

TAMILNADU AGRICULTURAL UNIVERSITY

45th RESEARCH COUNCIL MEETING

Agenda No.1

Confirmation of the proceedings of the 44th Research Council meeting

The proceedings of the **44th Research Council** meeting held on **February 17, 2011** were communicated to all the members. If there is no exception to the minutes from the members, it is requested that the Research Council may please confirm the proceedings of the 44th meeting.

Agenda No.2

ACTION TAKEN ON THE RECOMMENDATIONS OF 44th RESEARCH COUNCIL MEETING (FEBRUARY 17, 2011)

a. Suggestions of Th.P.Palanivel, Expert member

1. Fertilizer recommendations for various crops based on new crop response researches both for macro and micro nutrients. (Action: SO, NRM)

Soil Test Crop response based Integrated Fertilizer Nutrition System has been developed for desired yield targets of twelve agricultural crops and eight horticultural crops on various soil types. This has been approved for release as one of the management technologies of 2012 by TNAU.

2. In the context of adoption and usage of soluble fertilizers, fertigation and precision farming, research on the dosage of chelated fertilizers and micro nutrients for crops be initiated. (Action: SO, NRM)

Water soluble fertilizers fortified with micronutrients are suitable for fertigation. Poly feed, a water soluble fertilizer in its different grades contains various micronutrients viz., Fe (1000 ppm), Zn (75 ppm), Cu (55 ppm), Mn (500 ppm) and Mo (35 ppm). Another WSF viz., Multi micro also contains chelated forms of micronutrients suitable for field and vegetable crops.

3. Use of biofertilizers as alternate for potash and other micro nutrients (Action: SO, NRM)

- Twenty nine (29) soil samples were collected from twenty five regions in Tamil Nadu and from which 50 cultures with the dissolution properties were isolated. Among them KRB-1 (enriched felsper) and KRB – 9 (Pechiparri) performed well. Biochemical and physiological tests, solubilization potentiality of the isolates through hallow zone formation and organic acid production, available and exchangeable K release were studied. The mineral dissolution capacity using organic potash sources such as ores, bio dissolution of silica from minerals, its survivability in acid, neutral and alkali soil were carried out in *in vitro* and *in vivo* conditions.
- The culture thus obtained, is being tested in rice under pot culture conditions with different K levels (0%, 25%, 50%, 75% and 100%). It will be further tested for the compatibility with other biofertilizers and its biodissolution capacity in soil along with the organic potash. The findings of the studies will be test verified under field condition.

4. Incorporation of organics like sea weed in soil may be explored. (Action: SO, NRM)

A project on “Fertilizer potential of Seaweed saps on crops” has been prepared worth Rs 54.90 lakhs and sent to Central Marine and Salt Research Institute, Bhavanagar, Gujarat for external funding. The project has been accepted for funding and trials will be initiated during April, 2012.

5. Bio-control agents with longer shelf life and easier application may be evolved. (Action: Director, CPPS)

Liquid formulation of *Beauveria and Pseudomonas* is being tested against various pest and diseases of crops to enhance the shelf life.

6. Like fodder crops (Cumbu Napier grass), shorter life span and more number of ratoons in sugarcane may be tried. (Action: Director, TRRI)

- Effect of planting systems and varieties on sugarcane productivity under multiratooning was studied.
- The variety CoC 23 found to be more suitable for multiratooning through registering higher values of cane yield, CCS percent and sugar yield.
- The paired row system of planting recorded the maximum cane yield, commercial cane sugar and sugar yield compared to conventional method of planting.

T. No.	Treatments	Cane Yield (t/ha)		CCS (%)		Sugar Yield (t/ha)	
		Plant	Four ratoon mean	Plant	Four ratoon mean	Plant	Four ratoon mean
Planting system							
P ₁	Normal	125.7	96.7	12.82	12.40	16.11	12.04
P ₂	Paired row	131.7	106.0	13.00	12.56	17.12	13.39
CD (P = 0.05)		NS	6.32	NS	NS	NS	0.76
Varieties							
V ₁	CoC (SC) 23	135.6	111.6	13.43	13.12	18.21	14.57
V ₂	CoSi (SC) 6	126.7	97.3	12.33	12.09	15.62	11.77
V ₃	CoC 22	128.1	104.0	12.60	12.34	16.13	12.83
V ₄	Co 86032	118.3	90.7	13.28	12.82	15.71	11.66
CD (P = 0.05)		4.42	5.04	0.42	0.57	0.62	0.54

b. **Th.Venkataramani Govindan**, has appreciated the research programmes carried out and novel initiatives for the last one year in TNAU and suggested the following points

1. **While preparing Vision 2030 special attention may be given. (Action: DR)**
2. **Vision 2030 of ICAR may be referred while preparing Vision 2030 for TNAU. (Action: DR) (Dr.N.Kalaimani’s suggestion)**

Vision 2030 document was carefully prepared giving due consideration to the points listed out in the Vision 2025 document prepared by the University during 2000, Vision envisaged in ICAR’s document, vision of State Government in doubling the farmers income and food production and by incorporating the newer

areas of collaboration for education, research and extension. The document was released by the Hon'ble Minister for Agriculture on 9.1.2012 in the event of International symposium on "100 years of Rice Science and Looking Beyond".

3. The Agri Portal should be more interactive and two way communicative and have more contents to the farmers. (Action: DEE)

Agri Portal is already interactive; All the queries, suggestions sent to info@tnau.ac.in or portal@tnau.ac.in are regularly attended by the e-extension centre. Content wise tnau agri-tech portal is the largest of all the portals on agriculture in the world and content is being added everyday. The Video Conference Facility (vcon.tnau.ac.in) is interactive from 60 centres of the university for any farmer or extension worker.

c. Suggestions by Dr.N.Kalaimani

1. High yielding varieties suited for saline-alkaline areas, rainfed and rice fallow conditions in pulses may be evolved. (Action: Director, CPBG / TRRI)

S. No.	Crop	Saline alkaline areas	Rainfed	Rice fallow
1.	Greengram	VBN (Gg) 2	VBN (Gg) 2, VBN (Gg) 3, Co 6, Co (Gg) 7, VRM (Gg)1	ADT 3
2.	Blackgram	-	TNAU Blackgram Co6, VBN (Bg) 4, VBN (Bg)5, VBN (Bg) 6	ADT 3
3.	Redgram	-	Co 6, Co (Rg) 7, VBN 2	-
3.	Cowpea	-	Co 6, Co(Cp) 7	-

TRRI, Aduthurai

In the station trials of TRRI, Aduthurai during 2011, the culture KKB 050011 recorded a mean grain yield of 601 kg/ha, the yield increase being 20.2% over ADT 3 (500 kg/ha). This culture will be evaluated in OFT/ART in subsequent years for its release as a variety for rice fallow condition based on its yield stability. Further, a total of 23 cultures are under initial stage of evaluation.

NPRC, Vamban

- The recently released blackgram variety TNAU Blackgram VBN 6 with a mean yield of 871 kg/ha and resistant to yellow mosaic disease is highly suitable for rainfed cultivation.
- Another promising culture VBN 04-008 with a mean yield of 981 kg/ha which was released for south zone by Central Variety Release Committee during 2010 is also suitable for rainfed cultivation. This variety is recognized as TNAU Blackgram VBN 7 by 2012.
- Four blackgram entries viz., VBG 04-014, KKB 05-011, ADT 3 and VBN 4 were tested in On-farm trials during 2010-11 in Thanjavur, Nagapattinam, Tiruvarur, Cuddalore, Tuticorin and Tirunelveli districts to identify a suitable blackgram variety for rice fallow conditions and the results are awaited.

2. Control of yellow mosaic and downy mildew in pulses (Action: Director, CPBG / TRRI)

Greengram : Co 6, VBN 2

Blackgram : TNAU blackgram Co6, VBN (Bg) 4, VBN (Bg) 5, VBN (Bg) 6

TRRI, Aduthurai

A new research sub-project entitled “Development of bio-formulation for the management of diseases in rice fallow black gram with polymer seed coating” has been initiated to manage the black gram diseases including yellow mosaic and downy mildew with bio-control agents. The experiment will be laid out during Jan-Feb 2012 and the recommendations will be made available upon the trial results.

NPRC, Vamban

For the management of yellow mosaic, the recently released yellow mosaic resistant variety TNAU blackgram VBN6 can be cultivated besides following the management practices.

- Seed treatment with imidacloprid @ 5 ml/kg
- Installation of yellow sticky traps @ 12 /ha
- Spraying of systemic insecticides viz., monocrotophos (750 ml/ha) or methyl demeton (750 ml/ha) or dimethoate (750 ml/ha) on 30 and 45 DAS

Downy mildew

There is no occurrence of downy mildew in pulses. Instead, occurrence of powdery mildew is seen in pulses particularly during rabi season. To control powdery mildew, spraying of carbendazim (500 g/ha) or wettable sulphur (1 kg/ha) is recommended.

3. Shade tolerant pulses for intercropping in plantations (Action: Director, CPBG)

Co 6 cowpea is found to be shade tolerant and is suitable for cultivation as intercropping in plantations.

4. Suitable high yielding sesame for rice fallow condition. (Action: Director, CPBG / TRRI)

RRS, Vridhachalam

- The Sesame variety VRI (Sv) 1 is developed through pureline selection from Thirukkattupalli local. Its duration is 70-75 days which is earlier by 15 days than the ruling sesame varieties.
- In the rice fallows of Cauvery Delta Zone, VRI (Sv) 1 yielded 959 kg/ha as compared to 805 kg/ha of TMV 4, a yield increase of 19%. Due to its short duration, the per day productivity of VRI (Sv) 1 is far superior to the ruling varieties.
- It is brown seeded variety and it has an oil content 51% which is comparable to TMV 3, TMV 4 and CO 1. It possess a compact plant type with basal branching and close set capsules on the main stem and branches. As VRI (Sv) 1 is photo

insensitive, it can be grown in all seasons. Due to its earliness, it can be grown even if rains are delayed. It can also be fitted in multi-relay cropping sequences and rice fallow cropping systems. It is suitable for irrigated and rainfed cultivation in all the districts of Tamil Nadu.

Another promising sesame culture VS 07-023 white seeded is also suited for Rice fallow condition.

Performance of VS 07-023 under ART - Seed Yield kg/ha [Rabi 2010-11]

District	Block	VS 07 -023	VRI (Sv)2
Tanjavur	Thanjavur	1250	625
Salem	Sankari	1520	1071
Coimbatore	Perianaichenpalayam	600	400
Theni	Periyakulam	800	740
Mean		1042	709

5. Farmer friendly low cost rice transplanter. (Action: Dean, Engg.)

Presently powered mechanical transplanters are exclusively imported and are not manufactured locally. The eight row Yanchi make Chinese transplanter is marketed by M/s. VST Tillers (Pvt) Limited, Bangalore at Rs. 1.7 lakhs / unit and is covered under subsidy scheme. The four row walk behind transplanter costing around Rs. 2.5 lakhs is also available under 50% subsidy. These machines can cover around 3 acres / day. The most popular mode of use of transplanter in Tamil Nadu is through custom hiring.

d. Suggestions made by the Vice-Chancellor

1. Comparing University varieties and hybrids with private varieties and hybrids while evolving new varieties and hybrids in future trials. (Action: Director, CPBG)

- As per the suggestions of the Vice-Chancellor, the entries that are surpassing the private varieties / hybrids in the respective category to a tune of 10 per cent and above are being considered for the release. To prove the potential of the entries developed at TNAU, demonstrations are taken up with the potential entry and private entries side by side in the farmers holding.
- In Maize, the pre-release hybrid CMH-08-282 proposed to be released as TNAU maize hybrid Co 6 (7400 kg/ha) was compared with leading private maize hybrids NK 6240 (6803 kg/ha) and 900 (M) G (6656 kg/ha) and recorded an increased yield of 28% over CoH (M) 5 (5739 kg/ha) and 8-10% over NK 6240 and 900 (M) G.
- In Pearl millet, one new high yielding hybrid, TNAU cumbu hybrid Co 9 was identified and released during 2011 for cultivation in Tamil Nadu. This hybrid was compared with private hybrid in all the advanced trials. It recorded a mean grain yield of 3728 kg / ha under irrigated conditions, which is about 30 and 24 percent increase over the checks X7 and private hybrid NH 07 respectively. The mean grain yield under rainfed condition is 2707 kg /ha which is 18 and 19 per cent increase over X7 and a private hybrid NH07 respectively.

- Similarly, the entry CAg H1 of Ashgourd yielded 25 per cent more than the commercial hybrid MAH 2 in MLT / ART / OFTs. Thus, it has been recognized for release as TNAU Ashgourd hybrid CO 1. Bottlegourd hybrid entry CBog H1 out yielded Warad (Mahyco Hybrid) to the tune of 31.10 per cent and it has been considered for release as TNAU Bottlegourd Hybrid CO 1. All these releases are during 2012.

2. While conducting ART, all the JDAs may be involved and conducted in farmers' field in large areas. (Action: Director, CPBG)

All the JDAs of respective districts are involved in the conduct of ARTs and results are obtained for the pre-release varieties / hybrids. Further, to demonstrate the potentiality of the pre-release varieties / hybrids, large scale demonstrations are being organized with the help of officials from Department of Agriculture.

3. Before releasing a new variety, management practices and plant protection technologies may be standardized. (Action: Director, CPBG)

Action is being taken for standardizing management practices and plant protection technologies for the newly developed entries before its release and as a whole some package, new entries are proposed for release.

4. Cost benefit ratio of subsurface drip irrigation (Action: Dean, AC&RI, Madurai / Director, WTC)

Comparison of Cost of cultivation for sugarcane under surface irrigation, subsurface drip fertigation system

Particulars	Conventional method (Rs.)	Subsurface drip fertigation (SSDF) (Rs.)
Drip system cost (pay back period of 7 years)	-	12,000
Preparatory cultivation	8,800	11,800
Setts and planting	23,640	16,160
Fertilizers cost	5,250	5,250
Irrigation/Drip fertigation	4,200	3,000
Weeding	4,500	2,250
Earthing up	7,500	4,250
Plant protection	2,470	2,470
Herbigation	-	1,257
Chlorine treatment	-	600
Acid treatment	-	800
Micronutrients	900	900
Harvesting	68,750 (manual @ Rs.550/t)	70,000 (mechanical @ Rs.400/t)
Yield /ha	125 t	175 t
Economics		
Gross income @Rs.1950/t	2,43,750/-	3,41,250/-
Cost of cultn.	1,26,010/-	1,30,737/-
Net income	1,17,740/-	2,10,513/-
B:C ratio	1.93	2.61

- Cost of intercultural operations with machineries
- Opening of trenches and lay out of laterals with tractor drawn implements = Rs.3000/ha
 - First weeding with rotavator = Rs.2250/ha
 - Second weeding with rotavator and earthing up = Rs.4250/ha
 - Stubble shaving and off bearing for ratoon crop = Rs.1500/ha
 - Mechanical harvesting = Rs.400/t

Studies conducted on the comparison of cost of cultivation for sugarcane under surface irrigation and sub-surface drip system at AC & RI, Madurai indicated that the gross income, calculated @ Rs. 1950 / t, was found to be Rs. 2,43,750/- and 3,41,250/- for surface irrigation and sub-surface drip system respectively. Similarly, the net income for surface irrigation and sub-surface drip system was Rs. 1,17,740/- and 2,10,513/- respectively. Therefore, the Benefit : Cost ratio were worked out to be 1.93 for surface irrigation and 2.61 for sub-surface drip system.

5. Study on drip fertigation for rice fallow pulses may be taken up. (Action: Director, TRRI / CM)

This study will be initiated in pure crop of black gram after incorporating the paddy stubbles in the Cauvery New Delta by SWMRI, Thanjavur and NPRC, Vamban.

6. **Mobile sprinkler technology may be popularised among dry land farmers. (Action: Prof. & Head, CSRC, Ramnad)**
7. **Scheme for popularization of mobile sprinkler may be proposed to Commissioner of Agriculture. (Action: Director, TRRI)**

CSRC, Ramnad

Action taken for distribution of mobile sprinkler to the eligible farmers under NADP was crumbled for judicial reasons intervened by the approved supplier. Awaiting for the judicial clearance to procure by calling fresh tenders and for supplying to the eligible farmers.

TRRI, Aduthurai

Schemes have already been submitted through Director of Research entitled 'Popularization of rice-fallow pulses in the Cauvery Delta Zone' by involving Mobile sprinkler as one of the components. The schemes' were proposed to be executed for three years from 09-10 to 11-12 separately by Director, TRRI, Aduthurai and JDAs, Thanjavur, Tiruvarur and Nagapattinam with budget outlay of Rs 49.68 l and Rs 28.10 l respectively.

8. Stemborer resistance in rice through biotechnological tools. (Action: Director, CPMB)

Elite rice variety ASD 16 is being transformed with novel synthetic CryAX gene for imparting resistance against lepidopteran pests. Transgenic plants were generated and these plants are being screened for the presence of transgene.

9. Tissue Culture banana resistant to bunchy top virus may be developed. (Action: Dean, Hort.)

Action has been taken to mass multiply the virus free hill banana plants through tissue culture at the tissue culture laboratory of HC&RI, TNAU, Coimbatore. So far, 343 plants have been supplied to HRS, Thadiyankudisai and raised in the insect proof net house. Suckers derived from these virus free hill banana plants are supplied to the farmers.

10. Price forecast for more crops may be taken up. (Action: Director, CARDS)

At present, Domestic and Export Market Intelligence Cell (DEMIC) forecasts for 14 important agricultural commodities viz., Maize, Cumbu, Cotton, Groundnut, Sunflower, Gingelly, Turmeric, Chillies, Coriander, Small onion, Potato, Coconut, Blackgram and Bengalgram. Daily and historical prices from Regulated Markets, Uzhavar Santhai and other institutions are collected and analysed with statistical tools and compared with traders survey in important markets to develop price forecasts for various crops before sowing and during harvest and for validating the forecast and disseminating them to farmers. This year, few more crops like Greengram, Garlic, Beetroot, Carrot and Banana are added to the price forecast list based on the demand from farmers.

11. Small machines suited for small farm holdings may be developed and popularized through ABD. (Action: Dean, Engg.)

Suitable hand tools and machines for small farm holdings have been developed wherever appropriate. Some hand tools like cono weeder, dry land weeder, director paddy seeder and tree climber are being manufactured and supplied to needy farmers through AMRC.

e. Other recommendations

1. Possibility of soil scanning by chromatography may be test verified. (Action: SO, NRM)

An interactive meeting was arranged by M/s. Murugappa Chettiar Trust at Chennai for discussion and training on the feasibility of quick soil test through chromatography technique. Dr. S. Poongothai, Professor (SS&AC) has attended the training programme. M/s. Murugappa Chettiar Trust has been requested for a joint research programme for test verification of the technology.

2. Availability of micro nutrients for foliar spray (Action: SO, NRM)

Foliar spraying of micronutrients is found to correct micronutrient deficiencies as and when visible symptoms are noticed in crops on need basis. Micronutrient sprays are suggested for specific nutrient deficiencies viz., Zn (0.50 % ZnSO₄), Fe (1.0 % FeSO₄ + 0.1 % Citric acid), Mn (0.20 % MnSO₄), Cu (0.20 % CuSO₄), B (0.20 % boric acid) and Mo (0.05% Sodium molybdate). The foliar spray to be scheduled at 7 to 10 days interval for short duration crops and at 15 days interval for long duration crops in the morning or evening hours till the disappearance of

symptoms. The details of the micronutrients foliar spray recommendations have been incorporated in the Crop Production Guide (Agriculture / Horticulture)

3. Sending details on pest / disease forecast to JDA's (Action: Director, CPPS)

Forecast on pest and diseases situation is being done at monthly intervals in leading Tamil and English dailies and the same is communicated to Commissionerate of Agriculture, Chennai with a copy marked to all JDA's of Tamil Nadu.

4. Precision farming technology for redgram (Action: Director, CM)

Precision farming technology for long duration redgram has been initiated. For optimization of spacing, five lateral spacing viz 90 x 60, 120 x 60, 150 x 60, 180 x 60 and 210 x 60 cm are being tried. Both single and paired row planting are being tried in these spacings under direct sown as well as transplanted Co 6 redgram. For irrigation and fertigation scheduling in redgram, LRG 41 was raised under transplanted condition and various irrigation and fertigation levels are being tried. The crop is at pod development stage.

Plant Protection

1. Extract of tree leaves as insecticide may be tried in vegetables and fruits (Action: Director, CPPS / Dean, HC&RI)

Leaves of neem, agave, chilli, Ipomoea were tried against sucking pests like thrips, aphids, and mites. Though proved to be promising, availability in large quantities is questionable. Hence this is not a viable method of managing the pests.

Horticulture

1. Trial on extracts of chilli, garlic and onion as plant protective substances may be taken up. (Action: Dean, HC&RI / Director, CPPS)

A field trial was conducted during Rabi 2010 -11 at the Department of Vegetable Crops, Horticultural College and Research Institute, TNAU, Coimbatore for the management of the onion thrips. Seven treatments viz., i) Neem crude oil (4 %), ii) Pongamia crude oil (4%), iii) Dasparni* (50 ml/l) – (*fermented product prepared from leaves of neem 250 g, Lantana 100 g, papaya 100 g, Datura 100g, Castor 100 g, Custard apple 100 g, Pongamia 100 g, Calotropis, Nerium 100 g and Vitex negundo 100 g, green chillies 100 g, garlic cloves 12.5 g along with cow dung 150 g and cow urine 250 ml in 10 litres of water and used after 30 days) iv) Beauveria bassiana (1013 spores/ha) v) Spinosad (56g a. i./ha), vi) Profenofos (1 ml/l) and vii) untreated control with three replications using the onion cv. CO 4 were tried. The results revealed that among the treatments, profenofos @ 1ml/l was effective with the least mean thrips population of 1.28 with the highest yield of 17.10 t/ha, followed by spinosad 56 g a.i./ha with 7.13 and 14.86t/ha and neem crude oil 4% with 8.47 and 14.17t/ha respectively as against 39.16 and 10.4t/ha in the control.

Forestry

1. **The proposal for taking up survey and analyzing the cause of non flowering in tamarind trees in forest area may be placed before the committee for financial sanction from the Department of Forestry. (Action: Dean, HC&RI, Periyakulam)**
 - The proposal for taking up survey and analyzing the cause of non flowering in tamarind trees in forest area was sent to State Department of Forestry for financial assistance and a scheme was obtained from the Department of Forestry with a financial outlay of Rs. 11.32 lakhs. As 1st installment, Rs. 5.0 lakhs has been received.
 - To begin with, survey was undertaken at Mangala devi (Kuppuvamadai) and Surungan Aarru (Gudalur Taluk) and Thamarai Sunai (Cumbum) areas of Theni District. Soil and leaf samples are collected and under analysis.
2. **Collaborative scheme for establishing clonal seed orchards for tree seeds between TNAU & Department of Forestry may be explored. (Action: Dean, FC&RI, Mettupalayam)**
 - **Collaborative Programme with Forests Department:** The Institute has submitted as many as 30 project proposals to Forest Department in order to establish Bio-resources of multiple utility crop and to convert them into seed orchards.
3. **Price forecasting for forest products. (Action: Dean, FC&RI / Director, CARDS)**
 - **Price forecast for forest products:** Action is taken to collect time series data from pulp and match industries for forecasting. Currently the prices of pulpwood, matchwood and biomass species are obtained from the respective wood based industries and periodically disseminated through the website: www.fcrinaip.org.

Ongoing Research Programmes based on the recommendations of the previous Research Council Meetings

(1) 42nd Research Council Meeting Recommendations

Crop Management

1. **Experiment on night soil composting may be continued and pH & E.C may be tested. (Action: Director, CM)**

Human waste compost / Ecosan compost was obtained from the ECOSAN toilets constructed by SCOPE (NGO) at Musiri, Trichy (Dt). The colour of the compost is brown to black. The pH of the compost was 8.15 and the EC was 2.00 dSm⁻¹. The C/N ratio of the compost was 16.2: 1 and it is found to be optimum for land application. The compost had appreciable amounts of N, P and K. To study the effect of Ecosan compost on changes in soil properties and crop production, an

incubation experiment, pot culture (Marigold) and field experiment (Paddy) were conducted during 2009-2010 and 2010-2011.

Addition of Ecosan compost/ Night soil compost, MSW compost and Vermicompost significantly increased the soil pH. The pH of the soil ranges from 8.42 to 8.52. Among different treatments, T₅ (75 % RDF + NS compost @ 7.5 tonnes / ha) registered higher mean soil pH. The highest EC was noticed in the treatments that received 10 t /ha of organic manures such as Ecosan compost (from 1.3 initial to 1.5 dSm⁻¹ after application), MSW compost and Vermicompost+ 75 per cent NPK. The performance of Ecosan compost @ 10 t ha⁻¹ and 7.5 t ha⁻¹ was found to be superior to the rest of the treatments in terms of enhancing the soil available NPK status in the soil types such as sandy, clay loam and sandy clay loam etc. The results of the pot culture and field experiment were similar and in both the experiments Ecosan compost @ 10 t ha⁻¹ and 7.5 t ha⁻¹ recorded the highest yield and quality parameters. In these treatments, the soil pH, EC, physical environment and CEC of the soil were improved due to Ecosan compost application.

Ecosan compost @ 7.5 t / ha (T₅ - 75 % RDF + NS compost @ 7.5 t / ha) recorded the highest yield of 22.1 tonnes/ha and quality parameters of Marigold (Var - local). Ecosan compost @ 10 t/ha (T₈ - 50 % RDF + NS compost @ 10 t/ha) recorded the highest grain yield (4660 kg/ha) of Paddy (Var – Andhra ponni). Followed by for test verification, Maize Hybrid (NK- 6240) and paddy (var-Andhra ponni- 2nd crop) were planted during 2010-2011 using Ecosan compost. In both the experiments, Ecosan compost @ 7.5 t / ha (T₅ – 50% RDF + NS compost @ 7.5 t / ha) recorded the highest yield and quality parameters of test crops. In Maize, the highest grain yield of 6735 kg per ha was recorded.

2. **Studies on influence of climate changes on the crop growth and pest and diseases is to be continued and weather based pest and disease forewarning models developed. (Action: Director, CM & CPPS)**

It is being document and regularly and is also available in TNAU web.

Water Management

1. **The research on fertigation schedule to the main and inter crop may be continued and the results reported (Action: Director, WTC)**

Field trial on fertigation in main and intercrop is in progress at Agricultural Research Station, Bhavanisagar. Results will be discussed when the trials are completed.

2. **Research on sub-surface drip fertigation and mechanized sugarcane cultivation at Madurai and Cuddalore centres may be continued (Action: Director, WTC)**

Under TN-IAMARM Project, the performance of sub-surface drip (SSD) in sugarcane was evaluated in 100 ha involving 70 farmers holding in Sivagangai district of Tamil Nadu. The variety chosen was COC 86032. The results indicated that the adoption of SSD resulted in an increase of productivities of

cane as well as water. The SSD registered a maximum cane yield of 152 t ha⁻¹ with a minimum of 79 ha⁻¹ as against the maximum of 83 ha⁻¹ and minimum of 37 ha⁻¹ with the conventional surface irrigation practice. The water requirement was 1750 mm in SSD practice while it was 2600 mm under surface irrigation method.

Research on optimizing row spacing for mechanized cane cultivation, optimizing irrigation water requirement and evaluating water soluble fertilizers is now initiated for evaluating sub-surface dip fertigation and mechanized sugarcane cultivation at Madurai and Cuddalore centres.

3. Research on Micro-sprinkler system for rice-fallow pulses, curry leaf and forages may be continued (Action: Director, WTC)

Studies on the demonstration of using micro sprinkler system are now continued for crops of curry leaf and forages in the Irrigation Cafeteria of WTC.

Crop Protection

1. Pestigation studies to be continued and appropriate crop and material(s) specific prescription is to be made. (Action: Director, CPPS / WTC / CM)

Liquid formulation of *Pseudomonas* is being applied through drip irrigation in crops like banana, sugarcane and tomato and the recommendation will be made once the experiments are completed.

Tomato:

Seedling dip with liquid *Pseudomonas* (500ml / ha of seedling) + microbrigation at 2.5l / ha @ 30 and 60 DAT recorded the lowest *Fusarium* wilt incidence.

Sugarcane:

Liquid formulation of *Pseudomonas fluorescens* (pf1) was applied at rate of 500 ml / ha for sett treatment and 3 lit / ha for drip irrigation significantly reduced the red rot incidence in sugarcane and simultaneously decreased population of early short borer and leafhopper in treated fields.

Banana:

Application of liquid formulation of Pf1 @ 500 ml / ha as sucker treatment and 3 lit / ha for drip irrigation has significantly increased the *Pseudomonas* cell population and effectively reduced *Fusarium* wilt incidence in Banana field.

Horticulture

1. Work on alternate variety for PKM1 tamarind (i.e. red tamarind and sweet tamarind) may be continued. (Action: Dean, HC&RI, Periyakulam)

Three elite and high yielding red tamarind genotypes, two sweet tamarind seedling progeny accessions and ten plus trees of sour tamarind identified at cumbum vally and Sedapatti were grafted and planted for further evaluation. The best performing genotype will be identified in future as an alternate variety for PKM-1 tamarind.

- 2. Work on supply of quality mother plants in banana and cassava to the private entrepreneurs may be continued for tissue culture plant multiplication. (Action: Dean, HC&RI, CBE)**

Action has been taken to mass multiply the quality tissue culture plants of banana & cassava for supply to entrepreneurs for further multiplication as per requirement of farmers.

Agricultural Marketing

- 1. The price forecast for banana may be disseminated to farmers through NRCB also. (Action: Director, CARDS)**

Banana price forecast is in pipeline. Historical price data for analysis is being collected from the Gandhi Market, Trichy and from Kattuputhur Regulated Market. The banana price forecast is made available from January 2012 and it will be disseminated in coordination with National Research Centre for Banana (NRCB).

(2) 43rd Research Council Meeting Recommendations

Crop Improvement

- 1. Pure line selection can be made from the long duration redgram variety grown in Theni and Dindigul districts and work be continued. (Action: Director, CPBG)**

Seed samples were collected from local types raised in the villages Kuppayampatti, Okkaraipatti, Kongayampatti, Andipatti, Kandamanur area of Theni district and raised on 17.08.2010 in progeny rows. Promising individual plants were selfed. The selfed seeds were raised again on 20.08.2011 for further evaluation of selected types and purification is in progress.

Crop Management

- 1. Combined Research on essential micronutrient mixtures for different crops may be continued. (Action: SO, NRM)**
 - The crop need based Micronutrient mixtures for groundnut, gingelly, castor, sunflower, sugarcane and cotton crops have been formulated and test verified through on farm trials and has been released as a management technology by TNAU. The details on the above micronutrient mixtures have been sent to Commissioner for notification in FCO.
 - The sample collection from mulberry has been initiated for analysis and further preparation of MN mixture for mulberry based on nutrient concentration and uptake.

Water Management

1. Research on precision farming in transplanted redgram may be continued. (Action: Director, WTC / CM / CPBG)

Research on precision farming in transplanted redgram has been initiated. Transplanting of LRG 41 redgram was done on 30.8.2011 at Fd.No NA-2G of Millet Breeding Station, TNAU. Different irrigation levels, fertilizer levels and its sources are being tried along with checks. The crop is at flowering and pod development stage.

During 2010-2011, a field experiment was conducted at National Pulses Research Centre, Vamban on the technology development for transplanted redgram cultivation under drip fertigation system in the precision farming approach involving three varieties (Vamban 2, LRG 41 and G 3) under three irrigation system (Conventional and Surface and Sub-surface drip fertigation system). The results indicated that the redgram variety Vamban 2 registered higher grain yield of 1096 kg ha⁻¹ under sub-surface drip irrigation, which was 31.4 % increase over the conventional irrigation practice (834 kg ha⁻¹). Similarly, the varieties, LRG 41 and G 3 recorded an increased grain yield of 28.3 and 28.0 percent respectively under the sub-surface drip system than the conventional method of irrigation. It is, therefore, concluded that Vamban 2 redgram variety can be successfully cultivated under sub-surface dip fertigation system for enhancing the grain yield.

Forestry

1. From the four plus trees selected from Thenkani Kottai in *Pongamia pinnata*, suitable trees may be identified and used for cultivation (Action: Dean, FC&RI, Mettupalayam)

- Four trees have been selected from Denkanikottah region of Krishnagiri District for promotional programme towards augmenting the biofuel programme. From the identified trees, scions have been collected and successful grafts have been produced. These grafted ramets have been established in the form of clonal multiplication area and are now deployed for mass multiplication of pungam clonal plants towards promotion of biofuel plantations in association with biofuel unit of Bannari Amman group of companies.

1.Species Name	Pongamia pinnata	Pongamia pinnata	Pongamia pinnata	Pongamia pinnata
Location / Source	Gulletti village, Denkanikottah Taluk, Krishnagiri Dist.	Nagappa Farmer Field, Gulletti village, Denkanikottah Taluk, Krishnagiri Dist.	Gulletti village, Denkanikottah Taluk, Krishnagiri Dist.	Gulletti village, Denkanikottah Taluk, Krishnagiri Dist.
Height	18 m	25 m	20 m	23 m
DBH	210 cm	172.5 cm	180 cm	170 cm
Crown length	20 m	13 m	13 m	15 m
Tree Yield	700 kg	1000 kg	450 kg	400 kg

Agenda No.3

New Schemes sanctioned from January 2011 to December 2011

(Rs. in lakhs)

S.No	Title of the Project / Scheme	Name of the Scheme	Name of the PI & Location	Period	Budget
1.	Testing of new plant growth regulator Forchlorfenuron (Sitofex) in pigeon pea	Private Agency	Dr.K.Ramah ARS, Bhavanisagar	Sep 2011 - Oct 2012	1.25
2.	Management of Rhizome rot (Phytophthora blight) or P. graminicola disease in turmeric	ATMA Project	Dr.S.Maruthasalam ARS, Bhavanisagar	Aug 2011 - Mar2012	0.30
3.	Effect of climate change on pollinator populations	ICAR - NICRA	Dr.P.A.Saravanan ARS, Bhavanisagar	Sep 2011 - Aug 2014	44.62
4.	Sustainable Integrated Farming System for different agro climatic zones of Tamil Nadu- Bhavanisagar centre.	GOI - NADP	Dr.M.Mohamed Yassin ARS, Bhavanisagar	Dec 2011 - Sep 2012	8.34
5.	Water harvesting technology to cope with climate variability in dryland agriculture in Tamil Nadu	GOI	Director, CM DARS, Chettinad	2011-14	7.98
6.	Enhancing pulse and oilseed productivity through designer seed and foliar nutrition approach in Sivagangai district (ATMA)	GOI	Dr.P.Balasubramaniyan DARS, Chettinad	2011-12	0.50
7.	Evaluation of barnyard millet cultures for their suitability and yield performance under rain-fed alfisol conditions of Sivagangai District	GOI	Dr.P.Arunachalam DARS, Chettinad	2011-12	0.10
8.	Creation of Infrastructure facilities for M.Tech. course in Food and Agricultural Process Engineering	GOI	Dr.P.Rajkumar Agrl. Processing, Coimbatore	2010-11 & 2011-12	75.00
9.	Making tractor based solution for puddling rice fields	Private Agency	Dr.D. Manohar Jesudas AMRC, Coimbatore	April 2011 to Mar.2012	3.00
10.	Making tractor based solution for puddling rice fields	Private Agency	Dr.D. Manohar Jesudas AMRC, Coimbatore	April 2011 to Mar.2012	3.00
11.	Farmers Participatory Action Research Programme (FPARP) Phase II on Water Management	GOI	Dr.K. Ramaswamy SWCE, Coimbatore	Feb. 2011 to Mar.2012	25.00
12.	Post harvest Enterprises for Rural Development	CIDA McGill project	Dr.N.Varadharaju, PHTC, Coimbatore	June 2010 to May 2013	22.00
13.	Revalorizing small millets: Enhancing the food and nutritional security of women and children in rain fed regions of South Asia using under utilized species	IDRC Canada project	Dr.D. Malathi, PHTC, Coimbatore	1.03.2011 - 1.09.2014	147.44
14.	Poultry litter based biogas production plant slurry handling and enrichment	Private Agency	Dr.N.O. Gopal Bioenergy, CBE	May 2011 - April 2014	22.15

15.	Isolation of Clostridium strains and a two phase digestion system for efficient butanol production	ICAR –Fully financed	Dr.Geeta Bioenergy, CBE	Jan. 2011 to Dec. 2015	12.38
16.	Water Harvesting Technology to cope with Climate Variability in Dryland Agriculture in Tamilnadu under NICRA	ICAR- Fully financed	Dr.S.Jeyaraman SWCE, Coimbatore	2011-2014	125.00
17.	Development of e-courses for B.Tech. (Agrl. Engg.)	ICAR – NAIP	Dr.S. Santhana Bosu AEC&RI, CBE	2011-2014	76.60
18.	Characterization of Wetland Ecosystems of Coimbatore District and their sustainable management for environmental health	UGC	Dr.A.Bharani Env.Sciences,CBE	Feb. 2011 – Jan2014	7.59
19.	Bioprospecting Marine Actinomycetes for Therapeutic use	UGC	Dr.P.Dhevagi Env.Sciences,CBE	Feb. 2011 – Jan2014	8.45
20.	Standardization of Vermicompost production under bamboo plantations of Tamil Nadu	Part II Plan	Dr.M.Maheswari Env.Sciences,CBE	April 2011- March 2012	4.92
21.	Integrated remediation for improving and managing polluted soils and waters in Tirupur, Coimbatore, Erode and Karur Districts	Govt. of TN Agri. (AU) Department Chennai	Dr.S.Mahimairaja Env.Sciences,CBE	Oct 2011- Dec 2011	26.46
22.	Assessment and management of soil quality across Singapore streetscape	National Parks Board Singapore	Dr.S.Mahimairaja Env.Sciences,CBE	May 2011- May 2012	7.16
23.	Bioprocessing of Gelatin Industry Solid waste for value added organic manure production	Private Agency	Dr.P.Doraisamy Env.Sciences,CBE	June 2011 - May 2013	10.27
24.	Strategic Environmental Assessment of Cocoa Cultivation in Tamil Nadu	Private Agency	Dr.M.Maheswari Env.Sciences,CBE	Nov 2011- Oct 2016	49.28
25.	Studies on Eco-monitoring the land application of distillery spentwash for sustainable crop production and maintenance of soil health and environmental aspects	Private Agency	Dr.P.Thangavel Env.Sciences,CBE	Oct 2011- Sep 2014	10.60
26.	Eco-monitoring the land application of Effluent Treatment Plant (ETP) water of Floral Extraction Industry on Soil,Crop and Water	Private Agency	Dr.K.Valliappan Env.Sciences,CBE	Oct 2011- Sep 2013	11.36
27.	Accelerated fodder development programme	NADP	Dr.A.Kalamani Forage Crops, CBE	2011-12	50.00
28.	Coupling mechanism of Soil Carbon sequestration and Productivity enhancement for different cropping systems for Sustainable Agriculture	GOI-DST	Dr. K. Basker AC&RI, Killikulam	2011-12 to 2013-14	34.47

29.	Research delivery model of sustainable land management, diversified crop production technology in coastal agro-ecosystem of Thoothukudi Dt.	Part II Plan	Dr.V.Subramanian AC&RI, Killikulam	2011-12	3.2
30.	Sustainable Integrated Farming System for different Agroclimatic zones of Tamil nadu	NADP	Dr.J.Sundersingh Rajapandian AC&RI, Killikulam (Sub-centre)	Dec 2011- Nov 12	13.95
31.	Imparting training and organizing farm school on the diagnosis and management of nematode diseases	NADP	Dr.P.Kaliyarasan AC&RI, Killikulam (Sub-centre)	2011-12	4.51
32.	Entrepreneurship Development for Rural Unemployed Youth in Thoothukudi District of Tamil Nadu through Sustainable Milky Mushroom Production Technology	GOI-DBT	Dr.M.Jayasekhar AC&RI, Killikulam	2012-15	14.44
33.	Physiological and Molecular Characterization of Cotton Genotypes for Drought Tolerance.	DST	Dr.S.Preetha AC&RI, Killikulam	2012-15	21.00
34.	Transcript Profiling and Identification of Markers for Drought and Salinity Stress Tolerance in Rice	DST	Dr.S.Rajesh AC&RI, Killikulam	2012-15	19.87
35.	Development of Dwarf and Early Mutant in White ponni Rice using Mutation Breeding	DAE- BRNS – BARC	Dr.M.Arumugam Pillai AC&RI, Killikulam	2012-15	17.00
36.	Beating Begomo Viruses: Better Livelihood for Farmers in Tropical Asia with Begoma Virus Resistant Tomato, Hot pepper and Mung bean and Integrated Disease Management	Foreign Agency	Dr. S.Rajesh AC&RI, Killikulam	2012-15	61,620 Euro
37.	Production of planting materials (Potato)	NHM	HRS, Kodaikanal	2011-2012	2.00
38.	Garlic seed production, Aromatic crops development and National seminar on Aromatic crops.	NHM	HRS, Kodaikanal	2011-2012	5.00
39.	Water harvesting technology to cope with climate variability in dry land Agriculture in Tamil Nadu under NICRA	ICAR	Dr.S.Jeyaraman ARS, Kovilpatti Sub centre	2011-12 to 2013-14	5.18
40.	National Horticultural mission	GOI	Dr.V.Ponnuswami, ARS, Kovilpatti Sub centre	2011-12	0.75
41.	Production & supply of foundation seeds of pulses by TNAU	GOI	Dr.M.Bhaskaran ARS, Kovilpatti Sub centre	2011-12	1.32
42.	National initiative on climate resilient Agriculture technology demonstration on farmers	ICAR	Dr.D. Jawahar ARS, Kovilpatti	2010-11 & 2011-12	12.30

43.	National initiative on climate resilient Agriculture technology demonstration on farmers	ICAR	Dr. A. Solaimalai ARS, Kovilpatti	2010-11 &2011-12	15.35
44.	Revalorizing small millets: Enhancing the food and nutritional security of women & children in rainfed regions of South Asia using underutilized species	Private Agency	Dr. D. Malathi TNAU, Coimbatore	2011-2014	5.24
45.	Combating decertification & developing rural livelihood on sustainable basis in hot arid regions of coastal India	Private Agency	Dr.D. Jawahar ARS, Kovilpatti	2011-12	3.50
46.	Isolation of active antimicrobial compound from medicinal plants against plant diseases	Private Agency	Dr.P.Marimuthu Microbiology, Coimbatore	Jan 2011 to Dec 2013	11.22
47.	Isolation and extraction of antimicrobial compounds from Termitomyces and evaluation of its pharmaceutical application	DST	Dr.V. Gomathi Microbiology, Coimbatore	April 2011 to Mar.2014	21.99
48.	Investigation on diversity of arbuscular micorhizal fungi in Agricultural soils of Tamilnadu for improved inoculant Development	GOI	Dr.D.Balachander Microbiology, Coimbatore	April 2011 to Mar.2013	15.18
49.	Evaluation of Byotrol for the efficacy in preventing post harvest spoilage of fruits and vegetables	Foreign Agency	Dr.K.Kumar Microbiology, Coimbatore	April 2011 to Aug. 2011	1.00
50.	Development of newer co-inoculants for N and P nutrition and evaluation of their stability in nanoclay formulations	Foreign Agency	Dr.K.Ilamurugu Microbiology, Coimbatore	Jan 2011 o Dec 2013	72.16
51.	Studies on Short and Long term impact of Distillery Effluent (Biomethonated) Fertigation and one time controlled application to Paddy, Sugarcane and Banana on Changes in Soil and Water Sources		Dr.P.Balasubramanian AEC&RI,Kumulur	1.10.2011 to 30.9.2012	5.00
52.	Development of power operated sugarcane sett cutter cum detopper and detrasher		Dr.P.Kamaraj AEC&RI,Kumulur	2011-2013	9.60
53.	Enhancement of rice yield in sodic soil in five districts of Tamil Nadu	NADP	AEC&RI, Kumulur		1.83
54.	Seed production in oil seeds and pulses	NADP	AEC&RI, Kumulur		1.93
55.	Production and supply of foundation seeds of pulses by TNAU	NADP	AEC&RI, Kumulur		1.92
56.	Large scale mass production and field release of parasitoids for the management of papaya	NADP	AEC&RI, Kumulur		1.30

	mealybug in major crops of Tamil Nadu				
57.	Water harvesting technology to cope up with climate variability in dry land agriculture in Tamil Nadu	ICAR Fully financed	AEC&RI, Kumulur		12.73
58.	Farmers participatory action research programme (FPARPs)	GOI	Dr.S.Krishnasamy AC&RI, Madurai	Jan. 2011 to March 2012	50.00
59.	Morphological characterization and identification of superior high yielding Barnyard millet Echinochloa frumentacea (Roxb.) Lirk genotypes suited to southern districts of Tamil Nadu.	UGC	Dr.C.Vanniarajan AC&RI, Madurai	April 2011 to Mar.2014	6.80
60.	Effect of Mangala Setright on soil pH, nutrient uptake, growth and yield on paddy	Private scheme	Dr.J.Prabhakaran AC&RI, Madurai	June 2011 to May 2012	0.95
61.	Upliftment of the rice growers by adoption of IPDM technologies in Madurai East Block	DST	Dr.R.Nalini AC&RI, Madurai	June 2011 to May 2013	15.99
62.	Empowerment of land less SC/ST women through mushroom cultivation and value addition of mushrooms	DSIR	Dr.N.Revathy AC&RI, Madurai	June 2011 to May 2013	9.83
63.	Standardization of techniques for extending shelf life in jasmine flowers through eco-friendly Pre and Post harvest management	UGC	Dr.S.Balakrishnan AC&RI, Madurai	July 2011 to June 2014	5.62
64.	Development of kairomone based IPM module for the management of lepidopteran pests of okra	DBT	Dr.R.K.Murali Baskaran, AC&RI, Madurai	Aug. 2011 to July 2014	11.49
65.	Biological testing of spinetoram 12 SC w/v (11.7% w/w) against lepidopteran pests and their natural enemies on Rice, Okra, Brinjal, Tomato and Chickpea	Dow Agro Sciences India Limited, Mumbai	Dr.N. Muthukrishnan AC&RI, Madurai	Aug. 2011 to July 2013	14.00
66.	Testing the efficacy of Virtako 1.5 G, 40 WG and 60 WG against pests of rice and Virtako 1.5 G and Alika 247 ZC against pests of maize	Private Agency	Dr.R.K.Murali Baskaran AC&RI, Madurai	Sept. 2011 to Aug.2013	5.50
67.	Testing the bio-efficacy of Coragen(Chlorantraniliprole) 20% SC against insect pests of Groundnut	Private Agency	Dr.D.S.Rajavel AC&RI, Madurai	Oct. 2011 to April 2012	2.17
68.	Evaluation of Strobilurins and Triazoles against important diseases of Grapes, Tomato, Groundnut, Chillies and Rice	Private Agency	Dr M.Theradimani AC&RI, Madurai	Oct. 2011 to Oct.2013	19.71
69.	Testing the bio efficacy of combination product of Gamma cyhalothrin	Private Agency	Dr.S.Manisegaran AC&RI, Madurai	Oct. 2011 to Oct.2013	6.97

	10+chlorpyriphos 30EC against stem borer leaf folder of Paddy , Cotton boll worms				
70.	Testing the bio-efficacy of Coragen(Chlorantraniliprole) 20% SC against insect pests of Groundnut	Private Agency	Dr.D.S.Rajavel AC&RI, Madurai	Oct. 2011 to April 2012	2.17
71.	Testing the bio efficacy of combination product of Gamma cyhalothrin 10+chlorpyriphos 30EC against stem borer leaf folder of Paddy , Cotton boll worms	Private Agency	Dr.S.Manisegaran AC&RI, Madurai	Oct. 2011 to Sept. 2013	6.97
72.	Societal Upliftment of women/SC/ST of Madurai and Virudhunagar districts of Tamilnadu by imparting training on agricultural waste degradation, biopesticide production and cultivation of milky mushroom	DST	Dr.M.Theradimani AC&RI, Madurai	Nov. 2011 to Oct. 2014	14.28
73.	Innovation in Science Pursuit for Inspired Research.	DST	Dr.A.R.Mohamed AC&RI, Madurai	Dec. 2011	9.75
74.	Demonstration cum Training on Drip Fertigation for cotton based cropping system (Cotton – Pulse – Maize)	NADP	Dr.T.Myrtle Grace AC&RI, Madurai	Dec. 2011	25.27
75.	Evaluation on the bioefficacy of Gamma cyhalothrin 6 CS (CHA 1526) against Helicoverpa on tomato and Gamma cyhalothrin 1 + Chlorpyriphos 30 EC (CHA 7178) against fruit borers on brinjal and diamond back moth on cabbage	Private Agency	Dr.M.Shanthi AC&RI, Madurai	Dec. 2011 to Nov.2013	6.54
76.	Testing the bio efficacy of Gamma cyhalothrin 6 CS against insect pests of rice and the combination product of Gamma yhalothrin 1 + chlorpyrifos 30 EC against insect pests of Pigeon pea	Private Agency	Dr.J.Jayaraj AC&RI, Madurai	Dec. 2011 to Nov.2013	6.10
77.	Testing the bio-efficacy of Biofight against Thrips and Mites of Chillies	M/s. Biotic Life Sciences (India) Pvt. Ltd	Dr.D.S.Rajavel AC&RI, Madurai	Dec. 2011 to June 2012	1.61
78.	Improving farmers lively hoods and food security through enhanced legume productivity in India and Myanmar	ICRISAT	Dr.K.Ganesamurthy Oilseeds, CBE	April 2011 – March 2013	6.00
79.	Development and promotion of promising varieties /lines with high yield and high oil content with enhanced O/L ratio for enhancing production and quality of groundnut oil in drought prone environments to boost	ICRISAT	Dr.K.Ganesamurthy Oilseeds, CBE	April 2011 – March 2015	49.50

	the income of small and marginal groundnut farmers in India				
80.	Improving the livelihoods of smallholder farmers in drought prone areas of sub-saharan and South Asia through enhanced grain legume production and productivity	ICRISAT	Dr.K.Ganesamurthy Oilseeds, CBE	Sept.2011 - Aug. 2014	13.02
81.	Identification of quantitative trait (QTLs) for drought tolerance in groundnut	UGC	Dr. P.Vindhiyavarman Oilseeds, CBE	April 2011 – March 2014	8.42
82.	conduct of sunflower FLD for the benefit of schedule tribes	ICAR Fully	Dr. K.Srinivasan Oilseeds, CBE	2011 - 2012	7.50
83.	Private seed Sector Research and Technology Consortium	Directorate of ABD, TNAU	Dr. K.Ganesamurthy Oilseeds, CBE	2011 - 12	1.36
84.	Promotion of Sustainable Agriculture / Horticulture in on Entry Point Activity works in Kookalthorai watershed area	HADP Scheme	Dr. N. Selvaraj HRS, Ooty	2011-2012	56.5
85.	Evaluation of Cumbu Hybrids	Private scheme PHI	Dr.K.Geetha RRS, Paiyur	Sep.2011 - Feb.2012	1.15
86.	Evaluation of Rice Hybrids	Private scheme PHI	Dr.K.Geetha RRS, Paiyur	Sep.2011 - Feb.2012	1.15
87.	Production of quality seeds of wheat and popularization of wheat cultivation in Krishnagiri and Dharmapuri districts of Tamil Nadu	NABARD-FTTF	Dr.K.Geetha RRS, Paiyur	2012-2015	5.87
88.	“Evaluation of plant growth promoters – Bitamine in tomato, kensei in chilli, cluster G in rice and green gold in Blackgram.	Private Agency	Dr.A.Anderson Amalan Kumar RRS, Paiyur	Jan.2011 - Dec.2011	5.54
89.	Identification of Ion channels and transporters which regulate drought tolerance by stomatal aperture closure in drought tolerant and sensitive varieties of rice	ICAR-NICRA	Dr.M.Dhandapani, RRS, Paiyur	Oct.2011 – Sep.2014	13.59
90.	Development of cold tolerant rice lines through doubled haploid technique	DST	Dr.M.Dhandapani, RRS, Paiyur	Mar.2012 to Apr.2015	14.73
91.	Introduction of SRI in wet seeded rice in TN	IAMWARM	Dr.S.Vijayabaskaran RRS, Paiyur	Apr.2011 - Mar.2013	3.33
92.	Evaluation of furrow irrigated raised bed system of rice cultivation		Dr.S.Vijayabaskaran RRS, Paiyur	Apr.2011- Mar.2013	3.95
93.	National Initiative on Climate Resilient Agriculture	ICAR scheme	Dr.V.Ganesaraja CSRC, Ramnad	2011-12	30.35
94.	Popularization of Soil Breeding and Water Management Strategies in Coastal Sandy Soil of Ramanathapuram District	NADP – RKVY	Dr.V.Ganesaraja CSRC, Ramnad	2011-12	15.89
95.	Advanced techniques for soil moisture & applications using Microwave Remote Sensing data	GOI	Dr.R.Jagadeeswaran RS&GIS, CBE	01.01.2011 to 31.03.2013	11.04

96.	Hyperspectral study of soil mineralogy, nutrient stress and crop residue cover	GOI	Dr.R.Sivasamy RS&GIS, CBE	01.08.2011 to 31.03.2012	16.00
97.	Monitoring and optimizing farm nutrient flows and stocks as the basis for integrated nutrient management towards breaking crop yield barrier (NUTMON)	NADP	Dr.R.Sivasamy RS&GIS, CBE	01.12.2011 to 31.03.2013	42.36
98.	participatory seed production demo on pulses and oilseeds.	NADP	Dr.M.L.Manoharan SRS, Sirugamani	2010-11 & 2011-12	1.75
99.	Enhancing rice production in salt affected soils in five districts of Tamil Nadu	NADP	Dr.M.L.Manoharan SRS, Sirugamani	17.2.2011 – 16.2.2012	4.39
100.	Production and supply of Foundation seed by TNAU	NADP Phase IV	Dr.M.L.Manoharan SRS, Sirugamani	12.12.2011– 11.12.2012	4.23
101.	Impact of sunwin drip special on the yield and quality of sugarcane	Private agencies	Dr.S.Panneerselvam SRS, Sirugamani	Feb 2011 to Jan 2012	0.80
102.	NADP Large scale mass production and field release of parasitoids for the management of papaya mealybug in major crops of Tamil Nadu	NADP	Dr.J.Jeyakumar SRS, Sirugamani	Dec 2011 – Nov 2012	1.30
103.	BASF Multilocation testing, seed multiplication and CMS Maintenance in the exotic rice genotypes	BASF	Dr.S.Panneerselvam SRS, Sirugamani	2010-2012	1.50
104.	Quality control arrangements on seed -Central sector scheme development and strengthening of seed infra structure facilities for production and distribution of quality seeds	GOI	Dr.M.Bhaskaran Seed Centre Coimbatore	2011 to 2012	174.00
105.	Genetic purity assessment of commercial seed lots of varieties & hybrids of Rice and Maize through identification of suitable SSR markers	GOI	Dr.R.Jerlin Seed Centre Coimbatore	2011 to 2014	6.36
106.	FPARP to Enhance Yield and income per Drop of Water in Predominant Cropping Systems of Cauvery Delta Zone		Dr.G.Rangaraju SWMRI,Thanjavur	2010-2012	40.0
107.	Pilot project on augmenting productivity of lead crops/activities through adoption of sustainable agricultural practices		Dr. S.Vallal Kannan SWMRI,Thanjavur	2010-2013	48.4
108.	Enhancing rice production in salt affected soils in five districts of Tamil Nadu	TNAU-NADP	Dr.B.Chandra-sekaran SWMRI,Thanjavur	2011-2012	5.77
109.	Site Specific Nutrient Management in Maize growing districts of Tamil Nadu	CSIA-IPNI	Dr.B.Chandra-sekaran SWMRI,Thanjavur	2011-2012	1.00

110.	Sustaining rice production in a changing climate: Testing climate uncertainties and validating selected adaptation techniques on farmers fields(ClimaRice)		Dr.S.Vallal Kannan SWMRI, Thanjavur	2010-2013	6.50
111.	Conservation agriculture		Dr.B.Chandrasekaran SWMRI, Thanjavur	2010- Oct 2011	3.30
112.	Seed production in Agricultural Crops	ICAR- Revolving Fund-	Special Officer (Seeds) SWMRI, Thanjavur	Three years	1.50
113.	Evaluation of Bioefficacy, Phytotoxicity of new chemical insecticides viz., Volium Flexi 300 SC, Virtako 40 WG and Volium Targo 063 SC against major pests of rice and Biosafety to natural enemies	Private Agency	Dr.V.G.Mathirajan SWMRI, Thanjavur	One year	5.23
114.	NADP-IFS		Dr.B.Chandrasekaran SWMRI, Thanjavur	One year	13.49
115.	Evaluation of selected okra (<i>Abelmoschus esculentus</i> Moench) hybrids for yield and YVMV resistance.		Dr. L.Pugalendhi Coimbatore	1.4.11 To 31.3.12	1.36
116.	Development of Mungbean Yellow Mosaic Virus (MYMV) resistant line(s) in greengram (<i>Vigna radiata</i> (L.)Wilezek) through induced mutagenesis	GOI	Dr.S.Arulselvi ARS, Vaigai Dam	Apr. 2011 – March 2014	11.37
117.	Training on Seed production technology	CIDA project	Dr.P.R.Renga-nayaki ARS, Vaigai Dam	Apr. 2011 – Mar. 2012	6.30
118.	GOI - NADP – FPSD (RKVY)		Prof & Head, ARS, Vaigai Dam	April 2011 – March 2012	2.38
119.	GOI - NADP – FS (RKVY)		Prof & Head, ARS, Vaigai Dam	April 2011 – March 2012	7.28
120.	Enrichment of rhizosphere soil with microbial consortia for the collective management of soil borne plant diseases in Agricultural ecosystem	TNSCST Scheme	Dr.K.Manonmani, ARS, Vaigai Dam	June, 2011 – May 2013	2.03
121.	Popularization of seed production technology of small onion among Theni District farmer	TNSCST	Dr.K.Sundharaiya ARS, Vaigai Dam	31.10.2011	0.20
122.	Cold tolerant rhizobacteria as a bionematicide for high value crops (Coffee and black pepper)	Under DST Fast Track Young Scientists	Dr.P.Senthil Kumar HRS, Yercaud	Three years	11.15
123.	Expansion of drought tolerant invader tree (<i>Prosopis juliflora</i>) and its impact of water use and economy		Dr M Jegadeesan AC&RI, Madurai	3 years	5.00
124.	Resurvey of 100 tanks and 1000 households in South Tamil Nadu: A socio economic study		Dr M Jegadeesan AC&RI, Madurai	1 Year	3.00
125.	Training on value addition in fish for entrepreneurial		Mrs.S. Jesupriya Poornakala	2011-2012	0.30

	development of fisher women		KVK, Thiruvapur		
126.	Promoting occupational health and safety of women workers employed in small scale sea food processing units		Dr. P.Parimalam HSC & RI, Madurai	3 yrs	9.54
127.	Designing safe and ergo friendly kitchen for elderly		Dr. P.Parimalam HSC & RI, Madurai	2 yrs	13.40
128.	DST-INSPIRE		Dr.C.Sudhalakshmi AC&RI, Madurai	1-5 th Dec'2011	9.75
129.	Mangala setright		Dr.J.Prabhakaran AC&RI, Madurai	June 2011 to May 2012	0.95
130.	NAIP-BPDU-Madurai Centre		Dr.A.R.Mohamed Haroon AC&RI, Madurai	2011-2013	4.24
131.	RSCL		Dr.B.Bakiyathu Saliha AC&RI, Madurai	2011-2013	3.55
132.	Carbon sequestration potential of Rice ecosystem	UGC, New Delhi	Dr.R.K.Kaleeswari SS&AC, CBE	Feb 2011 to Jan.2014	7.84
133.	Demonstration of yield enhancement in maize and rice through Nutriseed Pack technique and designing prototype machineries for industrial production of Nutriseed Packs	DST, New Delhi	Dr.K.Arulmozhiselvan SS&AC, CBE	April 2011 to Mar.2013	30.91
134.	Isolation and extraction of antimicrobial compounds from termitomyces and evaluation of its pharmaceutical application	DST / TNSCST, New Delhi	Dr.V.Gomathi Microbiology, CBE	April 2011 to Mar.2014	21.99
135.	Development of process for microbial delignification of lignocellulosic biomass/waste for fuel ethanol production	DBT	Dr.U.Sivakumar Microbiology, CBE	Oct. 2011 to Sept. 2014	61.90
136.	Bioprospecting Marine Actinomycetes for Therapeutic Enzymes	UGC, New Delhi	Dr.P.Dhevagi ENS, Coimbatore	Feb 2011 to Jan. 2014	8.45
137.	Characterization of Wetland Ecosystem of Coimbatore District and Developing Management Strategies for sustainable soil health	UGC, New Delhi	Dr.A.Bharani ENS, Coimbatore	Feb 2011 to Jan. 2014	7.59
138.	Evaluation of Byotrol for the efficacy in preventing Post harvest spoilage of fruits and vegetables	M/s Byotrol Technology Ltd, Manchester UK	Dr.K.Kumar Microbiology, CBE	March 2011 to Dec.2011	1.00
139.	Integrated remediation for improving and managing polluted soils and waters in Tirupur, Coimbatore, Erode, and Karur Districts	Govt. of TN Agri.(AU) Department Chennai	Dr.S.Mahimairaja ENS, Coimbatore	Oct . 2011 to Dec. 2011	26.46
140.	Fabrication of Nano agricultural inputs for promoting groundnut productivity and environmental safety	DST, New Delhi	Dr. K.S.Subramanian Nanotech, CBE	2011 to 2014	64.26
141.	Entrepreneurship development for the rural population on preparation of		Dr. V. Ponnuswami HC &RI, Periyakulam	July 2011- June 2014	14.63

	dry flower materials and establishing a dry flower small scale cottage industries for improvement of their livelihood				
142.	Exploring the use of ornamental flowers as natural food colourants		Dr. V. Ponnuswami HC &RI, Periyakulam	April 2011- March 2013	24.62
143.	Development of organic production techniques for noni (<i>Morinda citrifolia</i>) under varying water regimes through drip irrigation for higher yield and post harvest quality		Dr. V. Ponnuswami HC &RI, Periyakulam	Jan. 2011- Dec. 2014	10.00
144.	Establishment of mother plant nurseries for high pedigree planting material for fruit crops.		Dr. V. Ponnuswami HC &RI, Periyakulam	Aug. 2011- July 2012	39.50
145.	Studies on the non flowering and poor performance of tamarind in forests and wastelands of Tamil Nadu under the Department of Forest.		Dr. V. Ponnuswami HC &RI, Periyakulam	April 2011- March 2013	11.32
146.	Implementation of the Voluntary centre under ICAR- AICRPS on flower crops net work programme		Dr. V. Ponnuswami HC &RI, Periyakulam	July 2011- June 2012	0.80
147.	Scheme on commercial exploitation and industrial application of tamarind seed for food grade pectin, gum and other value added products		Dr. V. Ponnuswami HC &RI, Periyakulam	2011- 2013	29.79
148.	Health management of horticultural and agricultural crops using excel crop care chemicals		Dr. V. Ponnuswami HC &RI, Periyakulam	July 2011- June 2012	24.00
149.	GOI- CSS-NHM - Development of spices		Dr. V. Ponnuswami HC &RI, Periyakulam	April 2011- March 2012	69.77
150.	Production of healthy seed and planting materials of horticultural crops		Dr. V. Ponnuswami HC &RI, Periyakulam	1-3 Feb 2012	0.46
151.	National initiative on climate resilient agriculture		Dr.C.Mayilswami WTC, Coimbatore	March, 2011 to Mar.2012	31.00
152.	Effect of 'Invinsa' (1-Methylcyclopropene: 1-MCP) on physiological aspects, growth and yield of rice crop		Dr.S.Mohandass WTC, Coimbatore	Feb. 2011 to Jan. 2013	7.84
153.	Drip fertigation studies in aerobic rice		Dr.S.Mohandass WTC, Coimbatore	May. 2011 to Apr. 2013	5.90
154.	Identification and up-scaling of GHG (Methane) emission reduction technologies in SRI for carbon trading		Dr.S.Mohandass WTC, Coimbatore	Aug. 2011 to Mar.2013	54.70
155.	Upscaling of E-Velanmai		Dr. C. Karthikeyan CARDS, Coimbatore	2011-2012	58.90
156.	Evaluation of Furrow Irrigated Raised Bed (FIRB) System Of Rice Cultivation		Dr.B.J.Pandian WTC, Coimbatore	Sept. 2011 to Mar.2013	17.40

157.	Implementation of Sustainable Sugarcane Initiative (SSI) in sub basins		Dr.B.J.Pandian WTC, Coimbatore	Sept. 2011 to Mar.2013	181.83
158.	Introduction of SRI in Wet Seeding rice in TN-IAMWARM sub basins		Dr.B.J.Pandian WTC, Coimbatore	Sept. 2011 to Mar.2013	18.30
159.	Statistical investigation of the inter and intra variability in yield data of demonstrations of different crops in IAMWARM sub-basins in Tamil Nadu State, India		Dr.C.R.Ranganathan WTC, Coimbatore	Sept. 2011 to Mar.2013	17.00
160.	Development of farm level optimal cropping pattern (Scientific Farm Advisories) to maximize the farm income in TN-IAMWARM sub basins		Dr. S. Selvam CARDS, Coimbatore	Aug. 2011 to Mar.2013	29.90
161.	Development of wilt resistant heterotic gene pool in castor (<i>Ricinus communis</i> L) through induced mutagenesis.	Board of Research in Nuclear Sciences (BRNS), Mumbai	Dr.S.R.Venkatachalam TCRS, Yethapur	2010-2013	12.82
162.	Dissemination of improved tapioca production technologies and value addition techniques among SC & ST tapioca growers for their economic upliftment in Salem district of Tamil Nadu	GOI –DBT	Dr. A. Janaki Rani TCRS, Yethapur	2011-2014	18.07
163.	Demonstrating the efficacy of foliar spray of cassava tonic in Erode, Salem and Namakkal district	NABARD- FIPF	Dr. N. Kumar HC&RI, Coimbatore	2011-2013	6.93
164.	Reinvigoration of agricultural practices among farmers for sustainable crop productivity and alleviating poverty in Vavuniya district of Sri Lanka.	India-Sri Lanka Foundation	Dr. V. Rajendran TCRS, Yethapur	2012-2015	1.50
165.	Farmers Participatory Approach for hybrid castor with onion intercropping through drip fertigation.	NADP/ RKVY	Dr. V. Rajendran TCRS, Yethapur	Dec. 2011 to Dec.2012	8.00
166.	Engineering transcription factors ABI 3 and ABI 5 in rice for salt and drought stress tolerance	DST	Dr.B.Rajagopal AC&RI, Madurai	2011-2014	21.80
167.	Isolation and characterization of mutants with altered starch composition for augmenting industrial value of Tapioc	GOI	Dr.J.Prem Joshua HRS, Pechiparai	2011-14	21.35
168.	Commercialization of Anthurium and Heliconia among with farmers of Kanyakumari district	NABARD	Dr.R.Swarnapriya HRS, Pechiparai	2011-14	8.31
169.	National initiative on climate resilient agriculture	ICAR	Dr.V.Ganesaraja CSRC-Ramnad	2011-12	30.35
170.	Popularization of soil breeding and water management strategies in	NADP	Dr.V.Ganesaraja CSRC-Ramnad	2011-12	15.89

	coastal sandy soil of Ramnad				
171.	Demonstration of laser leveler under farmer participatory mode in system of rice intensification		Dr.G.Kathiresan TNAU, Coimbatore	2011-212	5.34
172.	Upscaling popularization of little millet in Javadu hills of Thiruvannamalai district, Tamil Nadu for enhancing the livelihood of tribal farmers		Dr.A.Nirmalakumari Dept. of Millets, CBE	2011-2014	32.12
173.	Marker assisted introgression of major QTLs conferring resistance to sorghum downy mildew in maize		Dr.K.N.Ganesan Dept. of Millets, CBE	2011-2014	9.66
174.	Development of low phytate soybean [(<i>Glycine max</i> L. (Merr.))] through induced mutagenesis		Dr.T.Kalaimagal Dept.of Pulses, CBE	2011-14	18.82
175.	Genetic enhancement of indigenous aromatic rice of Assam (<i>Joha Rice</i>) using genomic approach with particular reference to Aroma	BRNS	Dr. A. John Joel Dept. of PGR, CBE	2011-2014	4.38
176.	Isolation and characterization of mutants with altered starch composition for augmenting industrial value of Tapioca (<i>Manihot esculenta</i> Crantz.)	DBT	Dr. A. John Joel Dept. of PGR, CBE	2011-2014	21.65
177.	Reducing Raffinose family oligosaccharides through molecular breeding strategies in chickpea	DBT	Dr. J.R. Kannan Babu Dept. of PGR, CBE	2008 – Dec. 2011	34.23
178.	Reducing raffinose family oligosacrides through induced mutagenesis in Black gram	DBT	Dr. S. Ganesh Ram Dept. of PGR, CBE	2011-14	20.60
179.	Establishment of TILLING resources in chosen pulse crops through next generation sequencing technologies	DBT	Dr. S. Ganesh Ram Dept. of PGR, CBE	2011-12 to 2016-17	51.96
180.	Evaluation of FACTMIX for major crops of Tamil Nadu	M/s The FACT, Udyogmandal, Kerala	Dr.R.K.Kaleeswari SS&AC, CBE	2/2011 to 1/2012	11.74
181.	Carbon sequestration potential of rice ecosystem	UGC	Dr.R.K.Kaleeswari SS&AC, CBE	Feb 2011 to Jan 2014	7.84
182.	Demonstration of seed yield enhancement in maize and rice through Nutriseed Pack technique and designing prototype machineries for industrial production of Nutriseed Packs	DST	Dr.K.Arulmozhiselvan SS&AC, CBE	April 2011 to March 2013	30.91
183.	Standardization of Biochar derived from different sources of plant communities	GOI	Dr.K.M. Sellamuthu SS&AC, CBE	April, 2011 To Mar.2012	4.92

184.	Mitigating abiotic stresses and enhancing resource-use efficiency in pulses in rice fallows through innovative resource conservation practices	NFBSFARA, IIPR, Kanpur	Dr.V. Ravi TRRI, Aduthurai	01.06.11 to 31.05.16.	34.53
185.	Real time Pest Surveillance of Rice under National Initiative on Climatic Resilient Agriculture (NICRA)	NCIPM, New Delhi .	Dr.G.V.Rama-subramanian TRRI, Aduthurai	01.08.11 to 31.05.12	5.00
186.	Evaluation of Metamifop 10 EC in direct seeded Rice and Clomazone 50EC alone and Clomazone 20 % w/w + 2, 4-D Ethyl Ester 30 % w/w Ready mix in transplanted rice eco systems	FMC Agricultural Products, Bangalore	Dr.T. Jayaraj TRRI, Aduthurai	01.08.11 to 31.07.13	7.75
187.	Evaluation of Bayer rice hybrids and training on System of Rice Intensification for capacity building to Bayer Agronomists	M/s. Bayer Bio Science Pvt. Ltd., Hyderabad	Dr.T. Jayaraj TRRI, Aduthurai	01.09.11 to 30.8.12	1.15
188.	Testing of new herbicide molecule Alto (Oxyfluorfen 23.5% EC) against grass sedges and dicot weeds in rice	M/s. FIL Industries Ltd., New Delhi	Dr.R. Panneerselvam, TRRI, Aduthurai	2011-12	1.15
189.	Evaluating the effect of Carfentrazone Ethyl 40DF, a broad leaved and sedge killer and tankmix of Metamifop 10 EC + Carfentrazone Ethyl 40 DF for broad spectrum weed management in Direct Seeded Rice	FMC India Pvt. Ltd., Bangalore	Dr.T. Jayaraj TRRI, Aduthurai	1.1.12 to 31.6.13	5.04
190.	Composting techniques for the management of water hyacinth infestation in surface water bodies of Thiruvarur district.		Dr.K. Saravanan TRRI, Aduthurai	1.1.12 to 31.12.12	1.00

Agenda No.4

NEW ACTIVITIES UNDERTAKEN

a. Release of varieties, agrl. Implements and management technologies-2012

A total of 13 varieties / hybrids (comprising 4 agricultural crops, 7 horticultural crops, one mushroom and one tree crops), five agricultural implements and three management technologies totaling 21 were approved by the 42nd State Variety Release Committee for State Release. Comprehensive details of the identified technologies for release during 2012 are listed below

1. TNAU RICE ADT 50

Special features

- Medium slender, white rice with less 1000 grain weight (15.9g)
- Higher milling (77.3%) and head rice yield (63.2%)
- Non-sticky cooked rice
- Suitable for all types of preparations
- Resistant to leaf folder, moderately resistant to stem borer and moderately susceptible to GLH, brown spot, blast and RTD

Parentage	: BPT 5204/CR 1009
Duration (days)	: 149
Season	: Samba (August sowing)
Yield (kg/ha)	: 5945
% increase	: 2.9, 16.5 and 45.1 per cent increase over CR 1009, ADT 44 and BPT 5204 respectively
Highest yield obtained	: 10,494 kg/ha
Area of adoption	: Thanjavur, Trichy, Thiruvarur, Cuddalore, Nagapattinam, Pudukkottai, Perambalur and Karur districts of Tamil Nadu.

2. TNAU MAIZE HYBRID CO 6

Special features

- High yielding single cross hybrid.
- High starch (76.30%), high protein (11.25%) and high beta-carotene (0.48 mg/100 g) with moderate level of fat (4.65 %) and crude fibre (1.29%).
- Bold, orange yellow semi dent karnal
- High shelling (81%) with high test weight (400 g /1000 grains).
- Multiple disease resistance viz, Sorghum downy mildew, *Maydis* leaf blight, *Turcicum* leaf blight, Post flowering stock rot and Banded leaf and sheath blight.
- Simultaneous sowing of male and female parents for flowering synchronization.

Parentage	: UMI 1200 x UMI 1230
Duration (days)	: 110
Season	: Irrigated (June-July & Nov. – Dec.) Rainfed (Sept. – Oct.)

Yield (kg/ha) : Irrigated : 7400 kg/ha
 : Rainfed : 5000 kg/ha

% increase :

Yield (Kg/ha)	Irrigated	Rainfed
	7400	5000
% increase over		
CoH(M) 5	28.2	16.6
900 M(G)	10.6	19.0
NK 6240	8.2	21.6

Highest yield obtained : 13272 Kg/ha

Area of adoption : Recommended for cultivation in maize growing tracts of Tamil Nadu.

3. TNAU SUGARCANE SI 8

Special features

- Best suited for mid late season.
- Commercial cane sugar – 12.9 %
- High sugar yield – 18 t/ha
- Thick and Straight cane
- No spines and easy to detrash
- Best suited for mechanical cultivation
- Tolerant to drought and water logging
- Moderately resistant to red rot
- Perform well in sodic soil

Parentage : CoC 90063 x Co 8213

Duration (days) : 330

Season : Mid late (February - May)

Yield : 146 t/ha (ratoon crop – 135 t/ha)

% increase :

kg / ha	1,46,000
% increase	14.8 over Co 86032

Highest yield obtained : 187 t/ha

Area of adoption : All sugarcane cultivated area

4. TNAU COCONUT ALR (CN) 3

Special features

- Suitable for tender nut purpose with sweet taste and high potassium content
- Field tolerance to Eriophyid mite

Parentage : Selection from Kenthali dwarf

Duration : Flowering from third year onwards

Season : Planting during June- July or December-January

Yield : 86 nuts/palm/annum

% increase : % increase over COD – 34.1
 : % increase over MYD – 37.9

Highest yield obtained : 121 nuts/palm/annum

Area of adoption : Irrigated belts of Tamil Nadu

5. TNAU PAPAYA CO 8

Special features

- Red pulped dioecious TSS 13.5%
- Papain activity 138TU/mg
- Suitable for dessert purpose, pulping, processing (RTS, jam, tutti-fruity) and papain industry

Parentage	: Initial selective hybridization of CO2 (yellow pulped) with red anthered male followed by intermating and repeated selection in segregating population for red pulp colour
Duration	: Can be economically maintained for 20-22 months under favorable condition
Season	: June- July planting for many parts of Tamil Nadu
Yield	: 230t/ha when planted at a spacing of 1.8 x1.8m
% increase	: 4.5% increased yield over CO 2
Highest yield obtained	: 235 t/ha
Area of adoption	: Areas with tropical climate having moderate weather condition; can be cultivated in many parts of Tamilnadu

6. TNAU COCCINIA CO 1

Special features

- Perennial and high yielding (83.09 t/ha/year)
- Long, green, white striped, less seeded sweet fruits (4.5° Brix)
- Suitable for culinary purpose and salad

Parentage	: Clonal selection from Annaikatti type
Duration	: Perennial
Season	: June - July
Yield	: 83.09 t/ha/year
% increase	: 54.06% increased over local type
Highest yield obtained	: 91.95 t/ha
Area of adoption	: Coimbatore, Theni, Kanchipuram, Thiruvannamalai, Vellore and Dindigul

7. TNAU BOTTLE GOURD HYBRID CO 1

Special features

- Crop suitable for bower system of cultivation
- Cylindrical, without crook neck, medium sized (0.95-1.00 kg)

Parentage	: NDBG 121 x Arka Bahar
Duration (days)	: 100 – 110
Season	: June – July and Jan. – Feb.
Yield	: 79.03 t/ha
% increase	: 27.28% increase over Warad hybrid
Highest yield obtained	: 83.32 t/ha
Area of adoption	: Coimbatore, Salem, Cuddalore, Thanjavur, Madurai, Theni, Kanchipuram, Thoothukudi, Tiruchirappalli, Erode, Dharmapuri, Krishnagiri, Vellore, Thiruvallur, Nagercoil, Thriunelveli, Namakkal, Perambalur and Dindigul

8. TNAU ASH GOURD HYBRID CO 1

Special features

- Medium viny
- Oblong medium sized fruits

Parentage	: PAG 3 x CO 2
Duration (days)	: 130 – 135
Season	: June – July and Jan. – Feb.
Yield	: 91.82 t/ha
% increase	: 36.56% increased yield over MAH 2
Highest yield obtained	: 101.00 t/ha
Area of adoption	: Salem, Erode, Coimbatore, Cuddalore, Namakkal, Madurai, Theni, Kanchipuram, Tiruchirappalli, Thanjavur, Dharmapuri, Krishnagiri, Thiruvannamalai, Thoothukudi, Vellore, Thriunelveli, Nagerkoil, Pudukkottai and Perambalur

9. TNAU MALAI VEMBU MTP 1

Special features

- Fast growing multi purpose industrial wood species
- Propagated through seeds and cuttings.
- Good fuel wood and calorific value (3700 K.cal to 4200 K.cal.)
- Conserve as alternate pulpwood species
- Basic density 538 kg/m³, pulp yield 50.5% and kappa number 19.6.

Parentage	: Selection from the existing population grown at Thalamalai
Duration	: 60 months
Yield	: 4000 cft/ ha
Highest yield obtained	: 4,329 cft/ha is recorded from a 5 year old evaluation trial
Area of adoption	: Throughout Tamil Nadu with well drained soil except water logged area

10. TNAU MILKY MUSHROOM CO (TG) 3

Special features

- Good keeping quality
- (3 days under room temperature; 5- 6 days - refrigerated conditions)
- Carbohydrates 11.8%, protein 32.9%, fibre 20.7%, potash 8.32%, iron 5.6 mg,
- Cooked mushroom has pleasing aroma.

Parentage	: Selection, introduction and purified by tissue culture method from wild mushroom collections
Duration (days)	: 45-50
Season	: Throughout the year
Yield	: 1.6 kg/ kg dry paddy straw
Highest yield obtained	: 1.76 kg/ kg dry paddy straw
Area of adoption	: Plains of Tamil Nadu

11. TNAU NILIGRIS KUFRI POTATO 1 (KUFRI NEELIMA)

Special features

- High yielding
- Resistant to late blight and potato cyst nematodes
- Good storability

Parentage	:	E/79-15 x E/79-42						
Duration (days)	:	110 - 120						
Season	:	All three season in The Nilgiris (summer, autumn and spring)						
Yield	:	250 to 300 q/ ha						
% increase	:	<table border="1"><tr><td>Kufri Swarna</td><td>+ 17.45</td></tr><tr><td>Kufri Giriraj</td><td>+ 25.77</td></tr><tr><td>Kufri Jyothi</td><td>+ 25.18</td></tr></table>	Kufri Swarna	+ 17.45	Kufri Giriraj	+ 25.77	Kufri Jyothi	+ 25.18
Kufri Swarna	+ 17.45							
Kufri Giriraj	+ 25.77							
Kufri Jyothi	+ 25.18							
Highest yield obtained	:	543.67 q/ha						
Area of adoption	:	The Nilgiris District of Tamil Nadu						

12. TNAU BLACKGRAM VBN 7

Special features

- High yield
- Resistant to Yellow Mosaic Virus
- No incidence of leaf curl virus
- Resistant to Powdery Mildew
- Less pod borer damage

Parentage	:	VBN3 / Vigna mungo var. silvestris 8								
Duration (days)	:	65-70								
Season	:	All season for Tamil Nadu and Kharif season for South zone								
Yield	:	981 kg/ha								
% increase	:	<table border="1"><tr><td>VBN 3</td><td>24%</td></tr><tr><td>VBN (Bg) 4</td><td>30%</td></tr><tr><td>Pant U</td><td>30-50%</td></tr><tr><td>RPU</td><td>38-50%</td></tr></table>	VBN 3	24%	VBN (Bg) 4	30%	Pant U	30-50%	RPU	38-50%
VBN 3	24%									
VBN (Bg) 4	30%									
Pant U	30-50%									
RPU	38-50%									
Highest yield obtained	:	ART- 1550 kg/ha, IVT – 2375 kg/ha								
Area of adoption	:	All over Tamil Nadu except Kanniyakumari and Nilgiris and South Zone, Karnataka, Andhra Pradesh and Orissa								

13. TNAU COCONUT VPM 4 (KERA KERALAM)

Special features

- Early bearer, comes to flowering in 58 months, against 72 months in ECT
- High kernel thickness (1.3 cm)
- High copra yield (3.6 t/ha)
- Highest oil outturn (2.44 t/ha)
- Suitable for rainfed and irrigated condition

Parentage	:	Selection from germplasm type collected from CPCRI, Kasaragod, Kerala
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Duration	:	Expected life span - 100 years						
Season	:	June- July or December – January						
Yield	:	152 nuts/Palm/ Year						
% increase	:	<table border="1"> <tr> <td>Nuts/ha</td> <td>26,600</td> </tr> <tr> <td>East Coast Tall (ECT)</td> <td>29.6%</td> </tr> <tr> <td>VPM 3</td> <td>47.6%</td> </tr> </table>	Nuts/ha	26,600	East Coast Tall (ECT)	29.6%	VPM 3	47.6%
Nuts/ha	26,600							
East Coast Tall (ECT)	29.6%							
VPM 3	47.6%							
Highest yield obtained	:	250 nuts/palm/year						
Area of adoption	:	All districts of Tamil Nadu						

14. ARECANUT HARVESTSER

Special features

- Unskilled workers can also use to climb
- Light weight aluminium pole with improved configuration of cutting edge of the knife for easy harvesting
- Seating arrangement (adjustable and pivotable) with back rest for safe and secure operations
- Rotatable unit to facilitate harvesting of bunches form surrounding trees.

Weight	:	12 kg
Cost of the device along with the knife	:	Rs.7000/-

15. MANUALLY OPERATED LINE MARKER

Special features

- Easy to operate
- Reduced seed rate
- Suitable for small and marginal farmers
- Reduction in cost of cultivation
- Maintenance of optimum plant population
- Easy for inter cultural operation (Weeding, Spraying)

Total Weight	:	6 Kg
Bottom Rod “L” Angle	:	1.5 m
Spacing	:	15 cm to 150 cm
Marking Tyne Length	:	22.5 cm
Handle Rod Length	:	1.5 m (Similar to Cono weeder)
Cost of the implement	:	Rs. 650/-

16. TRACTOR OPERATED MULTI-PURPOSE HOIST

Special features

- Amenable for fruit plucking, coconut harvesting, training, pruning, lopping and spraying tree crops.
- The equipment is attached to the back of a 45 hp agricultural tractor.
- Two labourers can stand on the platform and do operations
- Platform can reach a maximum height of 8.1 m
- Can also be used for maintenance works on street lights, white washing and painting of buildings.

Cost of the machine	:	Rs.45,000/- (only the attachment)
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17. IMPROVED COCONUT TREE CLIMBER

Special features

- Lesser weight of the lower unit (3.0 kg) than existing model (6.0 kg)
- Lower unit is lifted simultaneously by leg and hand force for continuous operation
- Comfortably designed upper frame makes
- Harvesting capacity 45 trees/day (38 trees/day for existing model)
- Cost of harvesting - Rs. 3.50/tree (Rs. 4.50/tree for existing model)

Cost of the machine : Rs.2,300/-

18. AERIAL ACCESS HOIST FOR COCONUT HARVESTING

Special features

- First machine of its kind in tractor mounted form
- A full length chassis from front to rear of the tractor provides support
- The entire weight of the hoist and moments transmitted through the chassis to the stabilizers without transferring to the tractor chassis.
- Four trees can be accessed from a single position.
- The time required for locating unit and operating stabilizers - 1 min.
- The time required for positioning against a tree of 10 m height was 2 min.
- The positioning of the operator platform can be done by the operator himself

Lifting capacity	: 120 kg
Platform size	: 1000 x 700 x 1000 mm
Working height	: 16 m
Platform access height from the ground	: 15 m
Platform outreach	: 6 m
Rotation/slewing angle	: 360 degrees
Stabilizer	: Hydraulically operated 4 nos. to provide absolute stability
Power	: PTO of tractor, with exclusive hydraulic system and controls
Cost of unit	: Rs.7.60 lakhs

19. SUB SURFACE DRIP FERTIGATION SYSTEM FOR MECHANIZED SUGARCANE CULTIVATION

Details

- Trenches of 30 cm depth, 40 cm width at 180 cm spacing formation
- Planting of two budded setts @ 8 setts / m on either side of the furrow.
- Laying the inline laterals with a emitter spacing of 60 cm with 4 LPH drippers to a depth of 20-25 cm just below the setts and the drippers must face upwards.
- Irrigating the crop at 100% PE on alternate days for light soils and once in 3 days for heavy soils.
- RDF: 275:62.5:112.5 kg NPK/ha
- Weeding and earthing using mini tractor operated rotovator and ridger.
- Harvest at 10-11 months with cane harvester

Advantages

- Favour more ratoonability
- Irrigation water saving up to 40%
- Higher net returns

Economics

- Net return- Rs.1,06,956/ha with B:C ratio of 2.01

20. BIOCOLOUR FROM BEETROOT**Details**

- Prepared through spray drying at a temperature of 200 °c.
- Freshly prepared biocolour powder - dark reddish pink and soluble in water. Nutrients content 100g carbohydrate - 69.36, protein - 5.50, fat - 0.2, fiber - 0.28, ash - 4.8, total antioxidant - 1.636, tannin - 2.74 and others - 13.41.

Advantages

- Useful confectionery, bakery, Processed milk and fruit products.
- Non toxic, non hazardous and ecofriendly.

Economics

- Cost of production Rs. 560/- per kg

21. SOIL TEST CROP RESPONSE BASED INTEGRATED PLANT NUTRITION SYSTEM FOR AGRICULTURAL AND HORTICULTURAL CROPS (STCR-IPNS)**Details**

- Soil Test Crop Response based Integrated Plant Nutrition System (STCR-IPNS) for achieving desired yield on various soil types.
- STCR-IPNS recommendations along with the entire improved package of practices for various crops can be adopted on similar and allied soil types as well

S.No.	Crops	Soil types
1.	Rice	River alluvium (Noyyal & Manakkarai series), red non calcareous (Irugur series), black alluvium (Kalathur & Adanur series)
2.	Wheat (Hill & Plains)	Laterite (Ooty series) and mixed black calcareous (Periyanaickenpalayam series)
3.	Sorghum, Cotton	Periyanaickenpalayam and Irugur series
4.	Maize, Blackgram, Sunflower, Bendi, Ashwagandha	Periyanaickenpalayam series
5.	Ragi	Mixed black calcareous (Periyanaickenpalayam series) & red calcareous (Somayanur series)
6.	Greengram, Onion, Chilli, Turmeric	Irugur series
7.	Groundnut	Irugur, Somayanur and Ooty series
8.	Gingelly	Black alluvium (Adanur series)
9.	Sugarcane	Periyanaickenpalayam & Irugur series, red coastal alluvium (Gadillum series)
10.	Beetroot, Radish	Red calcareous (Palathurai series)
11.	Tapioca	Red calcareous (Thulukkanur series)

Advantages

- Increase in crop yield (agricultural crops: 20-25%; horticultural crops: 30-35%).
- Balanced fertilisation to crops
- Increase in fertilizer use efficiency.
- Least adverse effect on environment by minimizing nutrient losses
- Sustained soil health and crop yields

Economics

Agricultural Crops : Rs.3,000 - Rs.20,000/-

Horticultural Crops: Rs.25,000 - Rs.1,50,000/-

b. Newer initiatives taken in Directorates / Colleges / Stations / Departments - 2012

TRRI, Aduthurai

- Tamil Nadu rice Research institute has launched a Agro-meteorological information bulletin in the website <http://sites.google.com/a/tnau.ac.in/trri/ agro-advisory-unit>) on 7-1-2011. Mr.Y.E.A.Raj, Deputy Director General, Meteorology, Regional meteorological Centre, Chennai launched the bulletin.
- The bulletin provides agro-meteorological information to the farmers in 10 central districts of the state. This bulleting is helpful in carry out their day-to-day agricultural operational decisions.

HC & RI, Periyakulam

- In bitter gourd, a promising F1 MCH 7 is in advanced stage of evaluation
- Efforts are on to standardize mass multiplication protocol in palmyrah with DBT funds and callus induction was achieved by inoculating very tender inner part of apocolon shoot as explants in callus induction medium (MS +2,4-D 5 mg/l)

Dept. of Agrl. Microbiology, TNAU

- Developing antimicrobial compound from medicinal plants against plant diseases
- Development of newer co-inoculants for N and P nutrition and evaluation of their stability in nanoclay formulations
- Production of nutraceuticals by Lactic Acid Bacteria (LAB) for functional foods
- Bioconversion of organic wastes using *Termitomyces* for ethanol production
- Production of food grade pigment from filamentous fungi

HRS, Pechiparai

- Rubber planting has been done in an area of 15 acres with RRI 414, RRI 430 and RRI 105 varieties.
- 16 promising accessions have been introduced from RRI, Kottayam
- Intercropping studies is being ocnducted in rubber with pineapple, cinnamon, ginger, turnermic, red banana, amorphophallus and other cover crops
- Introduction of Mangosteen in an area of 25 cents
- High density planting in banana variety matti
- High density planting and canopy management in clove
- Evaluation of 25 accessions of ginger
- Strengthenign of minor fruits by addition of 30 new types
- Development of Mother plant nursery block in Nutmeg variety Vishwashree with a closer spacing of 1 x 1m.

- A medicinal plants block has been developed with *Annona muricata* and *Morinda citrifolia* plants
- 30 species of tree medicinal plants have been introduced.

Dept. of SS&AC, TNAU

- International Training on Analytical Laboratory Facility funded by Guelph University, Canada to the scientists of Kandahar University, Afghanistan from 14.2.2011 to 13.3.2011.
- National Seminar on soil health improvement for enhancing crop productivity during 17-18 March 2011
- First Dr. B. Ramamoorthy memorial lecture by Dr. M. Velayutham, Former Director, NBSS&LUP on “The law of optimum and soil test based fertilizer use for targeted yield of crops for sustainable agriculture” on 28.12.2011.

HSC&RI, Madurai

- HSC&RI in collaboration with Madurai District Collectorate, initiated “Uzhavar Unavagam” in Anna Nagar Uzhavar Santhai and promoting millet based food among the local residents.
- Millets food court has been opened on 30th Nov. 2011 to promote and popularize millet based food products.

AC & RI, Killikulam

- A new Nematology laboratory was established and micro-plot facilities were created to carry out research in Nematology

Dept. of Nano Science & Technology, TNAU

- National Seminar on Nanotechnology for enhancing food security organized during April 7-8, 2011
- Introduction of a new PG Degree programme on M. Tech (Ag.) in Nanotechnology
- Hosted National Dialogue on Applications of Nanotechnology as per the directions of ICAR during 11-13 November, 2011 for finalizing the strategies for one of the platforms identified by ICAR for inclusion in XII FYP.

Dept. of Environmental Sciences, TNAU

- A compost technology centre has been established with an area of 3000 square feet
- A solid waste management unit has been established to compost all the solid waste generated in the TNAU campus with a capacity to hold 5000 litres of leachate.
- Organized National Training on Bioremediation of heavy metal and hazardous waste contaminated soil and water ecosystem from 1-14 December 2011 which was sponsored by NAIP, ICAR, New Delhi.

AEC&RI, Kumulur

- Newly constructed “Food Processing laboratory” under Experiential Learning Scheme was installed with several food processing equipment during September, 2011 and made available for the student practicals.

- Irrigation Cafeteria was established with different types of irrigation system such as online dripper, inline dripper, micro-sprinkler, rain gun, surface irrigation and sub surface irrigation.

RRS, Vridhachalam

- Explained the TNAU groundnut rich booster in the AICRP groundnut scientists meet held at Udaipur on 22.4.2011 and suggested for trying it at different locations.

HRS, Kodaikanal

- Low chilling varieties of temperate fruits were collected from CITH, Sri Nagar, Dr.Y.S.Parmer University of Horticulture and Forestry, Solan and Punjab Agriculture University, Ludhiana for evaluation.
- Separate block for 'Nut crops' has been developed with commercial nut crops viz., walnut, macadamia nut, pecanut, almond etc.,
- Twenty six peas varieties were collected from all over India and evaluated for their performance under Kodaikanal condition. Khasi Nandhini, Arka Karthik, PSM-4, Welcome 2010 and VL-7 performed well.
- Commercial filler crops like Asperagus (*Asperagus densiflorus*), Baby eucalyptus (*Eucalyptus pulverulenta*), box wood (*Buxus sinica*), Podocarpus (*Podocarpus microphylla*), Golden rod (*Solidago virgaurea minuta*), Statice (*Limonium sinuatum*) and Gypsophilla (*Gypsophilla elegans*) were collected and planted for evaluation.
- Alstroemeria types (Red, yellow, dark pink, orange and pink) were collected and planted for evaluation.
- Nine species of Solanum viz., *Solanum khasianum*, *S. mauritianum*, *S. indicum*, *S. jasmonoides*, *S. torvum*, *S. pseudocapsicum*, *S. wendlandii*, *S. viarum* and *S. nigrum* were collected from different regions of Kodaikanal and other sources. The collected solanum sp. seeds were sown under both open and polyhouse condition for the assessment of resistant root stocks against pest and diseases.
- For the introduction of grape in temperate climate, the Red Globe variety was grafted on Dogridge. The performances of the grafted plants were well under poly house condition.
- Five varieties of strawberry were evaluated during January, 2010 to February 2011 under open condition. Among the five varieties, Camerosa and sweet Charlie performed well with an average yield of 500g/plant/year and 250g/plant/year respectively. Trials have been initiated to evaluate the strawberry varieties viz., Camerosa, sweet Charlie and winter dawn under different production system (Mount, grow bag and tray system of planting).
- Block wise GIS map has been prepared for nutritional status and nematode infestation at HRS, Kodaikanal.
- Integrated Nutrient Management study in potato was conducted with different organic and inorganic nutrients. The treatment FYM + vermicompost + Neem cake (each 1/3rd of recommended dose) and 3% Panchakavya recorded the highest yield.
- Rose garden was established with 100 nos. of hybrid tea, floribunda, miniature and climbing rose types.
- Trainings on Bee keeping techniques, Mushroom Production Technology, Vermicompost production techniques and Biorational pest management in horticultural crops were conducted benefitting 163 participants

Dept. of RS & GIS, TNAU

- A new web page was launched for the department of Remote Sensing and GIS at the following URL: <http://sites.tnau.ac.in/rsgis/> under the TNAU Sites. The activities of the department including research, courses handled along with lecture notes, services provided by department, faculty details, and publications in English and Tamil on “Length of Growing Period based Cropping Pattern for different Agro-ecological Zones of Tamil Nadu” have been uploaded for the benefit of students, researchers and farmers. (Remote Sensing)

Agenda No.5

OTHER ACTIVITIES UNDERTAKEN

1. Trainings / field days / demonstrations organised at different centres

Sl.No.	Title	Sponsor	Duration / No. of participants & Budget
	TRRI, Aduthurai		
1.	Quality seed production of pulses through seed village concept at Narasinganpettai, Thiruvudaimaruthur taluk	NABARD	19.1.2011
2.	Rajarajan 1000 method of rice cultivation with Azolla application in rice to mitigate the ill-effects of global warming and climate change to the rice production system at Thirubhuvanam, Thiruvudaimaruthur taluk	ClimaRice	27.1.2011
3.	3 rd AGRI EXPO 2011	Dinamalar	28 th -31 st Jan. 2011 (15000 farmers)
4.	Field day cum special training at Manalur village of Thirupanandal block	Clima Rice	3 rd February 2011 (30 farmers)
5.	Quality seed production in rice fallow pulses through seed village concept at Keezhamanthur, Thiruppanandal block	NABARD	22.02.2011, 11.3.2011
6.	Awareness programme - Capacity Building for horticultural crops cultivation	TRRI, Aduthurai	10-03-2011 and 11-3-2011 (30 women self help groups)
7.	Quality seed production in rice fallow pulses through seed village concept at Narasinampettai of Thiruvudaimaruthur taluk	NABARD	18.03.2011
8.	Training cum awareness programme on "Protection of Plant Varieties and Farmers right"	PPV&FRA, New Delhi	15.03.2011 (110 participants)
9.	Farmers- Scientist Interactive session	All India Radio, Trichy	31.05.2011 (50 farmers)
10.	Five trainings to farmers on exposure visit from Gummidipoondi, Minjure and Ellapuram	TN-IAWARM	14 to 30 June 11, 5 days (300 farmers)
11.	Awareness programme on "Green manuring"	Climarice	5.7.2011
12.	Second one day (II phase) training on Quality Seed Production in irrigated Pulses at Thirumandangudi	Govt. of TN	07, 08.07.2011 (100 farmers)
13.	State level Exhibition for the benefit of farmers from Cauvery delta Zone	ATMA	
14.	First one day training (I Phase) on "Quality Seed Production of rice" – TRRI, Aduthurai at Pudhur village, Muttakkudi village and Thirumandankudi village	NABARD	9, 10 & 13. 8.2011

15.	Awareness programme on newly released ADT(R) 49 rice variety - Thirubuvanam Clima village		8.8.2011
16.	One day National level capacity building training programme on, "System of Rice Intensification (SRI)" –12 Technical Officers	Bayer BioScience Private Limited	28.9.2011
17.	A refresher course for the 30 Seed Certification Officers at TRRI, Aduthurai.		18 & 19.8.2011
18.	An awareness programme on Climate change and Rice production at Manalur Clima village		23.8.2011
19.	One day training on SRI method of rice cultivation and rice follow pulses (100 farmers)	TN- IAMWARM project	
20.	Two days training on Quality seed production on pulse, rice and groundnut at TRRI, Aduthurai		25 & 26.11.2011
	RRS, Vridhachalam		
21.	Training cum demonstration "TNAU boosters and tonics utilization in different crops"	NABARD	Rs.0.93 lakhs (three batches of famers - 30 participants / batch)
	ARS, Kovilpatti		
	National Initiative on Climate Resilient Agriculture project launch at Nakkalamuthanpatti village	CRIDA, Hyderabad	30.8.2011
	SS&AC, TNAU		
22.	International Training on "Analytical Laboratory Facility"	Guelph University Canada	14.02.2011 - 13.03.2011
23.	National Seminar on Soil health improvement for enhancing crop productivity		17-18, March,2011
24.	The first Dr.B.Ramamoorthy memorial lecture was organised – "The Law of optimum and soil test based fertilizer use for targeted yield of crops for sustainable agriculture"		28.12.2011
	HRS, Thadiyankudisai		
25.	Training on "Bio-priming on hill banana"	GOI-DBT	15.2.2011 (20 women farmers)
26.	Training on "Modern cultivation practices on the spices and aromatic plants of the sub tropical areas"	GOI-NHM	4.3.2011 (126 planters of lower pulney hills)
27.	Training to the planters of lower pulney hills on "Farm mechanization"		19.12.2011 to 26.12.2011
	Environmental Science, TNAU		
28.	National training on bioremediation of heavy metal and Hazardours waste contaminated soil and water ecosystem	NAIP, ICAR, New Delhi	14.12.2011
	Special Officer (Seeds)		
29.	Seed health testing	NSRTC, Varanasi	03.01.2011 to 07.01.2011 90,000
30.	Awareness programme on PPV&FRA	PPV&FRA, Delhi	19.03.2011 50,000

31.	Capacity building for seed certification officials of Orissa state seed and organic products certification agency on seed certification, testing and law enforcement	OSSOPCA, Bhubaneswar	25.07.2011 to 29.07.2011 1,11,550
32.	Popularization of Hybrid Rice Seed Production Technologies for Enhanced Income generation to Farmers	NABARD, Hyderabad	10.08.2011 to 12.08.2011 51,575
33.	Molecular characterization of GMOs and its purity testing	NSRTC, Varanasi	01.12.2011 to 21.12.2011 1,97,000
	Dept. of Microbiology, TNAU		
	CAFT on current perspectives in molecular microbial diversity	ICAR	3-23 Feb 2011, 20 participants

2. Exposure of students at TNAU Colleges / Stations

Sl.No.	Name of school / college	No. of students	Date of visit
	TRRI, Aduthurai		
1.	Govt. High school, Thiruvavadanai, Thanjavur	100 tenth standard students	27 & 28.6.2011
2.	Annamalai University, Chidambaram	45 final year B.Sc. (Ag.)	22.11.2011

4. Patents applied

Sl. No.	Title	Application No. & Date
1	Machine for pelleting of seeds - Dr.R.Umarani, Dr.A.S.Ponnuswamy, Dr.N.Natarajan	233 / CHE / 2011 dt. 25.01.2011
2	Seed pelleting mixture composition and seed pelleting protocol- Dr.R.Umarani, Dr.A.S.Ponnuswamy and Dr.N.Natarajan	234 / CHE / 2011 dt. 25.01.2011
3.	Process for separation of aminomass, minerals and chitin from silkworm pupae biowaste	Application filed by Dept. of Agrl. Microbiology, TNAU
4.	Spice wine	
5.	Process of extracting yellow pigment from <i>Thermomyces</i> sp.	

List of MoUs signed between TNAU and other academic institutions and private companies from January 2011 to December 2011

Sl. No.	Name of the institutions / companies / firms with which MoU signed	Name of the project / study / scheme etc.	PI incharge of the project	Duration (with date of commencement)	Budget (Rs. in lakhs)
1.	M/s. JACOBI Carbons India Private Limited, Coimbatore.	Study of waste utilization possibility in the charcoal production process	Dr.P. Venkatachalam Professor and Head	11.11.2011	Budget yet to be received
2.	GOI-DBT	Entrepreneurship Development for Rural Unemployed Youth in Thoothukudi Dist. of Tamil Nadu through Sustainable Milky Mushroom	Dr. M.Jayasekhar, Prof.(Pl. Pathology)	3 years from 2012	14.44

		Production Technology			
3.	M/s Nutricon Animal Health Care, Kancheepuram	TNAU Mater Trap – A multipurpose Device for Insects and Rodents (TNAU Patent No. 201482)	Dr.P.M.M. David Professor (Agrl. Ento.)	12 Year from 02.11.2010	1.00
4.	Department of Biotechnology, New Delhi	Development of kairomone based IPM module for the management of lepidopteran pests of Vegetable Crops	Dr.R.K.Murali Baskaran, Professor and Head (Agrl. Entomology),	August 2011 to July 2014	11.49
5.	Dept. of Scientific and Industrial Research, New Delhi)	Empowerment of landless SC/ST women through mushroom cultivation and value addition of mushrooms	Dr. N. Revathy, Asst. Prof. (Path.)	June 2011 to May 2013	9.83
6.	Auomira Energy Company Private Limited, Chennai	Promotion and Popularization of Renewable Energy in Tamil Nadu in Association with Auomira Bio-Energy	Dr.K.T.Parthiban	5 years 2011-2016 (01.09.2011)	25.01
7.	Special Management of Agarwood Research and Development (SMARD) Bandishola Coonoor	Screening and Evaluation of Agarwood (Aquilaria spp.) in Tamil Nadu for Agar Production	Dr.K.T.Parthiban	10 Years 2012-2022 (01.04.2012)	28.92
8.	ICRISAT	Improving farmers lively hoods and food security through enhanced legume productivity in India and Myanmar	Dr.K.Ganesamurthy	April 2011 – March 2013	6.00
9.	ICRISAT	Development and promotion of promising varieties /lines with high yield and high oil content with enhanced O/L ratio for enhancing production and quality of groundnut oil in drought prone environments to boost the income of small and marginal groundnut farmers in India	Dr.K.Ganesamurthy	April 2011 – March 2015	49.50
10.	ICRISAT	Improving the livelihoods of smallholder farmers in drought prone areas of sub-	Dr. K.Ganesamurthy	Sept. 2011 – August 2014	13.02

		saharan and South Asia through enhanced grain legume production and productivity			
11.	INCOTEC, Ahmedabad	Evaluation of pelleting / encrusting technology on solanaceous vegetables and onion and determination for the efficacy of Incotec activities under optimal conditions in 4 major field crops (Hybrid rice, maize, cotton and soybean)	Dr.V.Manonmani Assoc. Prof. (SST)	1 Year (30.06.2011) 2011-12	5.00
12.	DBT, GOI, New Delhi	Impact studies on the effect of Bt cotton on the rhizosphere microorganisms	Dr. R. Sridar	Dec 2011 to Nov 2014	19.82
13.	M/s. JKAL, Hyderabad	Genetic engineering of major crops for insect resistance	Dr. V. Udayasuriyan	May 2011 to April 2014	10.00
14.	M/s. Rasi Seeds Pvt. Ltd, Attur	Genetic engineering of cotton for leaf curl virus disease resistance through RNAi technology	Dr. K.K.Kumar	Jan 2012 to Dec 2014	20.00
15.	IRRI, Philippines	Proteomic analysis of leaves and spikelets of two contrasting rice genotypes exposed to high night temperature	Dr.M.Raveendran	Dec 2011 to Dec 2012	7.50
16.	NOVOD Board, Gurgaon, Haryana.	Collection, Evaluation and Genetic Improvement of Mahua for High Yield, Oil Content as well as Superior Oil Quality	Dr. S. Manivasakan, Asst. Professor (For.)	2011-2014 (3 Years) 01.04.2011	11.026
17.	M/s The FACT, Udyogmandal, Kerala	Evaluation of FACTMIX for major crops of Tamil Nadu	Dr.R.K.Kaleeswari Assoc. Prof. (SS&AC)	One year Feb 2011 to Jan.2012	11.74
18.	University Grants Commission, New Delhi	Carbon sequestration potential of Rice ecosystem	Dr.R.K.Kaleeswari Assoc. Prof. (SS&AC)	Three years Feb 2011 to Jan.2014	7.84
19.	Department of Science and Technology (DST), New Delhi	Demonstration of yield enhancement in maize and rice through Nutriseed Pack technique and designing prototype machineries for	Dr.K.Arulmozhiselvan Professor (SS&AC)	Two years April 2011 to Mar.2013	30.91

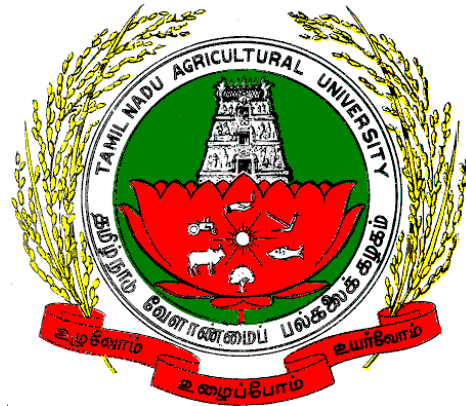
		industrial production of Nutrised Packs			
20.	M/s Byotrol Technology Ltd, Manchester UK	Evaluation of Byotrol for the efficacy in preventing Post harvest spoilage of fruits and vegetables	Dr.K.Kumar Professor and Head, Agrl Microbiology	Ten months March 2011 to Dec. 2011	1.00
21.	DST / TNSCST, New Delhi	Isolation and extraction of antimicrobial compounds from termitomyces and evaluation of its pharmaceutical application	Dr.V.Gomathi Assoc. Professor Agrl. Microbiology	Three years April 2011 to March 2014	21.99
22.	T.Stanes & Co. Ltd, Coimbatore	Screening, isolation and evaluation of secondary metabolite producing <i>Streptomyces</i> against spider mite <i>Tetranychus urticae</i> on okra	Dr. P. Marimuthu Professor, Agrl. Microbiology	Three years May 2011 to April 2014	11.22
23.	Navajbai Ratan Tata Tust, Mumbai	Development of micro enterprise for Arbuscular Mycorrhizal Biofertilizer Production at villages through empowering Rural Women	Dr .K.Kumutha Associate Professor Agrl. Microbiology	Three years July 2011 to June 2014	19.32
24.	Department of Bio-Technology, Ministry of Science and Technology, Government of India, New Delhi.	Development of process for microbial delignification of lignocellulosic biomass/waste for fuel ethanol production	Dr.U.Sivakumar Associate Professor, Agrl. Microbiology	Three years Oct. 2011 to Sept. 2014	61.9
25.	GOI – UGC, New Delhi	Bioprospecting Marine Actinomycetes for Therapeutic Enzymes	Dr.S.Mahimairaja Professor Envirn. Sciences	Three years Feb 2011 to January 2014	8.45
26.	GOI – UGC, New Delhi	Characterization of Wetland Ecosystem of Coimbatore Dist. and Developing Management Strategies for sustainable soil health	Dr.A.Bharani Asst.Professor, Envirn. Sciences	Three years Feb 2011 to January 2014	
27.	M/s. Pioneer Jellice Pvt Ltd, Cuddalore	Bio-Processing of Gelatin Industry Solid Waste for Value Added Organic Manure Production	Dr. P. Doraisamy Professor and Head Envirn. Sciences	Two Years June 2011 to May 2013	10.2

28.	National Parks Board, Singapore Botanic Gardens Singapore	Assessment and management of soil quality across Singapore streetscape	Dr.S.Mahimairaja Professor Envirn. Sciences	One Year May 2011 to May 2012	7.15
29.	Government of Tamil Nadu Agriculture (AU) Department Chennai	Integrated remediation for improving and managing polluted soils and waters in Tirupur, Coimbatore, Erode, and Karur Districts	Dr.S.Mahimairaja Professor Envirn. Sciences	Three Months Oct . 2011 to Dec 2011	26.4
30.	Bannari Amman Sugars Ltd., Erode	Studies on Ecomonitoring of the Land Application of Biomethanated Distillery Spentwash on Crop Production, Soil Health & Sustainable Environment	Dr.P.Thangavel, Professor (Ens) Envirn. Sciences	Three Years Oct.2011 to Sept.2014	10.5
31.	M/s Synthite Industries Ltd. Marudur, Karamadai, Coimbatore District	Eco-monitoring the land application of Effluent Treatment Plant (ETP) water of Floral Extraction Industry on Soil, Crop and Water	Dr. K. Valliappan, Professor, Envirn. Sciences	Two years Oct. 2011 to Sept. 2013	11.3
32.	Cadbury India Ltd., Mumbai	Strategic Environmental Assessment of Cocoa Cultivation in Tamil Nadu	Dr. M. Maheswari, Associate Professor Envirn. Sciences	Five years November 2011 to October, 2016	49.2
33.	Navajbai Ratan Tata Tust, Mumbai	Promoting Azolla cultivation among small and tribal land less farmers and developing a business model between Azolla growers and end users to assure sustainable income	Dr.A.Lakshmanan Assoc.Prof. (Micro) Dept. of NST	Two years April 2011 to March 2013	27.8
34.	DST, New Delhi	Fabrication of Nano agricultural inputs for promoting groundnut productivity and environmental safety	Dr. K.S.Surbamanian Professor and Head Nanotechnology	Three years 2011 to 2014.	64.2
35.	M/s The FACT, Udyogmandal, Kerala	Evaluation of FACTMIX for major crops of Tamil Nadu	Dr.R.K.Kaleeswari Assoc. Prof. (SS&AC)	One year Feb 2011 to Jan.2012	11.74
36.	National Parks Board Singapore Botanic Gardens, Singapore	Assessment and management of soil quality across Singapore streetscape	Dr.S.Mahimairaja Professor Envirn. Sciences	One Year May 2011 to May 2012	7.15
37.	T.Stanes & Co. Ltd, Coimbatore	Screening, isolation and evaluation of	Dr.P.Marimuthu Professor,	Three years May 2011 to	11.22

		secondary metabolite producing <i>Streptomyces</i> against spider mite <i>Tetranychus urticae</i> on okra	Agrl. Microbiology	April 2014	
38.	Navajbai Ratan Tata Tust, Mumbai	Development of micro enterprise for Arbuscular Mycorrhizal Biofertilizer Production at villages through empowering Rural Women	Dr .K.Kumutha Associate Professor Agrl. Microbiology	Three years July 2011 to June 2014	19.32
39.	M/s. Pioneer Jellice Pvt Ltd, Cuddalore	Bio-Processing of Gelatin Industry Solid Waste for Value Added Organic Manure Production	Dr. P. Doraisamy Professor and Head Environ. Sciences	Two Years June 2011 to May 2013	10.27
40.	Bannari Amman Sugars Ltd.,(Distillery division), Erode	Studies on Ecomonitoring of the Land Application of Biomethanated Distillery Spentwash on Crop Production, Soil Health & Sustainable Environment	Dr.P.Thangavel, Professor (Ens) Environ. Sciences	Three Years Oct.2011 to Sept.2014	10.59
41.	M/s Synthite Industries Ltd. Marudur, Karamadai, Coimbatore District	Eco-monitoring the land application of Effluent Treatment Plant (ETP) water of Floral Extraction Industry on Soil, Crop and Water	Dr. K. Valliappan, Professor, Environ. Sciences	Two years Oct. 2011 to Sept. 2013	11.36
42.	Cadbury India Ltd., Mumbai	Strategic Environmental Assessment of Cocoa Cultivation in Tamil Nadu	Dr. M. Maheswari, Assoc. Prof. (Ens), Environ. Sciences	Five years Nov. 2011 to October, 2016	49.28
43.	Navajbai Ratan Tata Tust, Mumbai	Promoting Azolla cultivation among small and tribal land less farmers and developing a business model between Azolla growers and end users to assure sustainable income	Dr.A.Lakshmanan Assoc.Prof. (Micro) Dept. of NST	Two years April 2011 to March 2013	27.83

45th RESEARCH COUNCIL MEETING

5th March, 2012



AGENDA NOTES

**DIRECTORATE OF RESEARCH
TAMILNADU AGRICULTURAL UNIVERSITY
COIMBATORE – 641 003**

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