



AGRICULTURE DEPARTMENT

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CHAPTER - IX
AGRICULTURAL EDUCATION, RESEARCH AND
EXTENSION

The labour scarcity in agriculture, spiralling prices, increased cost of inputs, unstable income to the farmers for their produce, less proportionate increase in farm gate price for important food commodities like rice, pulses and oilseeds, inspite of a steep rise in consumer prices have created problems and thrown challenges to famers. In these circumstances, Tamil Nadu Agricultural University is engaged in research leading to evolving high yielding varieties, improved cultivation and plant nutrition management, plant protection measures against pest and diseases, weed management, designing farm machinery for ploughing, sowing, weeding, and after cultivation activities including harvesting. In the changed and evolving scenario, efforts are made to disseminate research findings through appropriate methods and demonstrate them to the farmers. Price forecasts are also made to enable the farmers to get profitable prices for their produce. As all these efforts need a human resource development, Tamil Nadu Agricultural University is also involved in educating for the betterment of human resources.

I. Agricultural Education

Tamil Nadu Agricultural University is imparting education by taking into consideration the scientific changes through its 10 colleges (Table 9) located in 7 campuses. With this in view, new courses have been introduced and modifications have been made to some of the existing ones. On line examination to the students has been introduced and Tamil Nadu Agricultural University is considered to be one of the leading institutions in the country. Among the

students admitted in 2009-10, 527 students are studying in the five B.Sc. degree programmes, while 265 students are studying in the seven B.Tech programmes.

Two year diploma in agriculture is offered in six research stations of the University viz., Oilseeds Research Station, Tindivanam, Agricultural Research Station, Bhavanisagar, Horticultural Research Station, Pechiparai, Rice Research Station, Ambasamudram, Regional Research Station, Aruppukottai and Agricultural Research Station, Kovilpatti with the enrolment of 189 students during 2009-10.

During the year 2009-10, 355 students have been admitted in post graduate degree programmes and 102 students have registered for their Ph.D. Programme. A new Ph.D. Programme in Agribusiness and Development Management is offered from this year (2009-10). It is noteworthy to mention that many students of this University have been selected to the IAS, IRS, IFS, TNPSC Group-I, banking sector and in many Government appointments; particularly 6 students have been selected for Indian Forest Service. It has been programmed to introduce online examination in masters' and doctoral programmes from the academic year 2010-11. During this year, a choice based credit system will be introduced for the students of M.Sc and Ph.D programmes. Post Graduate dual programmes with University of Saskatchewan and Mc Gill University of Canada will be offered from 2010-11.

The Open and Distance Learning directorate is offering three post graduate degree programmes, two post graduate diploma programmes, certificate courses of 6 months duration in Tamil on 21 important topics and 5 topics in English.

II. Research

(a) Salient findings during 2009-2010

In Tamil Nadu Agricultural University, the research activities are carried out by the scientists placed in the 10 colleges, 36 research stations (Table 10) and 14 Krishi Vigyan Kendras (Table 11). The outcome of the research has been exhibited by release of 11 new crop varieties, namely, Rice-Anna (R)4, Kudiravali- CO (KV)2, Greengram-VBN(Gg)3, Gingelly-TMV(Sv)7, Castor-YRCH1, Cotton-SVPR4, Sugarcane-COC(SC)24, Guinea grass-CO(GG)3, Brinjal-CO(B)H2, Snakegourd-PLR (SG)2 and Cashew-VRI(CW)H1 and 4 farm Implements namely, improved TNAU Dhall Mill, two row precision organic manure cum fertilizer applicator, worker friendly arecanut stripper and multi row power weeder for SRI.

In rice research, the identification of new three line rice hybrid with high marketability suitable for cultivation during *samba / thaladi* seasons and new cross combinations in Rice Test Cross Nursery, leading to cultures with good quality rice containing male sterile lines with cross pollination and flowering characters were made.

In the research under fruit crops, four new banana varieties viz., H-212 (AB), NPH-02-01 (AAB), H-96/7 (ABB) were developed apart from red pulped dioecious papaya 9-1 (D).

Maize tonic containing plant growth regulators and nutrients to improve yield potential and pulses tonic containing plant growth regulators and nutrients to maximize yield were also evolved.

The Agro Climatic Research Centre has been making block wise medium range weather forecast for the

forthcoming four days which is developed on daily basis and uploaded in the Tamil Nadu Agricultural University website.

During 2009-10, efforts were made to evolve methods in processing of agricultural produce so as to reduce post harvest losses, develop technologies for value addition in agricultural produce and gadgets to increase the efficiency of primary processing activities, refinement of transplanter for SRI cultivation, including the nursery raising system and self propelled weeding and inter cultural equipments.

The Seed Centre has produced and distributed a quantity of 172 tonnes of breeder seeds in different crop varieties during the year 2009-10 to the Department of Agriculture, National Seed Corporation and other public institutions for further multiplication into foundation and certified seeds. Considering the increasing demand for quality seeds, Tamil Nadu Agricultural University has also produced and supplied about 750 tonnes of foundation and Truthfully Labelled Seeds (TFL) during 2009-10.

(b) Programme of research for 2010-2011

During 2010-2011 research will be taken up towards Genetic Engineering of sugarcane for abiotic stress tolerance, high temperature tolerance in rice and RNAi technology for resistance mechanism for virus diseases.

Research will also be taken up on weather forecasting models to improve the weather forecast accuracy, weather based pest and disease forewarning system, altering crop geometry of dryland crops to suit farm mechanization and study on the controlled release of nano herbicides for weed management in rainfed agriculture, precision farming techniques in sunflower, Plant Growth

Regulators (PGR) consortia to improve yield in groundnut, post harvest physiological studies to improve shelf life and quality of fruits and vegetables, new technology for rapid composting of municipal solid waste and formulation of Designer fertilizer mixtures for the improvement of crop yields especially in oilseeds, cotton, sugarcane, rice, pulses and vegetable for promoting the balanced use of fertilizers.

In millets, a high yielding dual purpose sorghum variety CO(S) 30 will be released during the year 2010-2011. A promising, high yielding and early maturing pearl millet hybrid, TNBH 0642 will also be released.

In redgram, a new CGMS based hybrid, CPH 3 will be evaluated in Adaptive Research Trials throughout the state for its adaptability. An elite black gram culture, COBG 653 with an average yield of 877 kg/ha will be released for commercial cultivation. In groundnut, drought tolerant varieties viz. ,ICGV 87846, a semi-spreading and ICGV 00351, a bunchy groundnut culture will be popularized in 2010-2011.

It is programmed to produce about 190 tonnes of breeder seeds and 800 tonnes of foundation and TFL seeds during the year 2010-11.

New research initiatives, namely breeding for biotic stress in banana and papaya, evaluation of biostimulants in chilli and rootstock investigation in black pepper for biotic stress will be taken up.

It has been programmed to develop low cost solar drying system for farmers and agro industrial application, retrofitting biomass based hot air generator with the solar tunnel drier, minimization of production cost of biofuel,

introduction and popularization of pulse cultivation machines and development of equipment both multi-picking and single picking harvest in cotton.

A project on “A value chain on Industrial Agro forestry in Tamil Nadu” funded by National Agricultural Innovation Project (NAIP) has been implemented by Forest College and Research Institute, Mettupalayam for promotion of pulp and match wood tree species in association with pulp and match wood industries. In 2010-11, a horizontal expansion will be made and about 2000 hectares are likely to be covered by the industries.

III. Extension

The Directorate of Extension Education plays a key role in transferring the research findings to the farmers. During 2009-2010, the training to entrepreneurs (1311 beneficiaries), field level demonstrations benefiting 238 farmers were conducted in 63.90 ha. Front line demonstrations were laid out in 118 ha benefiting 475 farmers. Human Resource Development training will be offered to Agriculture Extension Officers and NGO's during 2010-2011.

TN-IAMWARM project

During 2009-10, improved production technologies were demonstrated in rice fallow pulses, gardenland pulses, maize, sunflower, cotton, groundnut and SRI in rice as per the need of the sub basins. Intercropping of cocoa in coconut was made in 600 hectares. During 2010-11, SRI in rice will be demonstrated in 2818 ha. Precision farming will be demonstrated in banana (80 ha), vegetables (105 ha) and sugarcane (210 ha).

During 2010-2011, a new agricultural extension scheme entitled “e-Velanmai” enabling ICT tools to disseminate farm technologies will be implemented in 25 sub basins at a cost of Rs.1.58 crores.

National Agricultural Development Programme (NADP)

The National Agricultural Development Programme is implemented by Tamil Nadu Agricultural University during 2007-08, 2008-09 and 2008-09 with a funding of Rs.3611.86 lakhs, Rs.715.05 lakhs, and Rs.105.00 lakhs respectively. Under this scheme, Automatic Weather Stations (AWS) have been installed in 224 blocks out of 385 blocks at a cost of Rs.1634.54 lakhs. The data recorded from the AWS will be used for improving the accuracy of the weather forecast. In order to enlighten the farmers on the preservation of soil fertility and agricultural technology, 195 Agri clinic cum mini Soil Testing Laboratories were established under this programme. In this regard, training was imparted to 361 Agri Clinic entrepreneurs. To facilitate in providing the information on agricultural technologies, weather details and price data to the farmers instantly, the Tamil Nadu Agricultural University AGRI - TECH portal has been created, at a cost of Rs.496.00 lakhs and 2,00,000 web pages containing detailed technologies have been hosted.

During the year (2009-10), a scheme on ‘Production and Supply of Cassava Mosaic Virus free planting materials’ and another scheme on ‘Introduction of Mini Portable Sprinkler Irrigation system for the coastal sandy soils of Tamil Nadu’ are implemented at a cost of Rs.60 lakhs and Rs.45 lakhs respectively and these schemes will be continued in 2010-2011.