AGRICULTURE DEPARTMENT

POLICY NOTE

Demand No. 5 - AGRICULTURE

2015 - 2016

Thiru R.Vaithilingam

Minister for Housing, Urban Development and Agriculture

Policy Note 2015-2016

INDEX

4. AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION EDUCATION

Tamil Nadu Agricultural University is a pioneer institute in Agricultural Education, Research and Extension Education. It's genesis is in establishment of an Agricultural School at Saidapet, Chennai, as early as 1868. The Saidapet Agricultural School was shifted to Coimbatore as Madras Agricultural College in the year 1906 and B.Sc. Agriculture course was started in the year 1920. In 1971, the college was elevated to university status as Tamil Nadu Agricultural University. In this century old campus, which started with 8 students, at present there are more than 4000 students. Many foreign students from USA, Iran, Egypt, Sudan, Nepal and Ethiopia prefer to undergo studies at TNAU.

During the year 2014-15, Tamil Nadu Agricultural University was conferred with two prestigious awards namely; 1) 'Overall Excellence Award' from Federation of Indian Chamber of Commerce and Industry (FICCI) on November 13, 2014 at New Delhi and 2) 'Agri-Business Idol Camp Award' for Agri Business Directorate of TNAU on 18-19, May 2014 by the Indian Council of Agricultural Research (ICAR), Government of India.

1.0 Agricultural Education

There are 15 constituent colleges, and eight constituent diploma institutes under TNAU.

Tamil Nadu Agricultural University currently offers 13 Under Graduate, 35 Master degree, 26 Regular Doctoral degree, four Integrated Doctoral and 27 Part time Ph.D programmes.

During 2014-15, 1352 students in Under graduate, 457 in Postgraduate and 138 in Doctoral programmes are admitted. In the year 2013-2014, 1141 Under graduate students, 355 Postgraduate students and 137 students in Doctoral programmes passed out. Under the Dual degree programme students undergo studies at Dalhousie University, Canada. So far, 22 students have passed out with dual degree.

Tamil Nadu Agricultural University also runs correspondence courses through its Directorate of Open and Distance Learning. At present, five postgraduate diploma, three postgraduate degree, one bachelor degree programmes and 16 Certificate courses are being offered by the directorate.

The University (TNAU) provides career counselling to its students through Directorate of Students Welfare (DSW). It also has an "Overseas Employment Unit" to facilitate graduates to get placement in organisations abroad. A state-of-the-art 'Communication Laboratory' is also available to improve the soft skills of the students.

In the year 2014-15, Three Agricultural College and Research Institutes with a budget estimate of Rs.150.00 crore were started at Vazhavachanur in Tiruvannamalai district, Eachankottai in Thanjavur district and Kudumiyanmalai in Pudukkottai district. A Skill Development Centre at the Agricultural Engineering College and Research Institute, Kumulur, Tiruchirappalli district, has also been established.

Hon'ble Chief Minister of Tamil Nadu on 27.06.2014, inaugurated 12 New Buildings (Rs.5.74 crore) for the University. These are; New Ladies hostel, Post Graduate Lecture hall in First Floor at Crop Physiology department, building for Department of Vegetables, Class room and Laboratory at the Department of Agro Climate Research Centre at Tamil Nadu Agricultural University, Coimbatore, Administrative building for Krishi Vigyan Kendra,

Kanyakumari and Ramanathapuram, New Office building at Sugarcane Research station, Cuddalore, New Office building at Vegetable Research station, Palur, Cuddalore District, Lecture halls at Agricultural Engineering College and Research Institute, Kumulur, Farmers hostel at National Pulses Research Center Vamban in Pudukkottai District and Lecture Hall and examination hall at Regional Research Station, Ambasamudram, Tirunelveli District. In the same function foundation stones were laid for nine new buildings (Rs.12.03 crore) at various research stations of Tamil Nadu Agricultural University. Also, the New Administrative building and Girls' Hostel at the Horticultural College and Research Institute for Women, Tiruchirappalli with an estimated cost of Rs.14.55 crore was inaugurated.

2.0. Agricultural Research

There are 38 Agricultural research stations located across the State for undertaking location specific and crop specific research.

The University so far has released 788 new crop varieties, 158 new agricultural implements and 1523 management technologies. Also, 637 research articles were published in the past one year in reputed

international and national journals for the benefit of different stakeholders including the farming community.

The following six crop varieties and one coconut hybrid were released during the year 2014-15.

1. Rice - TKM 13

Rice variety TKM 13, has medium slender fine grain. It matures in 130 days which is 7-10 days earlier than the popular BPT 5204 variety. The average grain yield of this variety is 5938 kg/ha which is 10.1% yield increase over BPT 5204. This variety is moderately resistant to leaf folder, stem borer, green leaf hopper, blast, rice tungro disease, brown spot and sheath rot. It has high milling (75.5%) and head rice yield (71.7%), on par with the check variety BPT 5204.

2. Rice - CR 1009 with Sub 1

This is an improved version of CR 1009 with tolerance to submergence in water for up to 15 days immediately after transplantation. This variety has given a mean grain yield of 5759 kg/ha in 155 days with moderate resistance to brown spot, blast, brown plant hopper (BPH) and white backed plant hopper (WBPH). This long duration variety is suitable

for cultivation in Samba season in long duration rice cultivating tracts of the State which are prone to flooding. This variety is recommended as an alternate to CR 1009.

3. Rice - MDU 6

This variety matures in 110-115 days and yields 6118 kg/ha in irrigated condition. It has long slender rice with high linear elongation ratio on cooking. This variety is suitable for cultivation as transplanted rice throughout the State except the Nilgiris district.

4. Sorghum K 12

This variety is a drought tolerant dual purpose sorghum variety. It matures in 95 days. Yield 3123 kg/ha of pearly white grains and 11.9 t/ha of dry fodder. It is a photo insensitive variety and moderately resistant to shoot fly, stem borer and resistant to downy mildew. This variety is suitable for cultivation in southern districts of Tamil Nadu and also suitable for cultivation in summer irrigated areas of Tenkasi region.

5. Wheat CO W 3

This is a high yielding wheat variety suitable for southern hill zones. This variety recorded 12 per cent higher yield (4076 kg/ha) over the check variety CO(W)-1 (3641 kg/ha).

It possesses high degree of resistance to stem, leaf and stripe rust disease. It is the third wheat variety released by the Tamil Nadu Agricultural University.

6. Cluster bean MDU 1

This variety of cluster beans matures in 90-100 days and has more number of fruits / plant (150 - 175 fruits) compared to prevailing variety. Fruits are rich in fibre content (4.5 g/100 g of the fruit) and the plants are more tolerant to powdery mildew disease.

7. Coconut hybrid VPM 5

This is the first hybrid of Tall x Tall type to be released in the country. This comes to bearing in 48-50 months with an economic life up to 60 years. On an average, it yields 161 nuts/tree/year and 24.12 kg of copra / palm / year.

Following two agricultural implements were also released for the benefit of farming community.

1. Tractor drawn turmeric rhizome planter

This is a new planter unit and can be operated by 35-45 hp tractor and can plant three rows at a time. Row spacing is adjustable and can cover 1.2 ha per day. Tentative Cost of the unit is Rs.50,000/-.

2. Hydraulic brake for two wheel tractor trailer system

The two wheel tipping trailers are not provided with any separate brake arrangement. When brakes are applied to tractor with a loaded two wheel tipping trailer, the tractor first stops and then the trailer rams into the tractor due to inertia. Trailer braking and tipping control systems is designed for smoother braking of the two wheel trailer attachment. The equipment cost is Rs.41,000/-

During the year, 2015-16, the following six new centres of excellence in Tamil Nadu Agricultural University will be established at a total cost of Rs.22.96 crore:

i. Centre of Excellence in Molecular Breeding at Coimbatore.

ii. Centre of Excellence in Dry farming at Dry land Agricultural Research Station, Chettinad.

iii. Centre of Excellence for Soil health at Agricultural College and Research Institute, Tiruchirappalli.

iv. Centre of Innovation at Agricultural College and Research Institute, Madurai.

v. Farm Women Knowledge Centre at Horticultural College and Research Institute for Women at Tiruchirappalli.

vi. Centre of Excellence for Oil Palm Research to augment edible oil Production at Agricultural Research Station, Pattukottai.

Land is being acquired for establishing a new Citrus Research Station at Sankaran Koil taluk of Thirunelveli district with a estimated cost of Rs.4 crore.

During the year 2014-15, Food Processing Research and Training Institute was also established at Chettinad in Sivagangai District.

3.0. Agricultural Extension Education

The Directorate of Extension Education functions with the vision to make extension system 'Farmer driven' and 'Market led' for augmenting production, productivity and income of the farming community. It also lays importance to networking of extension and development systems through ICT-mode.

The following units are functioning under this Directorate:

3.1. Krishi Vigyan Kendras (KVK)

Farm Knowledge Centres were established in 1974, with the primary objective of transferring agricultural technology from Lab to Land. Later they were named as Krishi Vigyan Kendras. The activities of the KVK include assessment, refinement and transfer of technology to farmers. It also bridges the gap between research institutions and the farmers at the field level.

Besides contribution to agricultural research, KVKs also act as vocational training centres. There are 28 KVKs in the State, 14 KVKs are run by TNAU and 14 are run by NGOs.

Transfer of Technology programmes are also taken up through the 14 KVKs. Totally, 774 On Farm Testing (OFT), 348 Front Line Demonstrations (FLD) of newly released varieties and technologies were conducted by KVKs, besides, conduct of 396 training programmes for extension officers, rural youth and Self Help Groups (SHGs), in the year 2014-15.

KVKs train progressive farmers for further dissemination of agro techniques to other

farmers. It creates farmers database under the following categories.

1. KVK recognised Agri-preneurs - The farmers who have the entrepreneurship qualities are identified and facilitated for agri-business development, establishment and marketing.

2. KVK recognized Farmer teacher - Farmers with experience and communication skills are identified and used as Para - Agri Team to transfer skill and knowledge to other farmers in the district.

3. KVK recognized Seed Producers - farmers are trained by KVK to produce seeds under the supervision of the KVK scientists and ultimately become seed producers on their own.

4. KVK recognised Satellite IFS Model farmers – IFS model farmers documentation has been done to enable the farmers willing to adopt "Integrated Farming System" to contact them for getting advice.

3.2. Information and Communication Technology (ICT) based e- extension

This is an era of e-transformation. Tamil Nadu Agricultural University also uses this platform for Transfer of Technology (TOT) through its following units.

Agritech portal (http://agritech.tnau.ac.in) holds around seven lakh pages of content on agriculture and horticulture in Tamil and English. During the year 2014-15, the portal recorded 14.36 lakh hits. Portal receives about 4000 visitors daily.

Educational Media Centre (EMC) coordinates video documentation of important programmes and events of the University. During the year 2014-15, 557 video programmes were produced and 252 programmes were telecast through Doordarshan Kendra, Chennai.

Community Radio Station at TNAU, Coimbatore benefits the farming community living within 18 km radius by broadcasting farm related information. It is functioning as 'Velaan Palkalaikazhaga Vivasaayee FM' at 107.4 MHz frequency. Daily broadcast of three hours is made between 10.00 and 13.00 hours and repeated between 14.00 and 17.00 hours.

The FM also broadcasts information on weather, market prices, technical information by scientists. During the year 2014-15, 323 recorded programmes were broadcast and 367 programmes were uploaded in http://agritech.tnau.ac.in/comm-e-radio.html website for the benefit of the farmers. It reaches 10,000 farm families residing in 22

villages around Tamil Nadu Agricultural University campus at Coimbatore.

Kisan Call Centre (KCC) provides services to farmers through a toll free number 1551 or 1800-180-1551. The caller can interact in their local language with the experts. This Centre functions on all working days between 7.00 am. and 10.00 pm and receives on an average 790 calls per day.

'Uzhavarin Valarum Velanmai' a monthly Tamil magazine of Tamil Nadu Agricultural University.

Agro Climate Research Centre (ACRC) does Medium range Weather forecasting based on weather parameters received from the Automatic Weather Stations. During the year 2014-15, weather related messages were sent to 19,44,562 registered farmers.

Southern Regional Agricultural Fair 2015 was conducted at the University campus at Coimbatore from 06.01.2015 to 09.01.2015. Farmers from the five Southern States viz., Tamil Nadu, Kerala, Andhra Pradesh, Telangana and Karnataka and two Union territories namely; Puducherry and Andaman and Nicobar islands, participated.

Regional Exhibition with a theme of 'Food processing and value addition of cereals,

millets, pulses, fruits and vegetables' was conducted during 23 - 25 January 2015 at Agricultural College and Research Institute, Madurai in collaboration with the Department of Agricultural Marketing and Confederation of Indian Industries. Farmers from the districts across the State participated in this exhibition.

3.3. TNAU - Information and Training Centre, Chennai

It is a training Centre of TNAU located in Chennai. During the year 2014-15, 91 training programmes were conducted benefitting 3406 participants on varied topics such as; kitchen gardening, fruits and vegetables preservation, value addition in millets and spices, roof gardening, maintenance of indoor plants and mushroom cultivation. During the year 2015-16 various training programmes are being conducted at TNAU.

4.0. Production and distribution of quality seeds

Tamil Nadu Agricultural University also grows and distributes various classes of seeds such as; breeder seeds, foundation seeds and truthful labelled seeds (TFL) of 115 varieties of principal crops.

During the year 2014-15, 1358 quintals of breeder seeds, 4034 quintals of foundation

seeds, 11307 quintals of certified / truthful labelled (TFL) seeds and 27,69,350 numbers of planting material were produced and distributed.

The seed production and distribution programme will be continued during 2015-16.

Automatic Seed Vending Machine was installed at Tamil Nadu Agricultural University, Coimbatore to cater to the flower and vegetable seed requirements of small growers and kitchen gardeners. So far, 25000 seed packets valued at Rs.2.50 lakh have been distributed through the machine. Automatic Seed Vending Machines have also been installed in nine more locations namely; Trichy, Pudukkottai, Madurai, Theni, Thirunelveli, Salem, Thiruvannamalai and in two locations in Chennai, during the year 2014-15.

5.0. Agri-Business Development

The Directorate of Agri Business Development looks after incubation of agriculture based start-up companies and commercialization of technologies developed by the University. About 100 incubatees were enrolled with this Directorate and 20 technologies have been commercialized. These includes technologies relating to Coconut tonic, Panchagavya, Egg removing device, SRI power weeder, Production of Pseudomonas and

Trichoderma etc. During the year 2014-15, three technologies namely; (1) Insect repellent for stored rice, (2) Phosphorus solubilising bacterial solution and (3) Insect egg remover in pulses were commercialized.

The University has produced and distributed 10591 litres of coconut tonic, 2009 litres of pulse wonder, 1233 litres groundnut rich, 475 litres Maize max, 607 litres cotton plus, 446 litres sugarcane booster, 8442 kg Pseudomonas fluorescence, 5211 kg Trichoderma viride and 7528 mushroom mother spawn bottles to the farmers.

Food Processing and Value addition

The Post Harvest Technology Centre in TNAU offers trainings to progressive entrepreneurs, rural youth and women on value addition and post harvest management of farm produce particularly vegetables and fruits. During the year 2014-15, 27 training programmes were offered to 594 farmers.

The training programme will be continued during the year 2015-16.

6.0. Price forecast and Market intelligence

Tamil Nadu Agricultural University renders Price forecasting and Market intelligence services through its Domestic and Export Market Intelligence Cell (DEMIC). It forecasts local

market prices of agricultural produces before sowing and also before the harvest. The information is published in news papers, broadcast through radio and television. Price forecasting is done by the centre for 24 agricultural crops like; Maize, Sorghum, Ragi, Cumbu, Blackgram, Bengalgram, Greengram, Groundnut, Gingelly, Sunflower, Coconut, Copra, Cotton, Potato, Carrot, Beetroot, Tomato, Bhendi, Brinjal, Small onion, Turmeric, Coriander, Red chillies, Banana (Nendran & Poovan). The price forecast has been proven to have 95% reliability.

Technology and Market Advisories are also sent through mobile phones by the e-Extension Centre, through 'm-kissan portal'. During the year 2014-15, 6,45,02,766 SMS relating to 9000 pieces of market information were sent to the farmers. Advisories are continuously given to farmers.

Trade and Intellectual Property Protection department of the university has filed for patenting of (i) Cleaner for onion seed, (ii) Pre-thresher, Thresher and Pre-cleaner for onion umbels and (iii) Herbal soup dispensing machine during the year 2014-15.

5. SEED CERTIFICATION & ORGANIC CERTIFICATION

Use of certified seeds of good quality is essential for higher agricultural productivity. This department is pioneer at national level, in implementation of quality control programmes in seed production and distribution.

Following activities are carried out by this Department.

- Certification of seeds of notified crop varieties, in accordance with the Indian Minimum Seed Certification Standards (IMSCS).
- Enforcement of seed legislations for ensuring quality seed distribution.
- Seed testing in notified seed testing laboratories.
- Imparting training to persons involved in the seed industry on seed legislations and certified seed production.
- Implementation of Organic Certification programme as per the standards of National Programme for Organic Production (NPOP).

This department has also the unique distinction of having the maximum number of (33) notified Seed Testing Laboratories out of