



Tamil Nadu Agricultural University
Coimbatore

36th Convocation

Monday, 17th August 2015



Welcome Address

Dr. K. Ramasamy
Vice Chancellor

**Tamil Nadu Agricultural University
Coimbatore**

36th CONVOCATION

WELCOME ADDRESS

Dr. K. RAMASAMY

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His Excellency, Honourable Governor of Tamil Nadu and Chancellor of TNAU, Honourable Minister for Housing, Urban Development and Agriculture, Government of Tamil Nadu and Pro Chancellor of TNAU, Chief Guest of this 36th Convocation Function, **Dr. Susan R. McCouch**, Learned scientist, **Dr. Pedro Medrano Rojas**, Regional Director for Latin America and the Caribbean, New York, **Sri. Ashok Bakthavathsalam**, Founder and Director of KG Groups of Institutes and Distinguished Academicians and Officers, Members of Board of Management, Members of Academic, Research and Extension Education Councils, University Officers, Teaching and Non-teaching Communities of TNAU, Graduates of the year, Parents, Students and Members from the Press and Media, Ladies and Gentlemen.

Today, 17th August 2015 is indeed a very pleasant and a memorable day for all of us. As Vice Chancellor of TNAU, it is my great privilege to extend a warm welcome to His Excellency, Honourable Governor of Tamil Nadu and Chancellor of TNAU. His Excellency is an octogenarian, born from an agricultural family with a long political career spanning over half a century. His student day's leadership paved the way for his political entry to serve as Finance Minister, Health Minister and Chief Minister of then Andhra Pradesh. His contributions from 2011 to till date towards the development of Tamil Nadu and Tamil Nadu Agricultural University are immense and are to be remembered.

I feel privileged to welcome Honourable Minister for Housing, Urban Development and Agriculture, Government of Tamil Nadu and Pro-Chancellor of TNAU, **Thiru. R. Vaithilingam**. The Honourable Minister for Agriculture is a man from farming family practicing agriculture from his childhood. With the practical knowledge he acquired from his childhood in the field of agriculture and its transfer, I hope the University would make a phenomenal growth in Tamil Nadu's agricultural sector in the years to come.

I feel more proud and happy to welcome noted rice geneticist **Dr. Susan R. McCouch** who is the Chief guest of this occasion and going to deliver the convocation address and receive the *Honoris Causa* for her contributions in the

field of Plant Breeding and Genetics and other two recipients of *Honoris Causa* **Dr. Pedro Medrano Rojas**, Regional Director for Latin America and the Caribbean, New York and **Sri. Ashok Bakthavathsalam**, Founder and Director of KG Groups of Institutes, Coimbatore.

My warm welcome to all the distinguished guests, Members of the Parliament, Members of the Legislative Assembly, Agricultural Production Commissioner and Principal Secretary, Members of Board of Management, Academic, Research and Extension Education Councils of this University, Officials of the line departments, University Officers, Teachers, Scientists, all other staff members, senior professors, progressive farmers, students and personnel from mass media. I extend a warm welcome to all the graduating students and their parents on this day of celebration wherein you are graduating in your lives.

I feel proud in saying TNAU as an Institution of Excellence. From the day of inception in 1971, it grows and maintains its contributions towards education, research and extension in serving the student and farming communities of the state and nation. As said by late Bharat Ratna Dr. A. P. J. Abdul Kalam, Former President of India "Excellence is a continuous process and not an accident", the Excellence maintained by TNAU is not by accidents and is because of continuous contributions from the students, scientists and staff of TNAU and the support from the Government of Tamil

Nadu and other funding agencies. My congratulations to the contributors and sincere thanks to the supporters in sustaining the status of excellence.

Building Capacity and Capability

Capacity building in an Institute like TNAU needs perseverance, guidance and support to those who are associated with the process. There is no doubt that TNAU remains as one of the leading State Agricultural Universities (SAU) in India, its growth is continuous due to the support it receives from the Tamil Nadu Government. Having the goal of **“doubling the yield and trebling the income”** of Tamil Nadu farmers, Tamil Nadu Government is supporting TNAU in all possible ways for the capacity and capability building to execute the triple functions viz. Education, Research and Extension.

In maintaining the TNAU's excellence towards education, the Government of Tamil Nadu supported in establishing four new colleges, one Horticultural College for women at Trichy at a cost of Rs. 40 crores and three Agricultural Colleges at Vazhavachanur, Thiruvannamalai District, Echankottai, Thanjavur District and Kudumiyanmalai, Pudukottai District at a cost of Rs. 50 crores each.

Two new research stations were established for conducting research on grapes and citrus in the hotspots of grapes and citrus cultivation. Grapes Research Station and

Citrus Research Station were established at Mallingapuram, Theni district and Sankarankovil, Tirunelveli District respectively.

In TNAU, though there are Technical Directorates which governs the activities of certain departments, most of these Directorates is located in the main campus at Coimbatore. Considering the interest and urge of the young scientists of TNAU for doing cutting edge research, Centres' of Excellence with different focus areas were created with the support from the Government of Tamil Nadu and these centres are distributed across TNAU. The six centres viz. Centre of Excellence in Molecular Breeding, Coimbatore, Centre of Excellence in Dryfarming, Chettinad, Centre of Excellence for Soil Health, Trichy, Centre of Excellence for Innovation, Madurai, Centre of Excellence in Oilpalm Research, Pattukottai and Farm Women Knowledge Centre, Trichy were established with a financial support of Rs. 22.96 crores from the Government of Tamil Nadu. A sum of Rs. 4.49 crores is sanctioned by the State Government for the establishment of Skill Development Centre—Operation, Repair & Maintenance of Agricultural Machineries at the Agricultural Engineering College and Research Institute, Kumulur. Besides, the support from the State Government, Department of Biotechnology, Government of India, New Delhi facilitated the establishment of University Innovation Cluster in Biotechnology with a budget of Rs. 2.14 crores for a period of three years.

TNAU is a leading technology provider in Nanotechnology, a growing cutting edge science in the field of Agricultural Research. Recognizing the Department's contribution, IDRC, Canada have provided Rs. 6.66 crores for development of effective technologies and for developing nano formulations to enhance shelf life of fruits. Considering the strength of teachers and researchers of the University, many of the domestic and International Universities express their willingness to go along with TNAU for generation and dissemination of technologies for the welfare of farming community.

Excellence in Education

The leadership established by TNAU in the areas of education, research and extension is unique and a model across the country. The TNAU remains as the educational hub for thirteen undergraduate degree programmes which are being offered in its 14 constituent colleges and 14 affiliated colleges across the state. TNAU ensures the quality of education in its affiliated colleges on par with its constituent colleges by its continuous monitoring.

During this year, there was a seesaw change in the response of students applying to TNAU for pursuing any one of the undergraduate courses. TNAU received a total of 33219 applications of which 29469 were found to be eligible. Among the eligible candidates, 1610 were admitted based on the single window system of counseling and in this, 64

per cent were girls. The other innovative component in the under graduate programme is the introduction of “experiential learning” which is imparted through on site learning of viable agricultural technologies by the farm students so that they can remain as better service providers to the farming community.

Students of B. Tech. (Biotechnology) excelled in the All India Examination conducted by DBT-JNU for selection of students for DBT fellowship to pursue M. Sc., in Biotechnology. Twenty four students of B. Tech (Biotechnology) and Bioinformatics have secured three international admissions (AVRDC, Taiwan and Ecole Centrale, France) and 21 national fellowships from Indian Academy of Science, NIT, CCMB and NNMCB for carrying out their Biotechnology Work Experience programme. The four year B. Sc in Home Science has been reoriented as B. Sc in Food Science and Nutrition from this academic year onwards stressing on the importance of understanding the dynamics behind the food which supplies the required nutrition.

School of Postgraduate Studies offers M.Sc and Ph.D programmes in 33 and 26 disciplines which now admitted student strength of 433 and 148 respectively during this year in the first list. Moreover, four and 14 students were also admitted in the Integrated and Part time Ph.D. during this year. The performance of students of M. Sc., programme in Biotechnology has been recently ranked with 'A' grade by the Technical Expert Committee of Department of Biotechnology,

New Delhi. A noteworthy change in the postgraduate education in TNAU is the revival of trimester system replacing the semester system. While most universities in India operate on the semester system, TNAU wants to switch over to trimester system since the trimester system has diversity and flexibility by having more number of courses and the teacher has the independency of evaluating the students' performance on a continuous basis. Besides coordinating the postgraduate education of TNAU, the motivation given by this School in organizing the Agricultural Graduate Students Conference had succeeded during this year also with the contribution of students in organizing third in the series. In this Conference, more than 400 extended abstracts, posters and oral presentations in total were made.

Two students of CPMB&B received the prestigious Monsanto Beachel-Borlaug International Scholarship for pursuing Ph.D in Duke University, United States of America and Cambridge University, UK. The students of CPMB&B also received international fellowships such as Marie-Curie Fellowship, Rhodes scholarship and Lee Foundation Rice Scholarship to pursue Ph.D. in Germany and USA. Besides, students of Biotechnology are pursuing PhD in University of Tokyo, Japan. Seven students pursued dual degree in collaboration with Cornell University, USA. Post Graduate students of this centre are excelling in the All India level Agricultural Research Service examinations by securing top ranks.

More than 35 scholars belonging to minority communities were benefitted for doing their doctoral programmes from the fellowships made available from UGC Maulana Azad National Fellowship for Minority Students and Rajiv Gandhi National Fellowship. Two scholars viz, Ms. Pritha Devi doing Ph.D in Bioenergy and P. Karthikeyan doing Ph.D in Soil and Water Conservation availed the support for their studies from Prime Minister's Fellowship Scheme for Doctoral Research. Four of the women candidates viz. Dr. S. Senbagavalli, Dr. S. Rani, Dr. S. Sakthirama and Dr. D. Murugananthi got the University Grant Commission's Post Doctoral Fellowship for women for doing their research in their respective fields of specialization.

Revitalizing the Research

Tamil Nadu Agricultural University is one of the largest and most productive State Agricultural Universities (SAU) in India. TNAU carries out fundamental and applied research involving the research communities of students and scientists to understand the problems, finding out the solutions and responding to the needs of social, economic and environmental relevance. TNAU creates a milieu for research-infused education at every level for maintaining its consistency, excellence and performance over years. The recent competitive ranking of agricultural institutions across the country indicated that TNAU has grown in its research performance and impact. The University Grant Commission's (UGC) ranking in 2010-11 for identifying the universities

with high ranking positioned TNAU with h-index of 27. At present, TNAU has outperformed other SAUs and acquired a h-index of more than 50 based on Scopus profile and this brought TNAU from the category "D" to category "A" under the ranking of UGC. TNAU is highly regarded for its impact earning research. The TNAU scientists with their commitment to increasing demands of teaching make them very sincere and serious in harnessing research grant from various public and private funding agencies.

Besides the establishment of Centres of Excellence for doing focused research at TNAU, the Government of Tamil Nadu has sanctioned Rs. 36.25 crores Grant Support to TNAU through its Tamil Nadu Innovation Initiatives (TANII) for four schemes. The schemes are 1) Establishment of Rhizotron for root and rhizosphere studies (Rs. 9.00 crores), 2) Ultra High Density Orchardring for Mango, Guava and Moringa (Rs. 4.50 crores), 3) Integrated Seed Production Hub for Southern Districts of Tamil Nadu (Rs. 13.00 crores) and 4) Large area impact demonstration of fruit flies trapping technology to minimise yield losses to horticultural farmers in Tamil Nadu (Rs. 9.75 crores).

A significant development in the field of agricultural research in India is the formulation of All India Coordinated Research Projects (AICRPs), initially for the improvement of agricultural crops, but later extended to all aspects of crop husbandry. The first AICRP was started at this Institute on

maize in 1957 with the active collaboration of the Rockefeller Foundation. A novel feature of this programme is that the central research institutes as well as agricultural universities and State Departments of Agriculture were brought to work together as a team to resolve research problems of the crop at national level. TNAU is one of the beneficiaries from the Indian Council of Agricultural Research (ICAR) by having more than 60 projects at various research centres. These projects facilitate the research activities of state and national mandate on 75:25 basis of financial support besides facilitating the exchange of scientific ideas at national level. During this year, ICAR has sanctioned five new projects worth of Rs. 8.04 crores which includes All India Coordinated Research Project on Home Science with grant of Rs. 4.00 crores. Contributions made by the scientists in the AICRP programme have acclaimed a National status of eminence.

Besides the above mentioned financial support, the scientists of TNAU get a total of Rs. 98.15 crores as research grant from various funding agencies viz., Board of Research in Nuclear Sciences (BRNS), Department of Biotechnology (DBT), Department of Science and Technology (DST), Government of India (GOI), Indian Council of Agricultural Research (ICAR), University Grant Commission (UGC) and other national and international organizations. The research activities under these schemes are mostly towards exploring fundamental and applied aspects of exploiting various tools in biological sciences.

The success of reaching the goals of research cannot be achieved without having defined strategy, the right people, appropriate resources and the ambiance for doing research. In the past, TNAU research expenditure is mostly from the overall budget provided by the state government for doing triple functions of TNAU viz., Education, Research and Extension. The introduction of AICRP activities formed basis for having an exclusive research overheads for different disciplines. Over years, because of scientific and industrial growth coupled with the organized growth of TNAU, different agencies established elsewhere have started providing financial support to the scientists of TNAU for doing focused research on specific areas. Short term plan schemes were sanctioned from the state government for solving specific problems in the field of agriculture. In due course, resource crunch for doing research was solved because of overwhelming support from the International organizations and philanthropic foundations. Now, TNAU has partnership with public and private organizations in extending their services for maintaining health of living things and environment. TNAU has evolved to the level of having the responsibility to protect and foster more than ever before the fundamental research which provides the basis for applied advances and brought out its research agenda for a specific period. In this evolution process, TNAU is maintaining its standards towards commitment to students' growth, earning of scholarship, academic rigour and the highest ethical standards in research.

TNAU's commitment to maintain excellence in research is mainly because of the cooperation extended by farming community to validate the newly developed technologies and their feedback to discern the odd from good. TNAU strives hard to maintain its supremacy by its research impact which satisfies the needs of the farmers of Tamil Nadu through improved varieties/hybrids of various crops and right combination of crop production technologies keeping the three major components viz., 1) doing basic and applied research in an interdependent manner, 2) focusing long term benefit to the farming community and 3) integrating research with student's education.

TNAU's research activities are carried out with a bottom to top approach starting from individual department to technical directorate with a set of well established research agenda which is being centrally monitored by the Directorate of Research and the University's Research Council. The mode of TNAU's research agenda setting and assessing the impact of research activities are deliberated at three levels viz., 1) Research Council, 2) Annual Scientists' Meet and 3) Scientific Workers' Conference. The Directorate of Research has completed the following processes to streamline the ways and means for reaching excellence in research.

- Cataloguing of all the research projects across the university to have centralized monitoring.
- Revival of Regional Research and Extension Advisory Council (RREAC) meetings in the Regional Research Stations in all the Agro-climatic Zones of Tamil Nadu.
- Establishment of Project Proposal Scrutinizing Committee (PPSC) at the Directorate of Research for scrutinizing the research projects before the submission to sponsoring agencies.
- Establishment of Patent Technical Committee (PTC) for finalizing the proposals for patenting.
- Establishment of Institutional Germplasm Identification and Exchange Committee (IGIEC) for regulating the exchange germplasm between TNAU and outside institutes.

TNAU scientists involved in crop improvement activities have a long legacy of helping the farmers of Tamil Nadu through their improved varieties and hybrids of different agricultural and horticultural crops to sustain the productivity of the state. During the last year, TNAU plant breeders have released three rice varieties (TKM 13, MDU 6 and CR 1009 Sub1) and one each in Sorghum (K12), Wheat (CO W 3), Cluster bean (MDU 1) and Coconut (VPM 5). The Plant Breeding community of TNAU started exploiting newer molecular tools

from Biotechnology in understanding the genetic architecture of various crops, for introgressing specific genes into elite varieties through transgenic approach and marker assisted back-cross breeding (MAB). Introgression of Quantitative Trait Loci (QTL) for deep and thick roots and yield under stress from CT 9993 into IR 20, introgression of Saltol QTL from FL 478 into ADT 43 and CR 1009 and introgression genes conferring resistance blast, bacterial leaf blight and gall midge into CO 43, ADT 43, ADT 47 and ASD 16 are some of the known success stories and some of the improved lines are in the advanced stage of testing.

High level adoption of improved varieties of crops by the farmers depends upon the availability of quality seeds of those released varieties. The Breeder Seed Production Unit of Centre for Plant Breeding and Genetics and the Seed Centre take care of producing breeder seeds and other classes of seeds respectively for the benefit of farmers. Except pulses and oilseeds, the indents of paddy and millets are being fully met and even supplied in excess to The Department of Agriculture and Private seed producers. During 2014-15, a total quantity of 1,60,771.815 kgs of breeder seeds were produced and supplied to state, GOI and private agencies against the total indent of 1,60,234 kg in agricultural and vegetable crops. Major portion of breeder seeds in paddy are being distributed to private seed producers so as to encourage the private seed industry to enter into the seed multiplication chain to help

the Department of Agriculture. The seed centre besides its activities of producing foundation seeds and truthfully labeled seeds of crops varieties and doing basic research in seed science and technology, recently introduced new system of seed distribution by installing seed vending machines in different places. There is a phenomenal response to this new method of seed distribution. The Seed Centre of TNAU has successfully co-coordinated the seed production activities thereby enabling the supply of 18,931 quintals of seeds and 27.46 lakhs planting materials during 2014-15. A state of the art, seed processing unit has been established at Agricultural Research Station, Bhavanisagar at a cost of Rs 25 lakhs for processing large quantities of seeds.

The scientists under the technical directorates *viz.*, Crop Management, Natural Resource Management, Crop Protection Studies, Horticulture, Water Technology Centre, Agricultural Engineering, Forestry and Home Science are concentrating on the fine tuning of critical technologies for crop production and value addition. The improved technologies had resulted in a surplus food grain production during the year 2014-15 in Tamil Nadu which had been due to the coordinated effort of Scientists and Extension Officials.

Integrated Farming Systems models were validated for different ecosystem and the IFS models suited to wetland, garden land and dry land ecosystems were developed. To enhance the system productivity, profitability and resource

recycling in irrigated / dry ecosystem, crop components with horticulture, dairy, goat rearing, biogas and vermi-composting are recommended. Large scale frontline demonstrations were conducted to popularize the synchronized maturing of pulses varieties in order to facilitate mechanical harvesting for the benefit of the farming community. These efforts would certainly help in enhancing the overall production in Tamil Nadu in the years to come.

Making the technology available at affordable cost is one of the key features that make TNAU to be on the top. TNAU coconut tonic of 11,696 litres was supplied to the farmers which would have benefited 2,92,400 coconut trees. TNAU pulse wonder of 3,043 kg (expected to cover an area of 1,522 acres), TNAU groundnut rich 675 kg (to cover an area of 169 acres), TNAU maize maxim 481 kg (to cover an area of 80 acres), TNAU cotton plus 1,616 kg (to cover an area of 323 acres) and TNAU sugarcane booster 682 kg (to cover an area of 152 acres) were some of the initiatives taken by TNAU in directly improving the crop standards to sustain the livelihood of the farmers.

Identification, morphological characterization and documentation of insect pests and natural enemies are important for the agroecosystem based management of insect pests. Biosystematics Unit of the Department of Agricultural Entomology, Tamil Nadu Agricultural University has documented 6287 insect species from different families

during last year. So far, 70,000 insect specimens belonging to 3000 species have been collected from different parts of South India. An Insect Museum is being established at our University at a cost of one crore funded by the State Government. The specimens collected from South India and different SAUs and ICAR centres will be displayed in the Museum for the benefit of researchers, farmers, general public and students.

Biointensive Pest Management (BIPM) practices have been developed using parasitoids, predators, pathogens, pheromones and botanicals for important pests of horticultural crops viz., cauliflower, brinjal, tomato, curry leaf, tapioca, papaya, chilli and sugarcane woolly aphid and internode borer to minimize the impact of harmful pesticides. Oil based formulation of *Beauveria bassiana* effective against onion thrips and sweet flag based formulation for the management of pulse beetle are being developed. Technologies for the management of rice false smut, Alternaria leaf blight and tobacco streak virus in cotton and a system for the cultivation of oyster mushrooms in reusable polypropylene bottles and carton boxes has been standardized.

Energized Extension

Mere generation of technology will not yield fruits unless it is accepted by the intenders for whom it has been developed. TNAU is striving hard to develop time tested, cost effective and eco, econo and ergono friendly technologies which would

improve the livelihood of farmers. Besides, equal importance is also given to popularize the technologies through organized demonstrations, field days, seminars, interactive meetings etc. In such case, a series of events have been organized during this year to popularize the TNAU bred technologies among the farmers.

Sixth Indian Horticulture Congress 2014 was organized during 6-9 November, 2014 in collaboration with the Horticultural Society of India, New Delhi. The Horti Intex 2014, an international Horticultural Expo was organised with financial support of Rs 2.50 crores from Government of Tamil Nadu. The event was conducted in association with the Department of Horticulture & Plantation crops, Chennai and CODISSIA from 7th to 9th November, 2014 at CODISSIA, Coimbatore. A plethora of events including exhibition depicting the horticultural wealth, improved varieties and technologies, processing, value addition, farm equipments, field demonstrations, farmers interactive meetings were organised in which more than a lakh of visitors including farmers, entrepreneurs, banks and other stake holders participated and benefitted. Successful farmers in horticulture were awarded for their achievements.

As a measure of reaching the farmers directly by the scientists, Block Level Task Force was constituted in all the 32 districts of Tamil Nadu by Krishi Vigyan Kendras/Research Stations/College Campus so as to coordinate various activities of the TNAU and development departments. The 14 Krishi

Vigyan Kendras functioning under the Directorate of Extension Education has organized a total of 4757 trainings, 431 Front Line Demonstrations and 145 On Farm Trials so as to transfer the latest farm technologies among the farming community. In addition, a total of 52 trainings was organized by the Training Division, Directorate of Extension Education for the benefit of 2010 participants of various development departments.

The Southern Regional Agricultural Fair and Farmers day 2015 was held at TNAU, Coimbatore from 06.01.2015 to 09.01.2015 involving all the five southern states viz., Tamil Nadu, Kerala, Andrapradesh, Telungana and Karnataka and two Union Territories viz., Puducherry and Andaman and Nickobar Islands. More than 5000 farmers participated and got benefited. Uzhavarin Valarum Velanmai, a popular tamil monthly magazine with 6,030 life members and 10,131 annual members has published special issues on sericulture, soil health management, bioenergy, forage crops, plant protection, drought management, seed production technology and role of youth in agriculture. The Educational Media Centre has organized media management activities like production of 287 video programmes, telecast of 112 Doordarshan programmes and organizing 211 video shows. Farmers were also trained on specific aspects like Sustainable Sugarcane Initiative wherein 5000 farmers were trained.

AGRI INTEX 2015, another mega event to “expose to explore the technologies by farmers” was organized during July 17-20, 2015 at CODISSIA Trade Fair Complex, Coimbatore. Indoor stalls showcasing the frontier technologies of TNAU and outdoor stalls with live demonstration of Integrated Farming System, Micro-Irrigation Technologies, Medicinal Plants Garden, Nutritional Garden and Mushroom Production and latest farm machinery were arranged during the Fair. More than two lakh farmers from all over Tamil Nadu and neighbouring states attended the fair. The Community Radio Station being operated by the Directorate of Extension Education has recorded 464 Programmes besides broadcasting of 4170 programmes. A total of 480 programmes were uploaded in the TNAU Agri Tech portal. Using the newspaper medium, a total of 1409 messages were published.

Under the Bachelor of farm technology programme, a unique degree started to improve the competency of farmers by simultaneously occurring a degree, 160 candidates admitted during the year 2010 have completed six semesters in 24 subjects and were awarded with degree on the Graduation Day held on First July, 2015 by the Hon'ble Minister for Agriculture, Government of Tamil Nadu.

You are not the person you were when you came to TNAU. TNAU changed you and you will be a different person with new goals in your life. Expect more so that you will be committed towards achieving the same. Tireless work will

definitely pave the way for success when a spirit of fire is ignited in your mind towards achieving excellence. These moments will leave a happy dent in your life and later recognizing yourself as a alumni of TNAU would bring in boundless joy and happiness and you will be ever recognized with the tag of TNAU wherever you go. Best wishes for a bright future and always nurture the environment.



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