disease studies may be carried out at HC & RI, Periyakulam through PG research programme.  
**(Action: HC&RI, Periyakulam)**
- Monitoring of banana bunchy top virus may be carried out in hill banana plantations.  
**(Action: HRS, Thadiyankudisai)**
- Use of polybag is not environmentally benign. Hence, alternate methods for mushroom cultivation may be evolved.  
**(Action: Dept. of Plant Pathology, Coimbatore)**

- Development of management practices for nematodes problems in protected cultivation  
(Action: Dept. of Nematology, Coimbatore)
- Development of management practices for nematodes problems in crops grown under drip irrigation.  
(Action: Dept. of Nematology, Coimbatore)
- Status of nematode infestation in propagating methods viz. ground layers and grafts in guava.  
(Action: HC&RI, Periyakulam)
- Confirmation studies on green synthesized silver nano particles for the management of root knot nematode under micro plot and impact of silver nano particles in affecting the soil health.  
(Action: HRS, Ooty)
- Confirmation studies on management of root knot nematode in carrot and potato cyst nematodes in potato using liquid bioformulation to be conducted using the best treatments along with standard check.  
(Action: HRS, Kodaikanal)

#### OFT 1 (Centers: Coimbatore, Paiyur and Periyakulam)

On farm trial on management of root knot nematode, *Meloidogyne incognita* infesting tomato under polyhouse conditions with the following treatments.

T<sub>1</sub>- Application of *Purpureocillium lilacinum* @10 g/kg seed and soil application @ 50g/m<sup>2</sup>

T<sub>2</sub>- *Trichoderma harzianum* @10 g/kg seed and soil application @ 50g/m<sup>2</sup>

T<sub>3</sub>- Carbofuran @ 1kg a.i./ha

T<sub>4</sub>- Untreated control

Replications : 6

Plot size : 1 x 1 m

Variety : Local variety

Design : RBD

#### Observations:

- INP per 200 cc of soil
- Final population per 200 cc of soil and 5g root
- Root knot index
- Yield kg/m<sup>2</sup>

Sd-xxxxx  
Dean (Hort.)i/c