TAMIL NADU
AGRICULTURAL UNIVERSITY

FOURTEENTH ANNUAL REPORT

April 1, 1984 to March 31, 1985

BOARD OF MANAGEMENT

Chairman

Vice-Chancellor
Dr. V. Rajagopalan

Members

Commissioner & Secretary
to Government
Agriculture Department
Thiru A. Venkataraman, I. A. S.,

Finance Department
Thiru C. Ramachandran, I. A. S.,

Director of Agriculture
Thiru U. S. Natarajan, I. A. S.,
(upto 14.7.84)
Thiru K. Malaiswamy, I. A. S.,
(from 15.7.84)

Director of Fisheries
Thiru T. Lakshminarayanan, I. A. S.,
(upto 27.7.84)
Thiru T. P. Nagarajan, I. A. S.,
(from 28.7.84)

Director of Animal Husbandry
Dr. S. Rangaraj

Chief Conservator of Forests
Thiru S. Kondas, I. F. S.,

Agricultural Scientist
Prof. A. Subramaniam

Crop Farmer
Thiru A. D. Jeyam Pandian

Livestock Farmer
Thiru T. Ramachandran

Nominee for Agro-Industries
Thiru K. Liakath Ali Khan
Chairman, Tamil Nadu Agro-Industries
Corporation Limited

Woman Social Worker
Tmt. E. V. K. Sulochana Sampath

Educationist
Thiru K. Mohanarangam

Nominee of ICAR
Dr. K. Mohan Naidu
Director, Sugarcane Breeding Institute,
Coimbatore

Member of Legislative Assembly
Thiru M. Chinnaraj, M. L. A.
(upto 15.11.84)

Member of Legislative Council
Thiru M. Sankaralingam, M. L. C.
(upto 20.4.84)
Dr. T. R. Janarthanan, M. L. C.
(from 28.4.84)

Member - Secretary

Registrar
Dr. S. Jayaraj
(upto 25.12.84)
Dr. N. Shanmugam
(from 26.12.84)

CONTENTS

1. INTRODUCTION

The Fourteenth Annual Report of Tamil Nadu Agricultural University covers the period from 1.4.1984 to 31.3.1985. Significant achievements were made during the year in the fields of agricultural education, research and extension education. Seventeen new crop varieties, one poultry selection and one Japanese quail selection were released by the University for the benefit of the farming community. Besides the release of new varieties and birds selection, a number of new agro-techniques and technologies were developed in the faculties of agriculture, horticulture, agricultural engineering, veterinary and animal sciences and fishery science. Socio-economic studies were undertaken to throw light on the agrarian problems, levels of living, socio-economic constraints to agricultural production, problems of rural employment, agricultural finance etc. The research focus of the University had been one of problem solving based on field constraints identified and discussed by the various bodies such as Research Council, Extension Council and Regional Research Councils constituted at each Regional Research Station of the University and the research approach was inter-disciplinary. The research findings of the University were effectively disseminated through the strong extension education network established in the University.

The major achievements of the University in the fields of education, research and extension education are briefly summarised below:

Education

* The third agricultural college of the University was established at Killikulam, Tirunelveli district.

* The following new post-graduate degree programmes were started.

  M. Sc., (Ag) in Farming Systems Management at Coimbatore campus.

  M.E., (Ag) in Post-harvest Technology at College of Agricultural Engineering, Coimbatore.

  M.V.Sc., in Dairy Microbiology at Madras Veterinary College, Madras.

* The curricula and syllabi of undergraduate degree programmes were restructured and implemented.

* Two advanced centres, *viz.*, the Centre for Soil and Crop Management Studies and the Centre for Plant Protection Studies were established to strengthen educational, research and extension activities of the respective disciplines.

* A scheme for the institution of 'Best Teacher' and 'Best Researcher' awards was introduced.

* Under the faculty improvement programme eleven scientists of the University were deputed for advanced studies/training to other universities/institutes in India and abroad.

* In order to impart skill to the officers of the development departments 85 candidates from the departments were admitted in the post-graduate degree programmes of the University.

* The students of the University got 33 ICAR Junior Fellowships through All India competitive examinations and occupied high ranks in many disciplines.

* The University instituted TNAU merit scholarship for M.Sc., (Food science and Nutrition) degree programme.

* Three computer centres, one each at Coimbatore, Madurai and Madras campuses with assistance from ICAR were established to strengthen educational and research programmes.

Research

* The following new schemes were implemented during the year :

1. Operational Research Project on Integrated Energy and Nutrient Supply System.
2. Study on Over-exploitation and Under-exploitation of Groundwater in Tamil Nadu.
3. Biological Nitrogen Fixation by BGA and Azolla.
4. Nitrogen Fertilizer Efficiency - An Indo-US Scheme.
5. Scheme for Research on Under-utilized and Un - utilized plants-winged Beans.
6. Deep Freezing and Utilization of Ram Semen.
7. Surveillance of *Salmonella* and *E. Coli* infections of Poultry and Livestock.
8. Credit for Rural Development in Southern Tamil Nadu.
9. Training Women in Enterprise Management to encourage women participation in Rural Development.
10. Survey on Identification of Location Specific Environmental Problems in the Nilgiris Range.
11. Environmental Education and Awareness in the Western Ghats Region.
12. Strengthening of Seed Production at Pattukottai, Palur and Kovilpatti.
13. Scheme for Socio-economic studies on Tribal Welfare in the Lower Palani Hills, Thadiankudisai.
14. Scheme for Studies on Production Physiology on Rice, Madurai.
15. Establishment of Wetland Banana Research Station, Sirugamani.
16. Establishment of Plant Clinic Centres at Salem and Srivilliputhur.
17. Establishment of Agricultural Research Station at Vellore, North Arcot District

18. Scheme for Studies on Materials and Methods of Farm Structures, Coimbatore.

19. Upgradation of Tamil Nadu Rice Research Institute, Aduthurai.

20. Establishment of a Radiology Section at Madras Veterinary College, Madras.

21. Strengthening of Department of Animal Husbandry Statistics at Madras Veterinary College, Madras.

22. Establishment of Breeding Unit for the Production of Australorp Pullets at Poultry Research Station, Madras.

23 Conjuctive Use of Ground and Surface Water for Optimal Irrigation Management and Cropping Pattern in River Basin Projects Under Different Rainfall Conditions, Coimbatore.

24. Study on Rural Levels of Living, Nutritional Status, Engergy Use Pattern and Their Demographic Determinants, Madurai.

25. Fate and Efficiency of Urea Based Fertilizers - Bench Mark Studies, Aduthurai.

26. Increasing Income and Employment through Optimal Farm Planning and Identification of Constraints

27. Establishment of Krishi Vigyan Kendras at Kattupakkam and Vridhachalam.

28. Mineral Status of Plant and Animal and Its Relation to Incidence of Heamaturia in Hill Cattle.

29. Studies on Fish Sauce and Boiled - Dried Anchovies.

* As on date there are 42 ICAR Co - ordinated projects, 44 *adhoc* projects, eight sub-projects under NARP, 17 Government of India schemes, 151 Plan schemes and 20 schemes financed by other agencies functioning in the various faculties and research stations of the University.

* The concerted efforts of the scientists of the University had resulted in the release of the following new varieties of crops and selections of birds during the year under report :

New Varieties of Crops

Rice	: TPS 1 and PMK 1
Millets	
Sorghum	: Co 25
Ragi	: Co 12
Maize	: Co 1
Greengram	: Paiyur 1
Cotton	: K 10
Sugarcane	CoC 85061
Flowers	
Chrysanthemum	: Co 1 and MDU 1
Rose	: YCD 1
Hibiscus	: Co 3
Vegetables	
Snakegourd	: MDU 1
Fruits	
Papaya	: Co 5
Pomegranate	: YCD 1
Spices and Condiments	
Fennel	: Co 1
Cashew	: VRI 2

Birds Selections

Poultry	: Nandanam 1
Japanese quail	: Nandanam 1-Kadai.

* In order to strengthen the agricultural research of the University the research station at Aduthurai was upgraded and renamed as Tamil Nadu Rice Research Institute and a separate Directorate was established for the Institute.

* The on-farm research conducted by the University had been expanded during the year so as to cover not only the testing and evaluation of pre-release cultures but also to include the various technologies developed in the University such as seed treatments, weedicide recommendations, fertilizer trials, azolla application, rhizobial treatments etc.

* A model status report for North-Western zone was prepared with the help of World Bank and ICAR.

Transfer of Technology

The Directorate of Extension Education is primarily responsible for the effective dissemination of the advanced technologies developed by the scientists of the University. The achivements in this area are given below:

* Two new Krishi Vigyan Kendras were started at Kattupakkam and Vridhachalam.

* Proposals for the establishment of three more Krishi Vigyan Kendras at Vellore, Tirunelveli and Sandynallah are under consideration of the ICAR.

* The scientists at the five Plant Clinic Centres at Vellore, Kancheepuram, Tirunelveli, Salem and Srivilliputhur were actively engaged in diagnosing various crop maladies, suggesting timely solutions to them, pest surveillance and monitoring, and forecasting of pest and disease outbreaks.

* The scientists of the National Demonstration Scheme at Salem conducted demonstration of improved practices relating to rainfed agriculture, multiple cropping, entire farming systems and other improved techniques to maximise production.

* The two Communication Centres at Coimbatore and Madras disseminated latest technologies through mass media and conducted Farm School on AIR and Correspondence Courses.

* A total of 3500 farm families were adopted by nine TNAU centres under the Lab-to-Land programme of the ICAR.

* Twenty villages were adopted by ten TNAU centres. The adopted villages received technological support through training and demonstration.

* After the introduction of the T & V system in Tamil Nadu, the training of the subject matter specialists of the State Departments of Agriculture, Horticulture, Marketing and Oilseeds is vested with the University. A total of 755 training programmes (including T&V training and minikit programmes) were organized involving 30,022 beneficiaries comprising of farmers

extension functionaries, farm women, pre-release defence personnel, artisans and unemployed youths.

* The Livestock Research and Development Centres were actively engaged in diagnosing diseases and giving treatment, pregnency tests, vaccination and establishment of dairy units.

Focus for 1985 - 86

* Starting the second Veterinary College at Namakkal, Salem district.

* Starting a new degree programme of B. Sc. (Forestry)

* Strengthening breeders' seed production in oilseeds, vegetables and forages.

* Commercial exploitation of heterosis in rice.

* Strengthening radiation research.

* Studies on epidemiology and integrated management of blast in rice.

* Biological control of crop pests.

* Strengthening of communication centre at Madras Veterinary College, Madras.

* Studies on rumen physiology.

* Studies on frozen seman techniques to increase the conception rate.

* Studies on nutrient chemistry and utilization of sewage

* Studies on smoke curing of fishes.

* Under the second phase of the National Agricultural Research Project, the regional research capabilities in seven additional areas, *viz.*, agro-forestry, commercial crops, water management, post-harvest technology, animal nutrition and management, horticulture and farm implements are proposed to be strengthened in the University.

2. UNIVERSITY ADMINISTRATION

OFFICERS OF THE UNIVERSITY

Chancellor	:	Thiru S. L. Khurana His Excellency, the Governor of Tamil Nadu
Pro-Chancellor	:	Dr. K Kalimuthu Hon'ble Minister for Agriculture
Vice-Chancellor	:	Dr. V. Rajagopalan
Registrar	:	Dr. S. Jayaraj (upto 8.6.84) (Additional charge upto 25.12.84) Dr N. Shanmugam (from 26.12.84)
Comptroller	:	Thiru V. Sourirajan (upto 6.6.84) Thiru G. Prabhakaran Nair (from 7.6.84)
Dean, Agricultural College and Research Institute, Coimbatore	:	Dr. K. R. Ramaswamy
Dean, Agricultural College and Research Institute, Madurai	:	Dr. K. K Krishnamoorthy (upto 15.5.84) Dr. K. G. Shanmughavelu (Additional charge upto 7.6 84) Dr. T Kumaraswami (from 8.6.84)
Dean, Madras Veterinary College, Madras	:	Dr. P. Kothandaraman
Dean, College of Agricultural Engineering, Coimbatore	:	Prof. R. K. Sivanappan (Additional Charge upto 8 6.84) Dr. V. Subramaniyan (from 9.6.84)
Dean, Faculty of Horticulture, Coimbatore	:	Dr. S. Muthuswami
Dean, Post-graduate Studies, Coimbatore	:	Dr. V. D. Guruswamy Raja

Dean, Fisheries College, Tuticorin	:	Dr. G. Jagatheesan (Additional Charge)
Dean, Agricultural College, Killikulam	:	Dr. T. K. Kandaswamy (from 6.11.84)
Director of Research (Agri.), Coimbatore	:	Dr. M. Balasubramanian
Director of Extension Education, Coimbatore	:	Dr. A John Knight (upto 31.8.84) Dr. S. R. Sree Rangaswamy (Additional Charge from 1.9.84)
Director, School of Genetics Coimbatore	:	Dr. S. R. Sree Rangaswamy
Director, Centre for Agricultural and Rural Development Studies, Coimbatore	:	Dr. K. R. Ramaswamy (Additional Charge upto 12.6.84) Dr. A. Kandaswamy (from 13.6.84)
Director of Research (Animal Sciences), Madras	:	Dr. S. Venkatayan
Director, Institute of Animal Nutrition, Livestock Research Station, Kattupakkam	:	Dr. S. Venkatayan (Additional Charge)
Director of Animal Health, Tiruchirapalli	:	Dr. T. M Thangaraj (from 13.6.84)
Director, Centre for Plant Protection Studies, Coimbatore	:	Dr. S. Jayaraj (from 9.6.84)
Director, Centre for Soil and Crop Management Studies, Coimbatore	:	Dr. S. Subramanian (from 9.6.84)
Director, Tamil Nadu Rice Research Institute, Aduthurai	:	Dr. S. Chelliah (from 2.1.85)
Director, Water Technology Centre, Coimbatore	:	Prof. R. K. Sivanappan
Estate Officer, Coimbatore	:	Er. A. Rathinasabapathy

BOARD OF MANAGEMENT

Chairman

Vice-Chancellor	:	Dr. V. Rajagopalan

Members

Commissioner & Secretary to Government		
a) Agriculture Department	:	Thiru A. Venkataraman, I. A. S.
b) Finance Department	:	Thiru C. Ramachandran, I. A. S.
Director of Agriculture	:	Thiru U. S Natarajan, I. A. S. (upto 14.7.84) Thiru K. Malaiswamy, I. A. S. (from 15 7.84)
Director of Fisheries	:	Thiru T. Lakshminarayanan, I. A. S. (upto 27.7.84) Thiru T. P. Nagarajan, I. A. S. (from 28.7.84)
Director of Animal Husbandry	:	Dr. S. Rangaraj
Chief Conservator of Forests	:	Thiru S. Kondas, I. F. S.
Agricultural Scientist	:	Prof. A. Subramaniam
Crop Farmer	:	Thiru A. D. Jeyam Pandian
Livestock Farmer	:	Thiru T. Ramachandran
Nominee for Agro-Industries	:	Thiru K. Liakath Ali Khan in the capacity as Chairman, Tamil Nadu Agro-Industries Corporation Limited
Women Social Worker	:	Tmt. E. V. K. Sulochana Sampath
Educationist	:	Thiru K. Mohanarangam
Nominee of ICAR	:	Dr. K. Mohan Naidu in the capacity as Director, Sugarcane Breeding Institute, Coimbatore
Member of Legislative Assembly	:	Thiru M. Chinnaraj, M. L. A. (upto 15.11.84)

Member of Legislative Council	:	Thiru M. Sankaralingam, M. L. C. (upto 20.4.84) Dr. T. R. Janarthanan, M. L. C. (from 28.4.84)
Member - Secretary Registrar	:	Dr. S. Jayaraj (upto 25.12.84) Dr. N. Shanmugam (from 26.12.84)

Meetings of the Board of Management

During the year under report, the Board of Management met four times, on May 4, 1984, May 28, 1984, September 11, 1984 and December 15, 1984. The following are some of the important decisions taken by the Board of Management at these meetings.

I. Research and Education

1. Approved the results of post - graduate and under - graduate degree programmes of the University and award of degrees for the period 1983 - 84.

2. Sanctioned the institution of an endowment in honour of the Chief Guest of the Tenth Annual Convocation of the University, Dr. O. P. Gautam, Director General of ICAR, New Delhi.

3. Approved the implementation of a scheme for strengthening the training unit of the University for the co - ordination of the T & V programme of the department of Agriculture with the University.

4. Approved the implementation of the scheme for the upgradation of the Tamil Nadu Rice Research Institute, Aduthurai and also the re-organisation of the existing research set up in the Directorate of Research (Agri.).

5. Approved the shifting of the headquarters of the Directorate of Animal Health from Madras to Tiruchirapalli and transferring the Animal Disease Investigation and Control Unit from Madras Veterinary College, Madras to Tiruchirapalli under the control of the Director of Animal Health.

6. Approved the shifting of the venue of M. Sc. (Food Science and Nutrition) degree programme from Coimbatore to Madurai campus.

7. Approved the continuance of the scheme of the collaborative research project on 'Growth Linkage Effects of Green Revolution on Regional Income and Employment in North Arcot District of Tamil Nadu', at Vellore and transferring of the shceme to Coimbatore for the period upto 31.3 1985.

8. Approved the scheme for the establishment of a breeding unit for the

production of Australorp white pullet chicks in the University.

9. Approved and sanctioned the implementation of the University scheme for the establishment of the third Agricultural College at Killikulam in Tirunelveli district.

10. Approved the location of the third Agricultural College in the University at Killikulam in Tirunelveli district.

11. Approved the implementation of a research project on "Credit for Rural Development in Southern Tamil Nadu", fully financed by National Bank for Agriculture and Rural Development.

12. Approved the 12th Annual Report of the University for the year 1982-83.

13. Approved the course contents of Distance Education Programme leading to a degree of Bachelor of Agricultural Technology by the University.

14. Approved the admission of Sri Lanka Tamil Students into the B. V. Sc., and B Sc., (Ag) degree programmes of the University.

II. Administration

15. Approved the appointment of part-time Medical Officer to certain out-stations of the University.

16. Approved the implementation of the Government Orders on the representation of the University.

17. Approved the employment of field staff for the Water Technology Centre, Coimbatore.

18. Approved the orders of the Government extending the time limit for acquiring the prescribed qualification *viz.*, Ph. D., by the teaching staff in the University.

19. Approved the appointment of Sri Lankan Tamils as Assistant Professors in the University.

III. Account and Audit

20. Approved the Revised Estimate for 1983-84 and the Budget Estimate for 1984-85.

21 Approved the audited annual accounts and audit report of the University for the year 1981-82

22. Approved the audited annual accounts of the University for the year 1982-83.

IV. Works

23. Approved and sanctioned Rs. 13.09 lakhs towards the construction of certain buildings at Sugarcane Experiment Station, Cuddalore under NARP.

24. Approved and sanctioned Rs. 8.91 lakhs towards the construction of various buildings at Regional Research Station, Vridhachalam under NARP.

25. Approved and sanctioned Rs. 1.11 lakhs towards construction of farm structures under NARP at Oilseeds Experiment Station, Tindivanam.

26. Approved and sanctioned Rs 3.00 lakhs towards the construction of laboratory at the Coconut Research Station, Veppankulam.

27. Approved and sanctioned Rs. 1.73 lakhs towards the cost of additional lands transferred from the Public Works Department to the Agricultural Research Station, Bhavanisagar.

28. Approved and sanctioned Rs 5.72 lakhs towards the construction of farm structures at the National Pulses Research Centre, Vamban, Pudukottai.

29 Approved and sanctioned Rs. 5.98 lakhs towards the construction of farm structures at the Regional Research Station, Aruppukottai under NARP.

30. Approved and sanctioned Rs. 9.65 lakhs towards the construction of staff quarters at the Regional Research Station, Aruppukottai under NARP.

31. Approved and sanctioned Rs. 9.00 lakhs towards the construction of Ladies Hostel Phase II at the Agricultural College and Research Institute, Madurai.

32. Approved and sanctioned Rs. 8.00 lakhs towards the construction of a Communication Centre building at the main campus, Coimbatore.

33. Approved and sanctioned Rs. 10.00 lakhs towards the construction of Administrative Building at the main campus, Coimbatore.

34. Approved and sanctioned Rs 9.16 lakhs towards the construction of laboratory at the Regional Research Station, Vridhachalam under NARP.

35. Approved and sanctioned Rs. 1.39 lakhs towards the construction of farm structures at the Livestock Research Station, Kattupakkam under NARP.

36 Approved and sanctioned Rs. 28.08 lakhs towards the construction of certain buildings at Horticultural Research Station, Thadiyankudisai under NARP

37. Approved and sanctioned Rs. 3.57 lakhs towards the land value for the acquisition of additional lands for the Regional Research Station, Vridhachalam.

38. Approved and sanctioned Rs 2.20 lakhs towards the construction of workshop building for the College of Agricultural Engineering at the main campus, Coimbatore.

39. Approved and sanctioned Rs 2.86 lakhs towards the purchase of one 'Liquid Scintillation' system for the Department of Soil Science and Agricultural Chemistry, Coimbatore.

40. Approved and sanctioned Rs. 2.48 lakhs towards the construction of staff quarters at Mecheri Sheep Breeding Research Station, Pottaneri.

41. Approved and sanctioned Rs. 1.50 lakhs towards the construction of a dormitary building at the Sheep Breeding Research Station, Sandynallah.

42. Approved and sanctioned Rs. 15.50 lakhs towards the construction of certain buildings at the Regional Research Station, Vridhachalam

and Livestock Research Station, Kattupakkam under NARP.

43. Approved the construction of first floor (southern wing) over A. I. laboratory at Sheep Breeding Research Station, Sandynallah.

V. Miscellaneous

44. Approved the allotment of a site for construction of building to the Department of Agriculture at the Sugarcane Experiment Station, Cuddalore.

45. Approved the purchase of private lands for the Regional Research Station, Aruppukottai.

46. Approved the purchase of additional lands for the Cotton Research Station, Srivilliputhur by direct negotiation with private parties.

47. Approved the retention of 3.50 acres of lands with fish ponds, buildings *etc.* at the Agricultural Research Station, Bhavanisagar intended for transfer to the Department of Fisheries.

48. Approved the proposal to get 7.50 acres of lands from the PWD on transfer for the Agricultural Research Station, Bhavanisagar.

49. Approved the transfer of lands at the State Seed Farm, Killikulam to the University for the thrid Agricultural College as per the orders of the Government.

ACADEMIC COUNCIL

Chairman

Vice-Chancellor	:	Dr. V. Rajagopalan

Members

Commissioner and Secretary to Government, Agriculture Department	:	Thiru A. Venkataraman, I. A. S.

Deans

Agricultural College & Research Institute, Coimbatore	:	Dr. K. R. Ramaswamy
Agricultural College & Research Institute, Madurai	:	Dr. K. K. Krishnamoorthy (upto 15.5.84)
		Dr. K. G. Shanmugavelu (Additional Charge from 16.5.84 to 7.6.84)
		Dr. T. Kumaraswami (from 8.6.84)
Agricultural College, Killikulam	:	Dr. T. K Kandaswamy (from 6.11.84)

College of Agricultural Engineering, Coimbatore	:	Prof. R. K. Sivanappan, (Additional Charge upto 8.6.84)
		Dr. V. Subramaniyan, (from 9.6.84)
Madras Veterinary College, Madras.	:	Dr. P. Kothandaraman
Fisheries College, Tuticorin	:	Dr. G. Jagatheesan (Additional Charge)
Post-graduate Studies, Coimbatore	:	Dr. V. D. Guruswamy Raja
Faculty of Horticulture, Coimbatore	:	Dr. S. Muthuswami

Directors

Director of Research (Agriculture), Coimbatore	:	Dr. M. Balasubramanian
Director of Research (Animal Sciences), Madras	:	Dr. S. Venkatayan
Director of Extension Education, Coimbatore	:	Dr. A. John Knight (upto 31.8.84)
		Dr. S. R. Sree Rangaswamy (Additional Charge from 1.9.84)
Director, CARDS, Coimbatore	:	Dr. K. R. Ramaswamy (Additional Charge upto 12.6.84)
		Dr. A. Kandaswamy (from 13.6.84)
Director, School of Genetics, Coimbatore	:	Dr. S. R. Sree Rangaswamy
Director, Water Technology Centre, Coimbatore	:	Prof. R. K. Sivanappan
Director, Centre for Plant Protection Studies, Coimbatore	:	Dr. S. Jayaraj (from 15.12.84)
Director, Centre for Soil and Crop Management Studies, Coimbatore	:	Dr. S. Subramanian (from 15.12.84)

Director of Animal Health, Tiruchirapalli	:	Dr. T. M. Thangaraj (from 15.12.84)
Six members among the Heads of Departments nominated by the Vice-Chancellor	:	Dr. V. Subramaniyan Professor and Head, Department of Agricultural Processing, Coimbatore. (upto 8.6.84)
		Dr. D. Chandrasekaran Professor and Head, Department of Soil and Water Conservation, Coimbatore. (from 26.7.84)
		Dr. P. Chandrasekaran Professor and Head, Department of Forage Crops, Coimbatore.
		Dr. R. Ramamurthi Professor and Head, Department of Meat Hygiene and Technology, Veterinary College, Madras.
		Dr. V. Ulaganathan Professor and Head, Department of Animal Genetics, Veterinary College, Madras.
		Dr. K. G. Shanmugavelu Professor and Head, Department of Horticulture, Agricultural College & Research Institute, Madurai.
		Dr. P. Natarajan Associate Professor and Head, Department of Fish culture, Fisheries College, Tuticorin.
Three members having special knowledge or practical experience in different aspects of agriculture nominated by the Vice-Chancellor	:	Prof. AR. Lakshmanan Dean, College of Agriculture, Annamalai University, Annamalai Nagar.
		Dr. R Ramaiah Professor and Head, Department of Agricultural Engineering, University of Agricultural Sciences, Dharwar.

Prof. A. Gnanam
Vice-Chancellor, Bharathidasan University,
Tiruchirapalli.

Secretary

Registrar : Dr. S. Jayaraj
(upto 8.6.84)
(Additional Charge from 9.6.84 to 25.12.84)

Dr. N. Shanmugam
(from 26.12.84)

Meetings of the Academic Council

The Academic Council met twice during the year under report. The following important decisions were taken.

1. Recommended the proposal to shift the M.Sc. (Food Science & Nutrition) degree programme from Coimbatore campus to Madurai campus.

2. Approved the scheme for the establishment of a breeding unit for the production of Australorp white pullets at the Poultry Research Station, Nandanam without any additional staff component.

3. Accepted the institution of one Tamil Nadu Agricultural University Merit Scholarship for M.Sc. (Food Science & Nutrition) degree programme.

4. Recommended the institution of Tamil Nadu Agricultural University fellowship, SPIC scholarship, Chief Guest Dr. O. P. Gautam Medal and Dr. Malcolm S. Adiseshiah Prize.

5. Accepted the proposal for the creation of one post of Assistant Professor of Crop Physiology at Agricultural College & Research Institute, Madurai to strengthen the teaching and research activities.

6. Accepted the proposal for the reorganisation of the existing set up in research co-ordination in the Directorate of Research (Agri.).

7. Approved the proposal for the creation of one post of Professor (Horticulture) at Horticultural Research Station, Kodaikanal.

8. Accepted the proposal for the creation of one post of Professor at Poultry Research Station, Nandanam.

9. Accepted the proposal for admission of 50 Assistant Agricultural Officers sponsored by the State Department of Agriculture (over and above the existing strength) in B.Sc. (Ag) degree course at Madurai and Coimbatore campuses during the academic year 1984-85.

10. Accepted the proposal for introducing a common entrance test in the place of interview system for the selection of candidates to undergraduate courses.

11. Accepted and recommended reservation of 85 seats in various disciplines of M. Sc. (Ag) / M.Sc. (Hort) degree programmes for the candidates sponsored by the State Department of Agriculture.

12 Decided to admit the B. V. Sc. and B.F.Sc. graduates to the M Sc. (Ag) degree programmes in Agricultural Economics and Agricultural Marketing Management.

13. Approved the appointment of Chairman and Members of the Recognition Committee

14. Accepted the recommendations of the Recognition Committee in respect of M. Sc. in Microbiology offered by the All India Institute of Medical Sciences, New Delhi as equivalent to M.V.Sc. and the M Sc. (Ag) degree offered by Rajendra Agricultural University, Bhagalpur as equivalent to the M. Sc. degree in Horticulture for the purpose of admission to Ph. D programme.

15. Accepted and recommended the nomination of Directors of Animal Health, Centre for Soil and Crop Management Studies and Centre for Plant Protection Studies as members of the Academic Council.

BOARD OF STUDIES

I. Faculty of Agriculture

Elected Members

	Upto 25.3.85	**From 26.3.85**
1.	Dr. S. Rajasekaran Associate Professor (Agrl. Botany) Agricultural College and Research Institute, Madurai.	Dr. C. Ramasamy Associate Professor (Agrl. Economics) Agricultural College & Research Institute, Coimbatore.
2.	Dr. K. Saivaraj Associate Professor (Agrl. Entomology) Agricultural College & Research Institute, Coimbatore.	Thiru N. Sivasamy Associate Professor (Agrl. Botany) Agricultural College, Killikulam.
3.	Thiru A. Balasubramanian Assistant Professor (Agronomy) Agricultural College & Research Institute, Coimbatore.	Thiru M. N. Bhudher Assistant Professor (Agronomy) Regional Research Station, Paiyur.
4.	Thiru T. L. Baskaran Assistant Professor (Plant Pathology) Agricultural College & Research Institute, Coimbatore.	Thiru K. Ponnusamy Assistant Professor (Agronomy) National Pulses Research Centre, Pudukottai.

5.	Dr. M. Swamiappan Assistant Professor (Agrl. Entomology) Agricultural College & Research Institute, Coimbatore.	Thiru R. Murugesan Assistant Professor (Agrl. Microbiology) National Pulses Research Centre, Pudukottai.

Nominated Members

	Upto 25.3.85	**From 26.3.85**
1.	Prof. AR. Lakshmanan Dean, Faculty of Agriculture, Annamalai University, Annamalai Nagar.	Dr. R. Ramanna Professor and Head, Department of Agricultural Economics, University of Agricultural Sciences, Bangalore.
2	Dr. R. B. Patil Director of Instructions (Agri), College of Agriculture, Dharwad.	Dr. S. Chandrasekaran Professor and Head, Department of Soil Science, Annamalai University, Annamalai Nagar.

Meetings

This Board of Studies met thrice during the year and made the following recommendations.

1. Approval of the restructured syllabus for the Ph.D. degree programme.
2. Starting of Ph. D. course in Plant Breeding and Genetics at Agricultural College & Research Institute, Madurai.
3. Proposal for offering Ph. D programme for the staff members of the departments of Mathematics and Statistics.
4. Proposal for utilising the services of senior Ph. D. full time scholars for assisting in teaching.
5. Starting of new post-graduate programme leading to M.E. (Ag)/M.Sc. (Ag) in Water Management.
6. Approval of restructured syllabus for the M. Sc , (Ag) in Sugarcane production.
7. Approval of certain rules and regulations relating to the Post-graduate degree programme.
8. Approval of the recommendations of the Teaching Seminar undergraduate)
9. Creation of a separate department of Environmental Sciences
10. Starting of the 'Distance Education Programme' leading to the award of B.Ag.Tech. degree and approval of syllabus for the same.
11. Starting of diploma courses for the plus-two completed students.
12. Proposal for starting a certificate course in Plant Protection.

13. Approval of restructured syllabus for the B. Sc. (Ag) degree programme.

14. Approval of equivalent / alternate courses for the B.Sc. (Ag) degree programme.

15. Approval of restructured syllabus (1984 - 85) for the II B. Sc. (Ag) class.

16. Prescribing minimum attendance for the audit courses.

17. Introduction of a course credit (0 + 1) for the under-graduate students in the field of Physical Education like N.C.C. and N.S.S. in I and II year classes.

18. Approval of year wise course arrangements for the B.Sc., (Home Science) degree programme.

Faculty of Agricultural Engineering

Elected Members

	Upto 25.3.1985	**From 26.3.1985**
1.	Thiru M. Balasubramanian Associate Professor, College of Agricultural Engineering, Coimbatore.	Dr. V. V. Sreenarayanan Associate Professor, College of Agricultural Engineering, Coimbatore.
2.	Thiru R. Manian Associate Professor, College of Agricultural Engineering, Coimbatore.	Thiru P. Natarajan Associate Professor, College of Agricultural Engineering, Coimbatore.
3.	Thiru K. Rangasamy Assistant Professor, College of Agricultural Engineering, Coimbatore.	Thiru D. Manohar Jesudas Assistant Professor, College of Agricultural Engineering, Coimbatore.
4.	Thiru K. Arumugam Assistant Professor, College of Agricultural Engineering, Coimbatore.	Thiru S. Senthilvel Assistant Professor, College of Agricultural Engineering, Coimbatore.
5.	Thiru R. Kailappan Assistant Professor, College of Agricultural Engineering, Coimbatore	Thiru K. Shanmugasundaram Assistant Professor, Agricultural College & Research Institute, Madurai.
6.	Thiru K. Raja Assistant Professor, College of Agricultural Engineering, Coimbatore.	Thiru V. Kumar Assistant Professor, Regional Research Station, Paiyur.

Nominated Members

Upto 25.3.1985

1. Dr. R. Lal
   Dean,
   College of Agricultural Engineering,
   Orissa Agricultural University,
   Bhubaneswar, Orissa.

2. Thiru G. Ramana Reddy
   Professor and Head, Department of
   Agricultural Engineering,
   Andhra Pradesh Agricultural
   University, Rajendranagar.

From 26.3.1985

Dr. V. V. N. Murthy
Professor and Head, Department of
Soil & Water Conservation,
College of Agricultural Engineering,
Punjab Agricultural University,
Ludhiana.

Dr. B. P. N. Singh
Professor and Head,
Department of Processing & Water
Conservation, G. P. Pant University,
Pant Nagar.

Meetings

The Board of studies met thrice during the year and recomended the following to the Academic Council.

1. Approval of syllabus for the new Post - graduate degree programmes in Agricultural Engineering.

2. Approval of revised syllabus for the Post-graduate degree programme in Soil and Water Conservation Engineering and Farm Power and Machinery.

3. Approval of restructured syllabus for the B.E.,(Ag) degree programme.

4. Approval of equivalent / alternate courses for the B. E., (Ag) degree programme.

5. Approval of AMIE as an alternate qualification for admission to the M.E.,(Ag) degree programme.

Faculty of Veterinary and Animal Sciences

Elected Members

1. Dr. B. M. Eswaran
   Associate Professor
   Madras Veterinary College,
   Madras.

2. Dr. P. A. Balu
   Associate Professor,
   Madras Veterinary College,
   Madras.

3. Dr. R. S. Viswanathan
   Assistant Professor
   Madras Veterinary College
   Madras.

4. Dr. P. Dhanapalan
   Assistant Professor,
   Madras Veterinary College
   Madras.

5. Dr. S. Subramanian
   Assistant Professor
   Madras Veterinary College
   Madras

6. Dr. P. Thangaraju
Assistant Professor,
Directorate of Research
(Animal Sciences),
Madras.

Nominated Members

1. Dr. A. Rama Mohana Rao
Professor and Head,
Department of Animal Genetics,
and Principal i/c,
College of Veterinary Sciences,
Tirupathi.

2. Dr. M. Krishnan Nair
Dean,
College of Veterinary Science,
Mannuthy, Tirchur.

Meetings

The Board of Studies met once during the year under report and recommended the following to the Academic Council.

1. Approval of revised curricula and syllabi for Ph.D. degree programmes.

2. Approval of syllabus for the Ph.D. degree programmes in Meat Hygiene & Technology and Livestock Production and Management.

3. Approval of revised curricula and syllabi for the M. V. Sc., degree programmes.

4. Introduction of new course for M.V.Sc., degree programmes in certain subjects.

5. Approval of equivalent courses in the restructured B. V. Sc. syllabus and for the course in the pre-revised syllabus.

6. Fixing time for the conduct of All India study tour for the students under the revised regulations and South India tour to the B. V. Sc. students.

7. Proposal for the conduct of final examinations under the trimester pattern for one week after 70/72 working days.

8. Proposal to increase the number of working days in a trimester to 72 instead of 70 days.

9. Approval of format for the Class Grade Chart (Supplementary Examination).

10. Proposal for fixing the venue accomodation etc., for the internship training.

Faculty of Horticulture

Elected Members

Upto 23.1.85

1. Thiru V. Palanisamy
Associate Professor,
Faculty of Horticulture,
Coimbatore.

From 24.1.85

Dr. R. Subbiah
Associate Professor,
Department of Horticulture,
Agricultural College & Research Institute,
Madurai.

2.	Dr. (Mrs.) Seemanthini Ramdas Associate Professor, Faculty of Horticulture, Coimbatore.	Thiru S. Thamburaj Associate Professor, Faculty of Horticulture, Coimbatore.
3.	Thiru P. Selvaraj Assistant Professor, Faculty of Horticulture, Coimbatore.	Thiru S. Natarajan Assistant Professor, Department of Horticulture, Agricultural College & Research Institute, Madurai.
4.	Thiru T. Thangaraj Assistant Professor, Faculty of Horticulture, Coimbatore.	Thiru D. Veeraragava Thatham Assistant Professor, Regional Research Station, Vridhachalam.
5.	Thiru E. Vadivel Assistant Professor, Faculty of Horticulture, Coimbatore.	Thiru E. Vadivel Assistant Professor, Faculty of Horticulture, Coimbatore.
6.	Thiru L, R Rajasekaran Assistant Professor, Department of Horticulture, Agricultural College & Research Institute, Madurai.	Thiru S Annadurai Assistant Professor, Faculty of Horticulture, Coimbatore.

Nominated Members

	Upto 23.1.85	**From 24.1.85**
1.	Dr. U. V. Sulladmath Professor and Head Department of Horticulture, University of Agricultural Sciences, Bangalore.	Dr. S N. Rao Director of Research (Retd), 6-3-609/142 Anandanagar Colony, Khairatabad, Hyderabad.
2.	Dr. P. C Sivaraman Nair Director of Research, Kerala Agricultural University, Vellanikkara, Tiruchur.	Dr. P. C. Sivaraman Nair Director of Research, Kerala Agricultural University, Vellanikkara, Tiruchur.

Meetings

The Board of Studies met thrice during this year and recommended the following to the Academic Council.

1. Approval of the revised syllabus for the Ph. D. degree programme in Horticulture.

of Tamil Nadu Agricultural University subject to certain conditions.

3. Recommended the recognition of the B. Sc., degree in Agricultural Economics and Extension of Kabul University, Afghanistan for the purpose of admission to the Masters degree programme of Tamil Nadu Agricultural University under GOI quota with the condition that corrective courses will have to be prescribed in deficit areas.

4. Recommended the recognition of B. Sc. (Ag) degree offered at the University of Udaipur for the purpose of admission to the M.Sc. (Ag) degree of Tamil Nadu Agricultural University under GOI quota.

5. Recommended the recognition of the B. V. Sc and Animal Husbandry degree offered by the Assam Agricultural University for the purpose of admission to the M.V.Sc. degree programme of the Tamil Nadu Agricultural University under GOI quota.

Board of Examinations

The Board of Examinations met four times during the year under report. The following decisions were taken.

1. Decided that the class already awarded in respect of three M.V.Sc., students need not be changed

2. Ratified the action taken on the last date fixed for the receipt of applications and commencement of March, 1984 B. Sc. (Ag), and April, 1984 and June, 1984 B. V. Sc. Supplementary examinations and February, 1984 M. V. Sc., examinations traditional system)

3. Ratified the changes made in the appointment of External / Internal Examiners for March, 1984 B.Sc (Ag) and April, 1984 and June, 1984 B V. Sc., supplementary examinations and February, 1984 M. V. Sc. examinations (traditional system).

4. Reviewed, moderated and provisionally declared the results of March, 1984 B. Sc (Ag), April, 1984 and June 1984 B V. Sc. Supplementary examinations and February, 1984 M. V. Sc. Examination (traditional system)

5. Ratified the action taken on the date fixed for commencement of first and second semester examinations of the Diploma course in Agriculture of Sri Ramakrishna Mission Vidyalaya

6. Ratified the action taken on the appointment of Question Paper Setters / External Examiners for the first and second semester examinations of the Diploma course in Agriculture of Sri Ramakrishna Mission Vidyalaya.

7. Reviewed, moderated and provisionally declared the results of the first semester (June / July, 1984) examinations of the Diploma course in Agriculture of Sri Ramakrishna Misson Vidyalaya

8. Decided to allow moderation marks for all the students and resolved to add the marks along with the practical marks already awarded.

9. Approved the first and third semester examinations schedule of the Diploma course in Agriculture of Sri Ramakrishna Mission Vidyalaya.

10. Accepted the deletion of practical marks awarded to the subject 'Agricultural Meteorology (1 + 0 , in the first semester of the Diploma course in Agriculture of Sri Ramakrishna Mission Vidyalaya, as a special case.

Courses and Curricula

The trimester system of education was followed for all the under-graduate, post-graduate and doctoral degree programmes in all the disciplines of the University

Students Admission

A total of 8220 applications were eceived for seeking admission in I year class in Agriculture, Horticulture, Veterinary Science, Agricultural Engineering and Fisheries Science Seeking admission for 20 seats in the I year B. Sc. (Home Science), 19 applications were received. Consequent to the introduction of a common entrance examination for all the Professional courses, the subject marks in Higher Secondary Course and the entrance examination marks obtained by the candidates have been commuted to 250 and the candidates were selected in the order of merit for the above degree courses. The revised mode of selection of candidates took effect from the academic year 1984 - 85, replacing the existing interview system.

With regard to post-graduate degree programmes, 381 applications were received for 235 seats in M. Sc. (Ag). There were 20 applications against 10 seats in M E. (Ag) and 67 applications against 85 seats in M. V. Sc. As against 15 seats in M. Sc. (Hort), 40 applications were received. There were 33 applications against 5 seats in M. Sc. (FS&N) and ten applications against 5 seats in M F. Sc. As against 10 seats in Post-graduate Diploma in Plantation Crops, 8 applications were received.

The following Committees were appointed by the Vice-Chancellor for the selection of candidates to various Post-graduate degree programmes.

M. Sc., (Ag)	:	Dr. V. D. Guruswamy Raja Dr. K. R Ramaswamy, Thiru S. M. Ramiah Dr. K. Mohan Naidu (Only for M. Sc. (Ag) in Sugarcane Production) Dr. S Jayaraj Professor of the concerned Department
M. E. (Ag)	:	Dr. V. Subramaniyan Dr. V. D. Guruswamy Raja Dr. S. Jayaraj Professor of the concerned Department.

M. V. Sc.		Dr. P. Kothandaraman Dr. V. D. Guruswamy Raja Dr. S. Jayaraj Professor of the concerned Department.
M. Sc. (Hort) and M. Sc. (FS&N)	:	Dr. S. Muthuswami Dr. V. D. Guruswamy Raja Dr. S. Jayaraj Professor of the concerned Department.
M. F. Sc.	:	Dr. G. Jagatheesan Dr. V. D. Guruswamy Raja Dr. S. Jayaraj
Post-graduate Diploma in Plantation Crops	:	Dr. S. Muthuswami Dr. V. D. Guruswamy Raja Dr. J. B. M. Md. Abdul Khader Dr. N. Shanmugam

The candidates selected for admission to various under-graduate and post-graduate degree programmes were approved by the Vice-Chancellor.

University Examinations

The University Examinations for the supplementary students of the final B. Sc. (Ag) were conducted in March, 1984 and results were declared in June, 1984. For the fifth and final year, III and IV B. V. Sc., supplementary students and M. V. Sc., supplementary student examinations were conducted in April, 1984, June 1984 and February, 1984 respectively and the results were published during June, 1984 and August, 1984 respectively. The first and second semester examinations for the students of Diploma in Agriculture offered by Sri Ramakrishna Mission Vidyalaya were conducted in January and June / July, 1984 respectively and the results were published during April, 1984 and May 1985 respectively.

Trimester System of Education

During the year under report the details of the successful students in their degree programmes are given below :-

Name of the degree Programme	No. of students		
	Boys	Girls	Total
B. Sc. (Ag)	133	32	165
B. Sc. (Hort.)	27	8	35
B. V. Sc.	111	—	111
B. F. Sc.	22	—	22
B. E. (Ag)	71	1	72
B. Sc. (Home Science)	10	—	10
M. Sc. (Ag)	94	16	110
M. Sc. (Hort.)	11	4	15
M. V. Sc.	41	1	42
M. E. (Ag)	4	—	4
M. Sc. (FS & N)	3	5	8
Ph. D. (Agri.)	12	1	13
Ph. D. (Vety.)	14	—	14
Total	553	68	621

Convocation of the University

The Tenth Convocation of the University was held at the Veterinary College, Madras on 5.5.1984. His Excellency Thiru S. L. Khurana, Governor of Tamil Nadu, presided over the Convocation. Dr. V. Rajagopalan, Vice-Chancellor while welcoming the gathering, gave a brief account of the activities of the University. Dr. O. P. Gautam, Director General, I.C.A.R., New Delhi delivered the convocation address. The Pro-Chancellor announced insitution of the following prizes in the University.

1. Dr. O.P. Gautam medal for the best student in B.V.Sc. course securing highest aggregate marks in Animal Health subject.
2. Dr. Malcolm S. Adiseshiah medal to the best Ph.D. thesis in the 'Preventive Medicine'.
3. Thiru S.K. Mylsamy medal for the best M V.Sc thesis in the 'Poultry Science'.
4. K. J. Hospital medal to the best M.V.Sc. student in surgery.
5. Madras Kennel Club medal to the best M.V.Sc. thesis in Surgery.

A total of 596 degrees of Under-graduate, Post-graduate, Post-graduate Diploma and Ph. D. were awarded in person by the Chancellor. 536 degrees of Under-graduate, Post-graduate, Post-graduate Diploma and Ph.D. were awar-

ded *in absentia*. For the best academic performances, medals and prizes were also awarded to 77 students.

Seminars, Workshops and Conferences

1. A national seminar on "Climatology and Animal Production" was held at Madras Veterinary College, Madras on 11-12 April, 1984.

2. The Annual Convention and National Symposia of the Indian Society for Nuclear Techniques in Agriculture and Biology were held on 5-7 June, 1984 at Coimbatore.

3. The Scientific Workers' Conference on Agriculture was organised on 12th June, 1984 at TNAU, Coimbatore

4. A summer institute on 'Biofertilizers' sponsored by ICAR was organized in TNAU, Coimbatore on 27th June - 21st July, 1984

5. A national seminar on 'Appropriate Technology for value Added Product at Farm Level' was organized by the Department of Agricultural Processing on 27-28 August, 1984 at TNAU, Coimbatore.

6. A seminar on 'Rabies in Men and Animals' was held in August, 1984 at Madras Veterinary College, Madras.

7. A national seminar on 'Integrated Pests and Disease Management' and the first annual workshop on Agricultural Acarology' were held on 5-6 September, 1984 at Coimbatore.

8. A Seminar on 'Clinical Diagnostic Methods' was organised at Madras Veterinary College, Madras on 22nd September, 1985.

9. A national seminar on 'Buffalo Breeding' sponsored by ICAR was held on 22-23 September, 1984 at Madras Veterinary College, Madras.

10. Scientific Workers' Conference (Agrl. Engg) was held on 24th November, 1984 at College of Agricultural Engineering, TNAU, Coimbatore.

11. International seminar on 'Land Drainage in Deltaic Regions of Tamil Nadu' was held on 27th November, 1984 at Soil and Water Management Research Institute, Thanjavur.

12. Twelfth Annual Workshop of the All India Co-ordinated research project on 'Long Term Fertilizer Experiments' was held on 28th November, 1984 at Coimbatore.

13. The workshop cum working group meeting of the PL 480 project on 'Fate and Efficiency of Urea Based Fertilizers' was held on 22-29 November, 1984 at TNAU, Coimbatore.

14. A seminar on "Wetland Bananas" was held on 19th December, 1984 at Kumaraperumal Farm Science Centre, Trichy.

15. The Research Methodology Workshop on the TNAU-NABARD-ODA Project on ' Role of Credit in Rural Development in Southern Tamil Nadu" was held at Madurai on 20-21 December, 1984.

16. A National Seminar on 'Salt Affected Soils' was conducted on January 21-22, 1985 at Soil Salinity Research Centre, Trichy

17. All India Conference on 'Current Concepts on the Various Disorders of Ruminant Stomach' was orgased on 6-9 January, 1985 at Madras Veterinary College, Madras.

18. A national seminar on 'Avian Diseases' was held on 22-24 January, 1985 at Madras Veterinary College, Madras

Special Lectures

Name of the Scientist	Topic
1. Dr. D N. Borthakur, Director, ICAR North-eastern hill region.	Agriculture in India in 1980s. [Dr. C. V. Chalam Memorial Lecture]
2. Dr. I. Watanabe, Soil Microbiologist, IRRI, Philippines.	Biological Nitrogen Fixation in Rice Soil Ecosystems.
3. Dr. Melvin Daft, University of Dundee U K.	VA-Mycorrhizal Association with Crop Plants.
4. Dr. F. T. Last, Director, Institute Terrestrial Ecology, Edinburgh, U K	Succession of Ecto Mycorrhizal Association with Crop Plants
5. Dr. Robert Dixon, Tree Physiologist University of Minnesota, U. S. A.	Role of Ecto-Mycorrhizal Relation to Drought Resistance
6. Dr. P. A. Rogers Soil Microbiologist, IRRI, Philippines.	Role of BGA in Rice Soil Ecosystems
7. Dr. I. M. Grant Soil Microbiologist, IRRI, Philippines.	Interaction between Ostrachods and Blue Green Algae in Rice Soil Ecosystem.
8. Dr. S Edison, Joint Director, ICAR Research Complex, Arunachal Pradesh.	North-eastern Region with Special Reference to Agriculture.

Protection Studies on 5th September, 1984.

4. IDA Mission for appraisal of NARP Phase II consisting of Thiru V. Ramakrishnan, Dr. Apparao, Mr. Bridge and Mr. Wilcocks visited the North Eastern Zone, Cauvery Delta Zone and Southern Zone of Tamil Nadu.

5. The ICAR team comprising of Dr. U. C. Upadhyaya and Dr M. Aravindhan visited TNAU campuses at Madras, Madurai, Tuticorin, Killikulam and Coimbatore on 13-17 February, 1985.

6. Dr. K. Kalimuthu, Hon'ble Minister for Agriculture, Tamil Nadu declared open the new buildings at Cotton Research Station, Srivilliputhur, on 21st February, 1985.

7. Thiru R. Rajagopala Reddy, Hon'ble Minister for Agriculture, Andhra Pradesh visited Coimbatore campus on 27th March, 1985.

8. Dr D P. Motiramani, World Bank Consultant participated in the inaugural function of the Centre for Soil and Crop Management Studies on 28th November, 1984.

9. Hon'ble Union Minister for Agriculture, Shri Rao Birendra Singh and the Director General of ICAR. Dr. O. P Gautam visited the Sheep Breeding Research Station, Sandynallah on 23rd May, 1984.

10. A High Level Delegation comprising of Dr. J. O. Dunbar (Kansas State University), Dr. O Glen Hall (University of Tennesse), Dr. W. H. Janssen (USAID) and Mrs. Priscilla Boughton (BIFAD, Washington) visited TNAU, Coimbatore and Madras Veterinary College on November 23-24, 1984.

Awards and Prizes

1. Thiru L. S. Kandasamy, Associate Professor of Tamil was awarded "Muthamizh Kavalar Prize" on 7th October, 1984 at New Delhi for his research article '*Pazhanthamizhar Velanmai Nutpangal*' (Agriculture Heritage of Tamils).

2. Dr. G. V. Kothandaraman, Professor and Head, Department of Soil Science and Agricultural Chemistry was awarded with PPCL - ISLC Special award for his research on the use of mussorie rock phosphate on 27th November, 1984 at UAS, Bangalore

3. Dr. K. A. Ponnusamy, Assistant Director of Extension Education received Gold Medal from the Hon'ble Union Minister for Agriculture and Rural Development, Sri Buta Singh for his research entitled "Further Studies on Yield Gaps in India's Crop Production" on 2nd February, 1985 at New Delhi.

Foreign Visits Undertaken by the Faculty Members

1 Dr. A Amirthadevarathinam, Associate Professor of Agricultural Botany attended the upland rice training programme at IRRI, Philippines from July to December, 1984.

2. Thiru S. Vairavan, Associate Professor of Agricultural Botany un-

derwent a training programme at IRRI, Philippines from 6th February to 25th May, 1985.

3. Thiru T. Natarajan, Associate Professor of Microbiology, underwent UNDP fellowship training from March to September, 1984 at University of California, USA.

4. Thiru K. Chendrayan, Assistant Professor of Microbiology underwent UNDP fellowship training at Brookhaven National Laboratory, Upton, New York, USA during April-October, 1984.

5. Dr. T. S. Manickam, Professor of Agricultural Chemistry was on tour to USA from 18th July-12th August, 1984 under the Indo-US collaborative project.

6. Dr. P. P. Ramaswami, Associate Professor of Soil Science was on tour to USA from 18th July-16th August, 1984 under the Indo-US collaborative Project.

7. Dr. M. Thangaraj, Associate Professor, Department of Crop Physiology had been to IRRI, Philippines for his post-doctoral fellowship from April, 1983 to April, 1985.

8. Prof. R. K. Sivanappan, Director, Water Technology Centre, visited Sweden from 1-15 June, 1984 and attended the International seminar on 'Relevance of River Basin Approach for Co-ordinated Land and Water Conservation and Water Management held at Linkoping, and Bio-energy 1984 World Conference at Goteborg.

9. Dr. R. Kulandaivelu, Professor of Agronomy and Dr. P. Kandaswamy, Professor of Soil Science, Water Technology Centre attended the training programme on Irrigation Water Management held from 13th August to 21st September, 1984 at IRRI, Philippines.

Finance and Accounts

The following statement indicates the classified summary of the transactions of the University during 1984 - 85.

Details	Amount (Rs. in lakhs)	
Opening balance as on 1.4.84		180.48
Receipts		
State Grant		
Agriculture	674.61	
Veterinary	256.55	
Fisheries	25.64	
		956.80
ICAR Grant		
For Agriculture Research Schemes	240.74	
For Development Grant	120.60	
For Veterinary Research Schemes	16.16	
Grants to K. V. K , Pondicherry	2.32	
		379.82
Government of India Grant		30.88
Outside Agencies		
For Foreign and Indian Agencies Research Schemes	17.90	
For National Service Scheme	0.67	
		18.57
Other Receipts		
Agriculture (Fees, Rent and Farm Receipts)	157.29	
Veterinary - do -	29.96	
Fisheries - do -	0.72	
		187.97
Other Deposits, including Loans and Advances		368.69
State Govt. Loan for H. B. A.		—
Total		2123.21

Expenditure

Sl.No.	Details	Amount (Rs. in lakhs)
1.	Agriculture - Non - Plan	527.29
2.	Agriculture - Plan	145.58
3.	Veterinary - Non-Plan	154.54
4.	Veterinary - Plan	113.25
5.	Fisheries - Plan	26.20
6.	ICAR - Fully Financed Schemes	153.77
7.	ICAR - Partly Financed Schemes	103.83
8.	Govt. of India Schemes	29.48
9.	Other Agencies	20.96
10.	Capital Works	
	i) Agriculture	41.59
	ii) Veterinary	7.76
	iii) Fisheries	3.47
11.	ICAR Development Grant	155.63
12.	Hill Area Development Programmes	1.96
13.	TNAU Employees Pension Fund	24.00
14.	House Building Advance	—
15.	Krishi Vigyan Kendra, Pondicherry	2.32
16.	Loans and Advances and Deposit Transactions a/c	346.73
	Total	1858.36
	Closing Balance	264.85
	Grand Total	2123.21

The Finance Committee considered the proposal for the Revised Estimate for 1984-85 and Budget for 1985-86 of TNAU and recommended the Estimates to the Board of Management. The Annual Audited Accounts for the year 1983-84 have been finalised and placed before the Finance Committee. As the audit of accounts for 1984-85 has not been completed, the expenditure details furnished above represent only unaudited and reconciled figures.

Contribution of Outside Agencies

The following outside agencies have contributed funds to carry out research as indicated against each during the year under report.

Name of the Agency	Name of Research Project
1. M/s Sandoz Company, Madras	Adhoc project on Testing Fertilade.
2. UNICEF, New Delhi	Scheme on Mal-nutrition Programme.
3. NABARD, Bombay	Project on Credit for Rural Development in Southern Tamil Nadu.
4. Coir Board. Kerala	Scheme on Coir Pith as Manure in Agricultural Farms
5. State Bank of India	Institution of a Chair in Agricultural Marketing in CARDS.

Scholarship

The scholarships offered by the following Organisations were accepted during the year.

Name of the Donor	Amount	Purpose
1. Southern Petrochemical Industries Corporation Limited.	Rs. 23,200/-	M. Sc (Ag) Agronomy
2. M/s Hindustan Lever Limited Bombay	Rs. 15,000/-	M.Sc.(Ag) Crop Physiology
3. Velsicol Chemical Corporation, Chicago, Illinois, U S A.	Rs. 15,000/-	M. Sc. (Ag) Agronomy
4. M/s. Gujarat Agro Industries Corporation Ahmedabad.	Rs. 15,000/-	M. Sc. (Ag) Entomology

Prizes and Medals

The following prizes and medals were instituted during 1984-85.

Name of the Donor	Amount Rs.	Date of Institution
1. Award for the best M. V. Sc., Poultry Thesis (Thiru S. K. Mylswamy Gownder, Erode).	10,000	19.5.84
2. Dr. O. P. Gautam Medal for the best student in B. V. Sc., securing highest aggregate marks in Animal Health subject	5,000	28.6.84
3. Dr. Malcolm S. Adiseshiah for the institution of endowment award for the best doctorate thesis in Veterinary Preventive Medicine	10,000	19.7.84
4. Dr. K. Jagadeesan, Director, K. J. Hospital, Madras for the Institution of endowment award for the best M. V. Sc. student in surgery.	7,000	4.8.84
5. President, Madras Kenel Club for the institution of the endowment award for the best research thesis in M.V.Sc. Surgery.	5,000	22.12 84
6. Institution of endowment of Dr. J. Chandramohan, Professor of Agricultural Botany, (Retd) Coimbatore for the award of highest GPA/marks in Ph. D. Agricultural Extension.	5,000	15.3.85
7. Institution of endowment of Dr. K. Ramiah, Swathi Malleswaram, Bangalore for the award of additional amount for the existing prize, viz. Dr. Ramiah prize	5,000	15.3.85

Grant-in-aid by the University

The following matching grants were sanctioned during 1984-85.

1. Matching grant for the Madras Veterinary College Students' Association for the year 1982-83.	Rs. 5,000.00
2. Matching grant for staff club, A. C. & R. I., Madurai.	Rs. 1,600.00

3. Matching grant for the Madras Veterinary College Atheletic Association for the year 1982-83.		Rs. 5,000.00
4. Balance amount of Grant-in-aid to SIHA for 1983-84.		Rs. 3,132.44
5. Matching grant for 1983-84 to Ladies Club, Madurai.		Rs. 560.00
	Total	Rs. 15,292.44

University Budget Estimate for 1985-86

Annual Financial Estimate of Tamil Nadu Agricultural Univesity has been approved by the Finance Committee/ Board of Management for a gross appropriation of Rs. 1845.32 lakhs (including ICAR, Government of India and other Agencies Loans and Advances and Deposit transactions).

A sum of Rs. 1080 12 lakhs is expected as grant from the State Government to the University for the year 1985 - 86 for implementing various education and research programmes and also for extension activities. Grants from I.C.A.R. will be about Rs. 456.97 lakhs including ICAR Development grant for implementing NARP schemes. A grant of Rs. 29.66 lakhs and Rs. 30.44 lakhs is expected from Government of India and other agencies respectively. The University receipts will be in the order of Rs. 175. 46 lakhs (approximately.)

Audit

The audit certificates for 1982-83 have been forwarded to ICAR and Government of India for almost all the schemes sponsored by them. The audit of general fund accounts of the University upto 1983-84 have been completed. The general result of the audit is satisfactory.

3. EDUCATION

AGRICULTURAL COLLEGE AND RESEARCH INSTITUTE, COIMBATORE

Dr. K. R. Ramaswamy continued to hold the post of the Dean (Agri.). The College continued to offer B.Sc. (Ag), M Sc. (Ag) and Ph.D degree programmes under the trimester system of education besides offering courses for the B.E.(Ag) and B Sc. (Hort) degree programmes.

Admission

The College re-opened on 27 8.1984 for II and IV B Sc. (Ag) classes and on 13.8.1984 for III B.Sc. (Ag) classes. The I year B.Sc. (Ag) course commenced on 15.10.1984. The details on the number of students in I to IV year B.Sc. (Ag) were as follows :

	Students on roll		
	Boys	Girls	Total
I B Sc. (Ag)	157	116	273*
II B.Sc. (Ag)	98	36	134
III B Sc. (Ag)	99	30	129
VI B.Sc. (Ag)	64	45	109
Grand Total	418	227	645

* Includes 100 Students admitted for the Agricultural College, Killikulam, (Tirunelveli district).

Educational Tour

The final year students went on educational tour from 16.2.85 to 10.3.85 in two batches. They visited the ICAR New Delhi; ICRISAT and Andhra Pradesh Agricultural University, Hyderabad; Indian Institute of Horticultural Research and University of Agricultural Sciences, Bangalore; Arey Milk Colony, Bombay; Forest College and Research Institute and Indian Institute of Remote Sensing, Dehradun; and Haryana Agricultural University, Hissar.

Village Stay Programme

The final year B. Sc. (Ag) and B.Sc. (Hort) students underwent one month 'Village Stay Programme' from December 6, 1984 to January 4, 1985 in different villages of Coimbatore, Periyar, Salem, Dharmapuri and Tiruchirapalli districts of Tamil Nadu. Each student was attached to a group which stayed with a farm family for learning day-to-day farm operations by themselves through their active participation. The students studied the social, psychological, cultural and economical environment of the rural people. They gained direct experience by their involvement with the farmers in carrying out various farm operations related to paddy, millets, cotton, tapioca, tobacco, betelvine, turmeric and vegetables. The students visited the State seed farms, agricultural depots, animal husbandry centres, co-operative milk unions, poultry farms, co-operative societies and

parasite breeding centres located in their area and studied their activities.

Group discussion by students on their experiences through Village Stay Programme was broadcast by AIR, Coimbatore on 18th February, 1985.

Fourteen selected teachers and the local extension staff of the Directorates of Agriculture and Horticulture, Tamil Nadu State guided the students during the programme.

Scholarships

The details of scholarships awarded during 1984-85 are given below :

Sl. No.	Details of Scholarships	Number of recipients	Amount Rs.
1.	B C. Loan Scholarship	2	1,000
2.	S.C. Scholarship	94	2,26,740
3.	*Pondicherry State Scholarship*	10	28,560
4.	S.C. Loan Scholarship	90	1,15,400
5.	National Merit Scholarship	18	45,240
6.	M/s. Madras Fertilizers	2	7,636
7.	M/s Sandoz	1	4,511
8.	USAID (ADC)	2	74,174
9.	B. C Scholarship	118	1,13,767
10.	M/s. Coromandal Ltd ,	1	4,523
11.	M/s SPIC Ltd.,	1	10,906
12.	M/s. Hindustan Ltd.,	1	19,413
13.	State Scholarship for Teachers' Children	2	1,200
14.	M/s. ASPEE Foundation	1	8,829
15.	National Loan	10	7,025
16	Bank of Baroda	1	900
17.	M/s. Alkali Chemicals	1	4,000
18.	M/s Voltas Ltd.,	1	3,013
19	M/s. Indofil Ltd.,	1	1,200
20.	M/s. Bayer and Company Ltd.,	1	2,786
21.	National Foundation for Teachers Welfare	4	2,000
22.	Andaman-Nicobar	6	11,175
23.	Burma and Sri Lanka Repatriates	1	1,525
24.	Monsanto Chemicals	1	12,500
25.	E. I. D. Parry and Company Ltd.,	3	3,6[illegible]0
26.	M/s. Shaw Wallace	1	1,162
27.	General Cultural Scholarship Scheme	2	19,377
28.	GOI Merit cum Means	32	48,375
29.	Nagaland	1	2,800

30.	Adhoc Merit	30	4,800
31.	Velosicol Overseas	1	12,500
32.	M/s. Indian Explosives	2	15,000
33.	M/s. Gujarat Agro Industries	1	15,000
34.	Bright Student Award	1	1,000
35.	Human Resources Development Programme	6	4,800
36.	ICAR	110	2,20,363
	Interest		14,179
		Total	10,60,979

Students' Hostel

During the year 1984-85, 958 students from the faculties of Agriculture and Horticulture including 310 women students were residing in the hostel. The women students of Agricultural Engineering College were also accommodated in the womens' hostel.

To improve the amenities to the messes and rooms, furniture and vessels to the value of Rs. 96,000/- were purchased. Electrical goods to the value of Rs. 20,000/- were also replaced during the year. The mess in the womens' hostel was provided with L. P. gas connection. A diesel generator was purchased at a cost of Rs. 90,000/- to supply power whenever there is power cut.

The day to-day activities of the hostel were looked after by a Warden, assisted by a team of five Deputy Wardens including one Lady Deputy Warden.

All the policies and administrative decisions concerned with the hostel were taken care of by the newly constituted Students' Welfare Committee with the Dean (Agri.) as the Chairman from this year. All the hostel accounts were placed before the Students' Welfare Committee and got approved after detailed discussion. During the year the Students' Welfare Committee met five times.

Most of the academic requirements like stationaries besides eatables and cosmetics for the students were supplied by the Students' Canteen. Total transaction of the Students' Canteen for 1984-85 was about Rs. 2.91 lakhs. The Students' Canteen was run on no-loss-no-gain basis. A new bottle cooler was purchased for the canteen during the year. The Canteen Committee met at frequent intervals to review the functioning of the canteen and offer suggestions for further improvements.

Students' Club

The Debating Society was inaugurated by Deepam Na. Parthasarathy. Thiru M. Sylendra Babu of II M.Sc. (Ag) represented TNAU at the inter-university debate on 'Co-operation' held at Bhubaneshwar, Orissa and won a special prize. The members of the debating society won many prizes in the inter-collegiate competitions in debate, composing songs and creative writing.

The drama troupe of the club won the best drama award at the CASCALL-85, Cultural Programme, conducted by

the PSG college of Arts and Science, Coimbatore in February, 1985. Thiru M. Sylendra Babu of II M Sc. (Ag) won the best dancer prize in this programme. The College orchestra won the SPECTRA shield for the second year in the intercollegiate music competition at the PSG college of Technology, Coimbatore in February, 1985. The TNAU won also the second best team prize in this competition.

The members of the Social Service League of the Students Club are running a night school to benefit about 100 children from the surrounding villages. Free books, notebooks, slates and clothes were distributed to the children. An adult literacy programme was commenced at Seeranaickenpalayam village in March, 1985.

Muthamizh vizha was celebrated for three days in which leading writers, poets and artists took part. The Annual club day was conducted with Thiru K. Liakath Alikhan, Chairman, Agro-Industries Corporation and Member, Board of Management, TNAU as the chief guest.

Sports and Games

The Foot-ball team won the prestigious Kalaimani Memorial Trophy, organised by TNAU, during March 1985. The cricket team won seven out of eight matches in the Coimbatore District Cricket League and was promoted to the second division from third division. The Kabaddi team secured the second place in the inter-collegiate tournament held in March, 1985. At the CICAA inter-collegiate tournament, the Tennis team reached the finals and secured the runners up.

The Coimbatore Athletic Association organised a two-day inter-collegiate athletic meet at TNAU grounds on 20th and 21st February, 1985. Thiru K. Periaiah of III B.Sc (Ag) won the first position in 110 metres hurdles and 400 metres hurdles events. Thiru C. Chinnasamy, Senior Ph.D. won second place in hammer throw and javelin throw events.

Tamil Nadu Agricultural University teams in Cricket, Foot-ball and Hockey participated in the inter-university tournaments conducted at Waltair, Nagpur and Mysore respectively.

Thiru A. K. Ravichandran of III B. Sc. (Ag) was selected to represent the Periyar district Basket-ball team in the Pongal tournament at Trichy. Thiru M. Mark Devasagayam of IV B Sc. (Ag) was a member of the Coimbatore district Junior Hockey team at the inter district tournament.

Improvement work to the existing play ground was taken up to improve the athletic track and hockey ground. The tennis court was provided with wire-mesh screen on all four sides. Under the ICAR Development Grant, sports goods and equipments to the value of Rs. 1.50 lakhs were purchased during the year.

National Cadet Corps

NCC Unit of the University (4/4 TNBN NCC) functioned under the command of Dr. P. Rajasekaran. The first parade for the year started during the first week of May, 1984, with a strength of 100 cadets. Out of this, 46 were newly recruited for the year 1984-85.

Twenty NCC cadets participated in the combined Annual Training Camp, held at Seeliyur from 20-31 January,

1985 and four cadets attended the Advaned Leadership Training Camp held at Neyyar Dam (Kerala State) from 8-28 May, 1985

The Basic Leadership Camp held at Gurgaon (Haryana State) during May 26 to June 8, 1985 was attended by two cadets.

Achievements of the University NCC Unit

1. Senior cadet Under - Officer Thiru D. Rajkumar of III B. E. (Ag) won the first place in Rock Climbing at Advanced Leadership Training Camp held at Neyyar and was selected as the best cadet in South India

2. Cadet Under - Officer Thiru A. Karnan got second place in "Bayonet Fighting" held at Seeliyur camp.

3 Cpl. G. Ramesh was selected preliminarily for the 'Republic Day Shooting Parade Competition" scheduled to be held on 26th January, 1986 at New Delhi

National Service Scheme

Three units of NSS were functioning at the College in 1984-85 and each unit adopted one village for intensive activities. Volunteers from Agricultural College involed in activities like weed control, rat eradication, afforestation schemes and in promoting kitchen gardens in the urban areas. One volunteer participated in the International Youth Camp held under the Youth Exchange Programme organised by the Annamalai University.

FACULTY OF AGRICULTURAL ENGINEERING, COIMBATORE

Prof. R. K. Sivanappan continued to hold the post of Dean i/c upto 8.6.84. Dr. V. Subramaniyan assumed charge as the Dean of this Faculty on 9.6.1984.

The Faculty offered B. E. (Ag) degree programme besides offering courses in Agricultural Engineering for B. Sc. (Ag) and B. Sc. (Hort) students and sericulture diploma students. This faculty continued to offer M. E. (Ag) degree programmes in Farm Machinery and Soil and Water Conservation.

Admission

Seventy eight students were admitted to I B. E. (Ag) course. The first trimester for the I B. E. (Ag) commenced on 15 '0 1984 and for the II, III and IV B. E. (Ag) on 2.1.85, 7.1.85 and 4.2.85 respectively. The strength of students in the second, third and final years was 75, 80 and 40 respectively.

Examinations

Regular tests and examinations were conducted as per the regulations of the trimester system of teaching. The eighth supplementary examination was held during November, 1984.

Educational Tour

The III B.E. (Ag) of four-year-stream students were on tour from 2.7.84 to 9.7.84 and they visited the following Industries/Institutions in Tamil Nadu.

i. M/s Seshasayee Paper and Boards Ltd., Erode

ii. NAFED Processed foods, Vellore.

iii. Institute of Hydraulics and Hydrology, Poondi.

vi. Central Institute of Plastic Engineering and Tools, Guindy.

v. 'J' Farm, Madras.

iv. M/s. National Engineering Company, Madras.

vii. Agricultural Implements Workshop and Paddy Processing Centre, Tiruvarur.

viii. Melur Plough Works, Melur.

ix. Tractor Workshop, Madurai.

x. Fisheries College, Tuticorin.

xi. Southern Petro Chemical Industries Ltd., Tuticorin.

Practical Training

The III B.E (Ag) students of four-year-system were on practical training from 2.1.85 to 3'.1.85 in the following organisations :-

a) M/s. PSG Industrial Institute, Coimbatore.

b) Government Tractor Workshop, Coimbatore.

c) Thudiyalur Co-operative Agricultural Society, Thudiyalur.

d) Assistant Executive Engineer (Mech), Lawley Road, Coimbatore.

e) Soil Conservation Scheme, Ooty.

f) River Valley Project, Mettupalayam.

g) Command Area Development Programme, Gobi.

Scholarships

The details of scholarships awarded during 1984-85 are detailed below :

Details of Scholarships	No. of recipients
ICAR merit Scholarship	24
AP Government Scholarship	3
National Loan Scholarship	4
NCERT Scholarship	1
S.C Loan and Scholarship	34
Teachers' Welfare Scholarship	1
B.C Scholarship	57
Adhoc Merit Grant	7
Farmers' Welfare Scholarship	2
TNAU Merit Scholarship	24
National Merit Scholarship	8
Government of Pondicherry Scholarship	3

Students' Hostel

Prof. K. R. Swaminathan, Head of Department of Agro-Energy continued to be the Warden upto 31.7.1984 and Prof. R. Karunanithi, Head of Department of Farm Machinery took charge of the post of Warden from 1.8.1984. The Warden was assisted by two Deputy Wardens. Students representatives assisted them in the various activities connected with the functioning of the hostel. In the hostel 247 students stayed in 1984-85.

National Service Scheme

A total number of 100 volunteers of NSS engaged themselves in the following activities :-

* Tree planting at the Selakarachal village in collaboration with the Department of Agro-Energy on 9.12.84 and 17.3.85.

* Parthenium eradication and cleaning in and around the main campus of the University.

* Blood donation by NSS volunteers at Government Head Quarters Hos-

pital, Coimbatore on 26.1.85 on the eve of Republic Day

* Projecting film show about the use of improved farm implements at Selakarachal village'

FACULTY OF HORTICULTURE, COIMBATORE

Dr. S. Muthuswami continued to be the Dean of this Faculty during the report period

The Faculty offered B.Sc. (Hort), M.Sc. (Hort) and Ph.D., degree programmes in Horticulture. A Post-graduate diploma course in 'Plantation Crops' was offered at the Horticultural Research Station, Thadiyankudisai. Besides, courses in horticulture were offered to the students of B Sc. (Ag) and B.E. (Ag) degree programmes.

Admission

Forty students were admitted to I B.Sc. (Hort) course including one readmission during 1984 85. The first trimester commenced for the I B Sc. (Hort) on 15.10 1984. For the II B.Sc. (Hort) the course commenced on 27.8.84 and for III B.Sc. (Hort) on 27.8.84. The strength of students in the second, third and final years of B.Sc. (Hort) was 42, 48 and 32 respectively

Examinations

Examinations were conducted as per the regulations of the trimester systems for teaching. The supplementary examinations were also conducted during November, 1984 and May, 1985

Educational Tours

The final B.Sc. (Hort) students underwent training in coffee cultivation at Horticultural Research Station, Yercaud from 10.6.84 to 29.6.84. They also went on an All India study tour from 17.2.85 to 9.3.85 and they visited the following institutions/places.

* University of Agricultural Sciences, and Common Wealth Institute of Biological Control at Bangalore.
* Arey milk colony, Tata Institute of Social Sciences, Tata Institute of Fundamental Research and Baba Atomic Research Centre at Bombay.
* Haryana Agricultural University, Hissar.
* Indian Agricultural Research Institute, Nuclear Research Laboratory and Indian Institute of Mass Communications, New Delhi.
* Forest Research Institute, Dehradun.
* ICRISAT, AICDIP, and APAU at Hyderabad.
* Madras Veterinary College, Poultry Research Station and Nandanam Milk Colony at Madras.

The III B.Sc.(Hort) students were on tour from 10.6.84 to 29.6.84 for the study of plantation crops and again on tour from 3.8.84 to 10.8.84 to the different Horticultural Research Stations for the study of fruit crops.

Scholarships

The details of scholarships awarded during 1984-85 are given below :-

Students' Hostel

Dr. A. Abdul Kareem, Professor and Head, Department of Agricultural Entomology, acted as Warden upto 20.6.84. He was assisted by three Deputy Wardens. Dr. S. Ramiah, Professor and Head, Department of Agronomy, assumed charge as Warden on 1.7.84. Dr. A. Rajamannar, Associate Professor of Soil Science and Agricultural Chemistry was the Deputy warden upto 31.10.84. In his place Dr. S. Subbiah, Associate Professor and Head, Department of Physical Science was posted as the Deputy warden from 21.11.84. Dr. S. Rajasekaran, Associate Professor of Agricultural Botany was one of the Deputy Wardens upto 30.4.84 and Thiru C. Ramalingam, Associate Professor of Agricultural Botany succeeded him from 10.5.85 onwards. Selvi G. Manimegalai. Associate Professor and Head, Department of Home Science continued as Deputy Warden for Ladies' hostel from 7.12.83 There were 450 students in the hostel. Medical facilities were provided to the students by a full-time Medical Officer.

Students' Club

The Students' Club was inaugurated by Thiru A. D. Jeyampandian, B Sc. (Tech), Member, Board of Management, TNAU on 19.12.1984. The 'Orientation Day' for the I B. Sc. (Ag) students was celebrated on 6.11.1984.

Thiru Dwarakanath Rao of III B. Sc. (Ag) participated in the National Debating Competition on Cooperation held at Bubaneshwar and won the consolation prize.

Tvl. Ramesh Chandran, Ravichandran and Alagu Nagendran of final B Sc. (Ag) won first prize in Fantasa held at Lady Doak College, Madurai. Thiru Thananjeyan of IV B. Sc. (Ag) won second prize in English Essay competition, conducted by S. V. N. College, Madurai Thiru Nandagopal of IV B. Sc. (Ag) won first prize in short story competition held at Thiagaraja Arts College, Madurai, Thiru Venkatachalapathy of IV B. Sc. (Ag) won two second prizes in Solo Western and Classical dance competion conducted at Alagappa Engineering College, Karaikudi.

Under the auspices of the Debating Society, Ilakkia arangam was conducted on 2.1.85.

An inter-collegiate cultural competition was organized on 7-8 March, 1985.

Sports and Games

The college Annual Sports Meet was held on 30.4.85. Thiru K. Nepoleon of III B. Sc. (Ag) won the individual championship and Thiru P. Anandan of IV B Sc (Ag) won the Pentathlon championship. Selvi R. Poongothai of I B Sc (Ag) got the championship in track events and Selvi Mascarenas Liset of II B. Sc (Ag) got the championship in field events.

In the College cross country race Thiru K Subburaj of III B.Sc. (Ag) won the first prize for men and Selvi Anlet Sophia of III B.Sc. (Ag) got the first prize for women.

Inter-collegiate Hockey tournament for Dean's Trophy was conducted from 26.9.84 to 29.9.84.

National Service Scheme

An unit of the National Service Scheme (NSS) was actively functioning at the Agricultural College and Research Institute, Madurai since 1975. One hundred students were on the roll during the period under report.

The NSS Programmes were grouped into two categories, *viz.*, NSS Regular Activities and NSS Special Camp Activities.

Regular Activities

1. Cleaning the swmming pool and the surrounding area of the swimming pool for reviving swimming pool club.

2. Clearing bushes on both sides of the road leading to the main building from Dr. M. K. Illam and levelling the road.

3. Planting avenue tree seedlings in front of Valluvar Illam on the boundary of the foot-ball ground and providing fences.

4. Maintaining and trimming the lawn in front of the staff club.

5. Controlling the unauthorised entrants and also regulating the entrants at cinema shows.

6. Helped in the conduct of the entrance examinations for the professional courses held on 14th and 15th July, 1984.

7. Rendered help during the Farmers' Day celebration.

Special Camp Activities

The special annual camp for the year 1984-85 was conducted at Rajakkur village, about 15 km from the college. Forty-three students were enrolled besides four youth volunteers belonging to that village and the camp was conducted for six days. Dr. T. Kumaraswami, the Dean of the College inaugurated the camp and Dr. M. Muthiah, Professor of Physiology, Madurai Medical College was the Chief Guest.

During the camp period, the following service programmes were conducted:

1. Under afforestation programme, one hundred tamarind seedlings were planted and fence was provided to each seedling.

2. On the bank of the village lotus tank 45 pits were dug for planting coconut seedlings.

3. One-day camp for treating cattle was organised and the staff of Animal Husbandry Deparment rendered their services in treating the animals, birds and dogs.

4. Demonstrations were conducted on the preparation of neem coated urea and other slow release form of fertilizers for the benefit of the farmers.

5. One-day group discussion was arranged by the NSS. Experts from different disciplines and the farmers participated in the discussion. The practical problems were discussed and suggestions given.

6. During the evening hours, a night school was conducted for the benefit of the children.

National Cadet Corps

The National Cadet Corps, D/12 company of this College was attached to 7 (Tamil Nadu) Battalion NCC, Madurai. Forty-five cadets were enrolled from second, third and final B. Sc. (Ag) classes. The cadets were given training in foot-drill, arms-drill, weapon handling, field craft, map reading, first aid and civil defence in 40 parades of two hours duration each.

Six cadets attended the centrally organised Trek near Pune from November 20, 1984 to December 3, 1984. Eleven cadets and one officer attended the combined Annual Training Camp at VHNSN College, Virudunagar from January 5 - 16, 1985. Lt. S. Subramanian, NCC officer received the rolling shield for the 'Best Disciplined Company' during the camp. The cadets participated in cycle expedition to Mankulam and Melur. Eight cadets appeared for 'B' certificate examination at Government Arts College, Melur and five cadets passed the examination.

AGRICULTURAL COLLEGE, KILLIKULAM, TIRUNELVELI

The third Agricultural College of TNAU was established at Killikulam in 1984 and Dr. T. K. Kandaswamy, joined as the Dean of the College on 6.11.1984 and continued to be the Dean during the year under report. One hundred students were admitted during the academic year, 1984-85. The students had completed the first year course at Agricultural College, Coimbatore. The infrastructural facilities are being developed.

MADRAS VETERINARY COLLEGE, MADRAS

Dr. P. Kothandaraman continued to be the Dean of the college during the year 1984-85.

Admission

One hundred and twenty-six students were admitted to B. V. Sc., course and twenty-nine to the M. V. Sc., degree programme. Dates of commencement of the courses for the different years are given below:-

I B. V. Sc.	:	15.10.84
II B. V. Sc.	:	12.11.84
III, IV and Final B.V.Sc.	:	13.2.85
M. V. Sc.	:	3.1.85

Educational Tours

Educational tours were not undertaken by the students during the year under report.

Scholarships

The details of scholarships awarded during 1984-85 are given below :-

Sl. No.	Name of the Scholarships	No. of recipients.	Amount (Rupees)
1.	Adi-dravida & Tribal Welfare Scholarship	110	1,12,347
2.	Adi-dravida Loan Scholarship	96	1,35,070
3.	Backward Class Scholarship	106	1,21,764
4.	Backward Class Loan Scholarship	4	2,000

5.	Adhoc Merit Grant for SC Students	15	4,500
6.	Bright Students Award for SC Students	2	3,420
7.	National Merit Scholarship	13	32,610
8.	National Loan Scholarship	7	8,245
9.	Ex-servicemen Scholarship	2	1,131
10.	ICAR Merit Scholarship	42	54,000
11.	State Scholarship for Children of School Teachers	1	1,770
12.	National Foundation for Teachers' Welfare Scholarship	9	5,000
13	Merit cum Means Award for SC Students	2	5,000
14.	TNAU Merit Scholarship	16	13,699
15.	TNAU SC/ST/BC Scholarship	7	5,876
16.	TNAU Merit Scholarship for P. G. Students	11	12,233
	Total	443	5,18,665

Students' Hostel

Dr. V. Ulaganathan, Professor and Head, Department of Animal Genetics, served as Warden and he was assisted by three Deputy Wardens. The Assistant Accounts Officer and other office staff rendered the supporting service to the efficient running of the hostel. Student office bearers were also selected to assist in the various spheres of the functioning of the hostel.

Two messes were run to cater to the needs of the inmates. The messes functioned under the dividing system During 1984-85, additional vessels were provided, the gas connection improved and spares purchased.

For entertainment purpose nine new records were purchased and speaker boxes were fixed in the lawn, play ground, and messes. During the year 10 films were screened.

A Ladies' Hostel to accommodate 20 lady students was annexed by converting the temporary sheds.

Students' Club

Students of this College were deputed to participate in various competitions held in the city colleges, Madras University campus, World University Service and Tamil Nadu Agricultural University main campus, Coimbatore. Thiru B. Srikanth of Final B. V. Sc. won the first prize in oratorical competition conducted by the Madras University. He came second in slogan forming competition held by D. G. Vaishnava college for their anti-smoking campaign.

Tvl. B. Srikanth of final B. V. Sc. and G. N. Murali of III B. V. Sc were elected as convenors for Social Action and Community Development, and Science respectively in the World University Service. Selvi J. Jebarani and Selvi. R. Rajeswari of final B. V. Sc. won the first and second prize in the "Essay Competition" conducted by the World University Service. Thiru G. Dhinakar Raj of final year and Thiru J. Seshu of IV B. V. Sc. won second prize in the Mitafest quiz competition at Madras Institute of Technology.

Thiru. John Sam Babu of III B.V.Sc. participated in a dabate conducted by Madras Institute of Technology and won third prize. He also won second prize in an 'Oratorial Competition' conducted by the Tamil Nadu Agricultural University for International Youth Year celebrations.

Thiru. V. Karmegham of III B. V. Sc. participated in several Poetry competitions conducted by city colleges and won special prizes.

Sports and Games

Dr. P. Mahalingam, Ph. D., continued as the Sports Secretary for the year 1984-85.

The College atheletes, both men and women, took part in the Pentathlon championship held at Coimbatore during the year 1984 and won various prizes.

Thiru D. Sundararaj, Physical Director, Madras Veterinary College, was nominated as the Manager of the Tamil Nadu Agricultural University Foot-ball team for the South Zone inter-university tournaments held at Nagpur.

Intra-mural tournaments in all the games were conducted during April - May, 1984 and the students took active part. The Annual Sports Meet scheduled during November, 1984 was postponed due to cyclone in Madras and it was conducted in a grand manner in June, 1985.

Dr. K. S. Nair Trophy for the inter-class games championship and May and Baker Trophy for the inter-class sports championship were bagged by final B V, Sc. class. Thiru K. Madhisekar of III B. V. Sc. claimed Individual Sports Championship Trophy for men. Selvi. C. T. Alli of I B. V. Sc. claimed the individual Championship Trophy for women. Thiru H. Gopi of final B. V. Sc., was awarded the Trophy for the best sportsman of the year.

National Cadet Corps

Proposal to start a Re-mount and Veterinary Squadron NCC at this college during the academic year 1984-85 was approved by the Central and State Governments and thirteen horses arrived on 7.5.85 for this purpose. Dr. D. Kathiresan, a staff member of this College was selected by the NCC Directorate to undergo three months pre-commission training at Meerut (U. P.).

A separate course, O + 1 Sqn. NCC, has been proposed to be introduced during the academic year 1985-86 in the Veterinary faculty.

FACULTY OF FISHERY SCIENCE, TUTICORIN.

Dr. G. Jagatheesan continued to be the Dean i/c of this College during 1984-85.

Admission

During the year 1984-85, 20 students were admitted to the first year B. F. Sc. programme and six to the first year M. F. Sc., programme. The first trimester for the B. F. Sc. programme started on 15.10.1984 and for the M. F. Sc. programme on 2.1.1985.

The number of students on roll during the year was as follows :-

I B. F. Sc.	18
II B. F. Sc.	17
III B. F. Sc.	19

IV B. F. Sc.	21
I M. F. Sc.	6
II M. F. Sc.	5

Examination

Regular tests and examinations were conducted as per the regulations of the trimester system of teaching. The third supplementary examination was conducted during May, 1985.

Educational Tours

The IV B. F. Sc. students went on an All India tour for 22 days to Calcutta, Kashmir, Bombay, Goa, Mangalore and Cochin to study the various activities of Fisheries Science.

The III B. F. Sc. students undertook tour to important fishery establishments at Madras, Coimbatore, Uthagamandalam, Mettur, Portonova and Bhavanisagar.

Scholarships

The details of scholarships awarded during 1984-85 are given below:-

Details of the Scholarships	No. of recipients	Amount (in rupees)
Backward Class Scholarship	22	22,627
Scheduled Caste Scholarship	11	27,717
Scheduled Caste Loan Scholarship	13	11,550
National Loan Scholarship	3	2,910
ICAR Merit Scholarship	2	2,750

Students' Hostel

Dr. G. Jegatheesan, Dean in-charge, Fisheries College was the Warden and Dr. N. Ramanathan, Assistant Professor was the Deputy Warden. During the year under report, 63 students were residing in the U.G. hostel, 10 in the P.G. hostel and six lady students in the Ladies hostel.

For providing entertainment to the students two T.V. sets-one each in colour and black and white one stereo record and one radio were made available in the hostels.

Students' Mess

One mess was functioning in the hostel for the benefit of students.

Students' Club

A team of students consisting of Thiru D. Sukumar, IV B. F. Sc., Thiru S. Felix and Thiru R. Suresh both from Junior M. F. Sc. took part in the inter-collegiate essay competition conducted on 7th April, 1984 by the Indian Medical Association and won the I prize and was also awarded the Indian Medical Association Rolling Shield. In the inter-collegiate Elocution competition, conducted by the SPIC Jaycees, Tuticorin on 11th September, 1984 Thiru A. N. Balaji of III B.F.Sc. was awarded II Prize in English Elocution competition and Thiru P. Selvaraj of IV B.F.Sc. won III prize in the Tamil Elocution competition.

Thiruvalargal D. Sukumar and R. Jeyaraman from IV B. F. Sc., Thiru R.

Amal Xavier of III B. F. Sc. and Thiru John Thomas of I B. F. Sc., participated in the inter-collegiate quiz competition conducted by the Pearl City Jaycees, Tuticorin on 13th September, 1984 and bagged the I prize. The same quiz team took part in the inter-collegiate quiz competition conducted by the YMCA, Tuticorin on 28th september, 1984 and bagged the I prize and was also awarded the Graena Memorial rolling shield.

Thiruvalargal B. Nagamani, M Althaf Ali Khan, P. Selvaraj and K. Ratnakumar of IV B.F.Sc., Thiru A. N. Balaji of III B.F.Sc., Thiru Ravaneeswaran of II B.F.Sc., Thiru Liakat Ali Khan of I B.F.Sc., and Thiru G. Sugumar of Junior M.F.Sc. took part in the inter-collegiate cultural competition organised by the Pearl City Jaycees, Tuticorin on 14th September, 1984 and won II prize in dance drama, III prize in mono-acting and skit drama.

The students took part in UNISTOM-1984 conducted by youth wing of the Pearl City Jaycees, at St. Mary's College, Tuticorin on 16th December, 1984 and were awarded II prize for overall performance from out of 32 colleges participated in this event. The following students won individual prizes:-

I Prize in fancy dress	Thiru Ramprasad of I B.F.Sc.
II Prize in dance drama	Thiru Rengarajan and party
II Prize in skit drama	Thiru A. N. Balaji and party
II Prize in workshop	Selvi Mary

Sports and Games

The youth wing of Pearl City Jaycees' Tuticorin conducted an inter-collegiate cricket competition on 14th October, 1984 and the college team got runners up. The college team won the badminton match against Government Polytechnic on 21.12.1984 and also against FCI, Tuticorin on 27.12.1984.

POST-GRADUATE EDUCATION

The details of number of post-graduate students admitted and passed out in various disciplines of the University during 1984 - 85 are given below.

1 Post-graduate programme.

Post-graduate programe	Number of students admitted	Number of graduates passed out
Coimbatore Campus		
1. M. Sc. (Ag)		
i) Agronomy	26	13
ii) Plant Breeding and Genetics	11	3

iii) Agricultural Entomology	9	9
iv) Plant Pathology	4	3
v) Soil Science and Agricultural Chemistry	5	3
vi) Agricultural Economics	11	8
vii) Agricultural Marketing Management	10	2
viii) Agricultural Extension	14	10
ix) Seed Technology	13	4
x) Agricultural Microbiology	6	6
xi) Crop Physiology	3	5
xii) Sugarcane Production	8	4
xiii) Plant Protection	11	-
Total	131	70
2. M. Sc. (Hort)	7	8
3. M. Sc. (Food Science & Nutrition)	—	5
4. M. E. (Ag)	2	—
5. Post-graduate Diploma in Sericulture	—	38

Madurai Campus

1. M. Sc. (Ag)

i) Agronomy	12	10
ii) Plant Breeding and Genetics	9	6
iii) Agricultural Entomology	8	2
vi) Soil Science and Agricultural Chemistry	15	2
v) Plant Pathology	—	1
vi) Agricultural Economics	9	5
vii) Agricultural Extension	6	14
	59	40
2. M. Sc. (Hort)	7	7
3. M. Sc. (Food Science & Nutrition)	5	—

Tuticorin Campus

M. F. Sc.	6	—

Madras Campus

M. V. Sc.

i) Poultry Science	3	2
ii) Veterinary Microbiology	5	8

iii)	Therapeutics	3	1
iv)	Surgery	5	4
v)	Obstetrics & Gynaecology	3	4
vi)	Veterinary Public Health and Epidemiology	2	2
vii)	Meat Hygiene & Technology	3	3
viii)	Dairy Microbiology	1	—
ix)	Livestock Production and Management	4	3
x)	Parasitology	—	2
xi)	Pharmacology	—	1
xii)	Animal Nutrition	—	3
xiii)	Animal Genetics and Breeding	—	5
xiv)	Animal Husbandry (Hygiene and Management)	—	1
xv)	Veterinary Physiology	—	3
	Total	29	42
	Grand Total	246	210

II Doctoral Programme

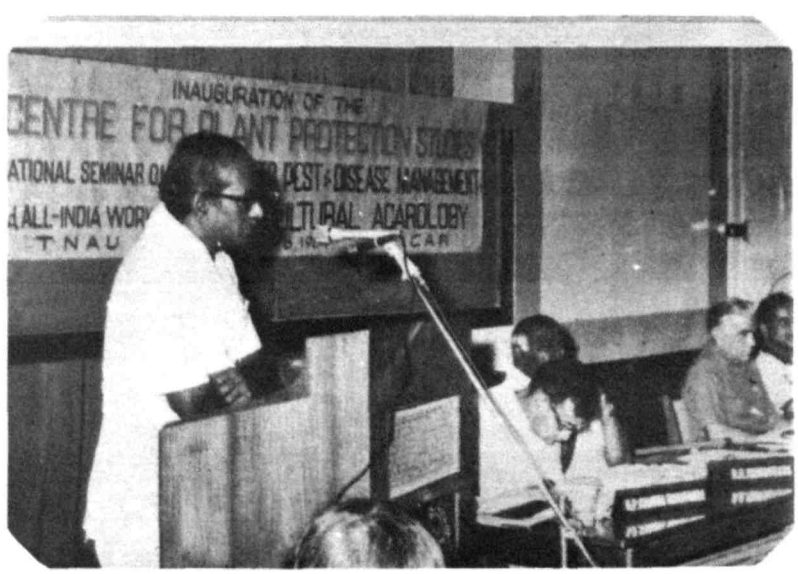
The number of Ph. D. students passed out is 1984-85 is shown below :-

Faculty	Number of students passed out
1. Agriculture	
i) Plant Breeding and Genetics	2
ii) Agricultural Entomology	4
iii) Plant Pathology	1
vi) Soil Science and Agricultural Chemistry	2
v) Crop Physiology	1
vi) Agricultural Extension	1
vii) Seed Technology	1
Total	12
2. Horticulture	1
3. Veterinary and Animal Science	
i) Veterinary Microbiology	2
ii) Obstetrics & Gynaecology	1
iii) Parasitology	5

His Excellency Shri S. L. Khurana, the Governor of Tamil Nadu
at the Tenth Convocation of the University

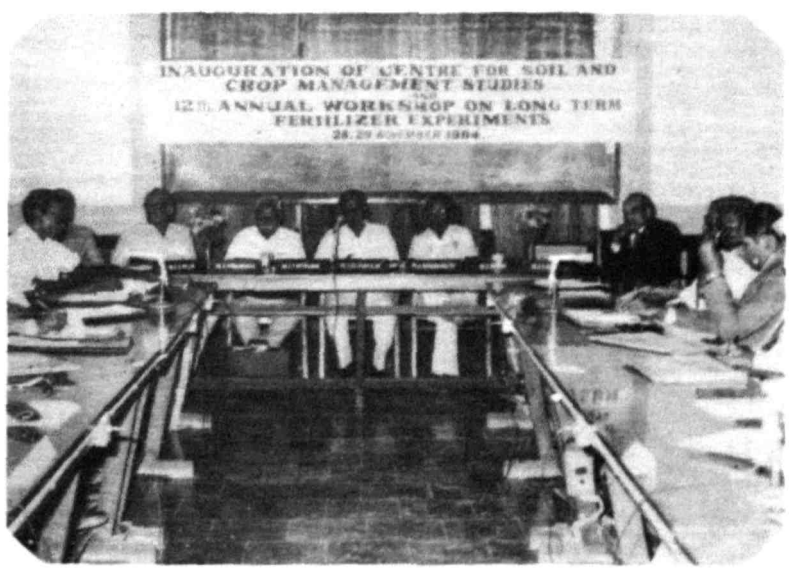
His Excellency Shri S. L. Khurana, the Governor of Tamil Nadu
at the National Seminar on Clinical Diagnostic Methods
at MVC, Madras

Dr. K. Kalimuthu, Honourable Minister for Agriculture and Thiru K. K. S. S. R. Ramachandran, Honourable Minister for Co-operation at Farm and Hostel Buildings Foundation Stone Laying Function at RRS, Aruppukottai



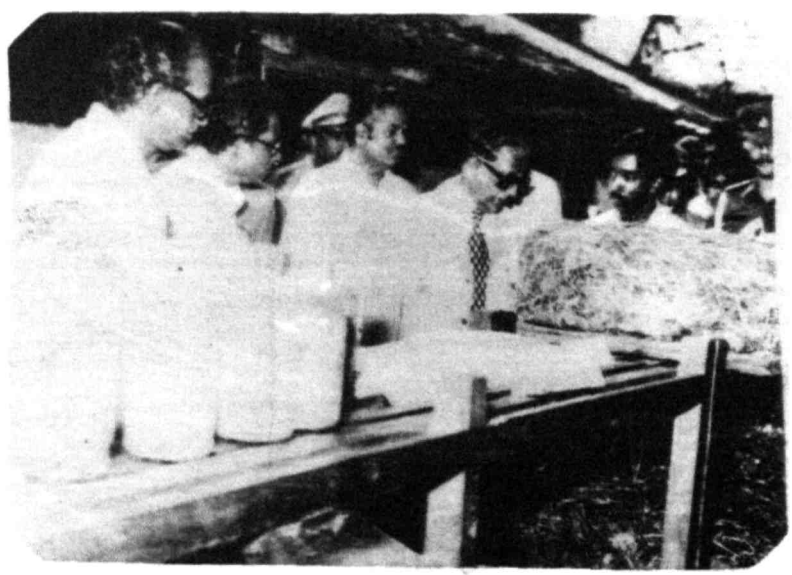
Vice-Chancellor Inaugurating the Centre for Plant Protection Studies

National Seminar on Salt Affected Soils at SSRC, Tiruchirapalli



Inauguration of the Centre for Soil and Crop Management Studies

Vice-Chancellor at the Housing Complex Opening at RRS, Paiyur



His Excellency, Shri S. L. Khurana, The Governor of Tamil Nadu Visiting the Mushroom House

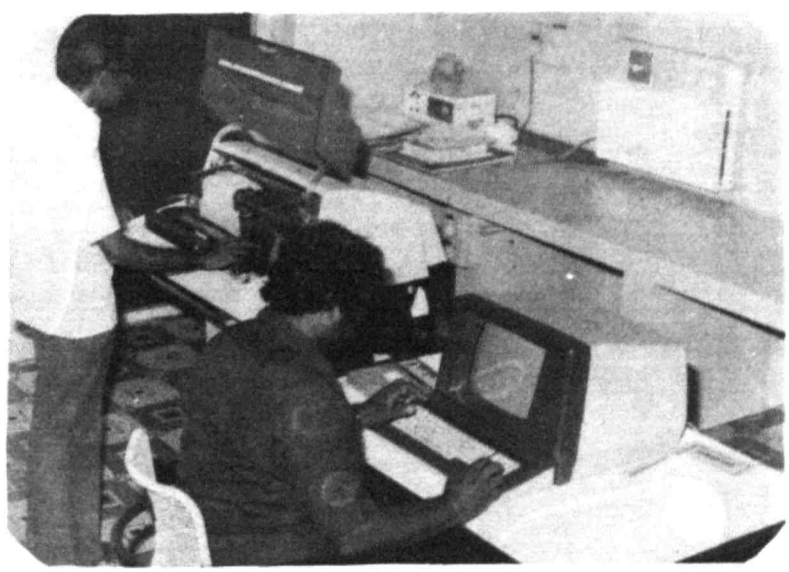
Honourable Minister for Agriculture, Andhra Pradesh
Thiru R. Rajagopala Reddy Visiting TNAU, Coimbatore

Visit of the High Level Delegation from USA to TNAU,
Coimbatore on 23 - 24 November, 1984

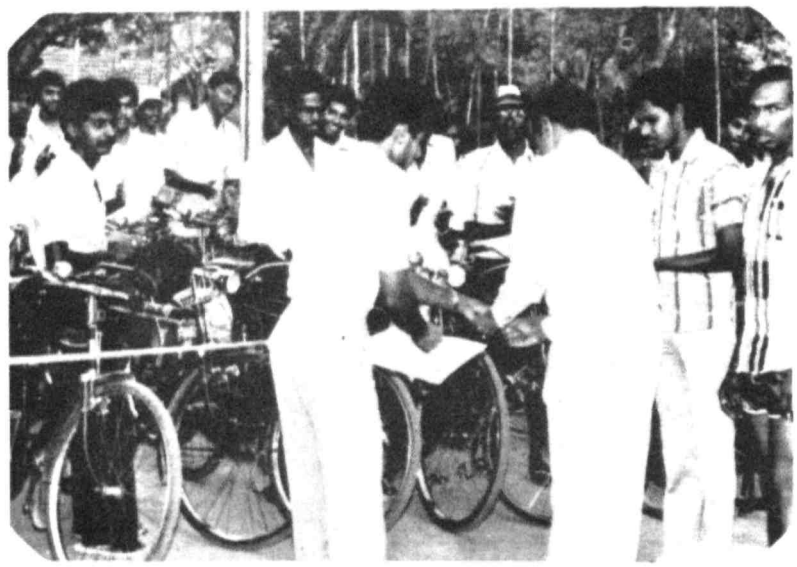
Thiru RM. Veerappan, the Honourable Minister for Hindu Religious Endowments, Tamil Nadu at the Inauguration of Fine Arts Association of MVC, Madras

Vice-Chancellor Distributing Prizes to the Winners of the Basket-ball Tournament at MVC, Madras

Deans of Veterinary Institutes, USA Visiting MVC, Madras



Computer Center at the Main Campus



Students on a Hiking Trip

Under-graduate Students at Field Work

Students at the Library

Students at Rat Eradication Campaign

Students Fabricating Fishing Nets

Thiru C. Dorairaj, DIG of Police Addressing at the
Annual Sports Meet

iv)	Animal Nutrition	1
v)	Animal Genetics and Breeding	1
vi)	Poultry Science	2
vii)	Dairy Science	2
	Total	14
	Grand Total	27

UNIVERSITY LIBRARY, COIMBATORE

The Library accessioned 4734 books and back volumes of Scientific Journals during 1984-85. One hundred and thirty seven books were received as gratis.

During the year, 1,129 documents were classified and catalogued. Shelf register cards, subject cards, author cards, books cards and tracing cards were prepared for the benefit of the readers.

The Library received 8312 issues of periodicals and were displayed for the use of the readers in the current periodicals section. Nearly 1,150 back volumes of periodicals were bound and added to the stock of the back volume section.

Out of the 1038 periodicals received by the Library 875 were subscribed, 570 being foreign journals. Twenty-five journals were received in exchange for Madras Agricultural Journal. The Library received 163 journals free of cost.

A total number of 1,14,065 readers visited the Library in 1984 - 85 and 10,35,350 books and periodicals were consulted by them.

The Library had made arrangements with libraries of other Agricultural Universities, Research Institutes and other Technical Institutes in India and abroad for a 'books and other publications exchange programme' which was effectively made use of. Twenty-nine classes on effective use of library and library management were conducted for undergraduate and post-graduate students.

The 'Library committee' of the University met eight times during the year and various issues related to library arrangements were discussed and action was taken on them.

Important research papers (135 research papers) published in leading journals were xeroxed and copies were sent tothe research stations of the University by the Directorate of Research (Agri) for the benefit of the scientists working in them.

4. RESEARCH

The major research achievements of the University in the areas of crop improvement, crop management, crop protection, seed technology, horticulture, agricultural engineering, water technology, agricultural and rural development studies, veterinary and animal sciences and fishery science are presented in this chapter.

AGRICULTURE

RICE

Crop Improvement

Varieties Released

TPS 1: This is a derivative of a cross between IR 8 and Kattisamba from the Paddy Experiment Station, Thirupathisaram. It has a yield potential of 5300 kg/ha under semi-dry conditions and recorded an average grain yield of 4500 kg/ha in the ART conducted under semi-dry conditions. It is semi-tall in stature (110 cm) with tolerance to stem borer. It matures in 110-115 days and yields short-bold, red rice. This is recommended for cultivation in Kanyakumari district in the place of the local Kattisamba variety.

PMK 1: This is derived from a cross involving Co 25 and ADT 31 from the Paddy Experiment Station, Ambasamudram. Maturing in 110-115 days, this variety is best suited for dry and semi-dry cultivation in Ramanathapuram and Pasumpon Muthuramalingam districts. It has recorded an average yield of 3200 kg/ha of grain and 7200 kg/ha of straw in ART. The yield increase over TKM 9 was by 11% in grain and 27.9% in straw. This semi-tall variety with a plant height of 110-115 cm is tolerant to blast and helminthosporios.

Crop Management

Studies conducted at Aduthurai and Coimbatore on stubble management indicated that by incorporating the *Kuruvai* (I crop) paddy stubbles and applying mussorie rock phosphate (50 kg P_2O_5), 50% of the recommended level of N could be saved without affecting the yield of *thaladi* (II crop) paddy.

For second crop rice, 25 kg per hectare of $ZnSO_4$ may be applied for getting increased yield.

Trials conducted on the usefulness of ammonium chloride for rice revealed that the performance of ammonium chloride was found comparable with urea as nitrogen source on equal nitrogen basis.

The combined application of N with carbofuran or phorate resulted in higher level of productivity even at 60 kg/ha as compared to 90 kg N/ha, resulting in a saving of N to the extent of 30 kg/ha.

Field experiments conducted to assess the response of lime in acid soils of Ambasamudram series (Typic. Ustropepts) with pH 5.4 during Kar season of 1983 and 1984 revealed that slaked lime was found superior to dolomite in enhancing the yield. Among the levels of lime application, 400 kg Ca/ha recorded significantly higher yield than other levels.

Application of 20 kg K_2O/ha in two top dressings along with N at active tillering and panicle initiation stages without basal application of K increased the grain yield significantly over no K application and the recommended practice of basal application of 50 kg K_2O/ha.

Studies on efficiency of urea based fertilizers for rice revealed the following: Volatilization loss of N estimated by absorbing volatilized ammonia in dilute sulphuric acid indicated that loss was higher upto seven days after transplanting Volatilisation was maximum in prilled urea source of N (1508 g N/ha) at 112 5 kg N/ha level followed by urease inhibitor coated N (357 g N/ha) and the minimum was with urea super granule source of N (917 g N ha). Leachate loss of N estimated by using leachate probes indicated that the N concentration in leachate water was higher at 112.5 kg N/ha with prilled urea (5.39 ppm) followed by urease inhibitor coated N (4.41 ppm and the minimum loss was recorded with urea super granule source of N (3.77ppm).

Crop Protection

A chemodiagnostic method was developed to detect Tungro virus infection in rice.

A new antiphytoviral chemotherapeutant developed in Germany, viz., D.H.T. (2, 4-dioxo-hexahydro-1, 3, 5 triazine) at 0.2% and 0.1% given as preinoculation spray reduced RTV infection by 70% and 50% respectively.

Field experiments conducted to evaluate the spray formulation of insecticides in controlling the earhead bug revealed that monocrotophos 0.04% was superior and recorded maximum of 97 1% reduction in the population as against 30.4% for HCH.

The economic threshold level (ETL) of earhead bug infection, determined based on yield loss, was 5 bugs/100 earheads at flowering stage to maturity and 16 bugs/100 earheads from milky stage to maturity.

Spraying of malathion and fenthion even 10 days prior to harvest (against earhead bug) had not left residues in hand pounded rice. Fenitrothion and quinalphos dust left residues but were below the tolerance level.

At Coimbatore, the economic injury level of rice leaf folder at late tillering stage of IR 20 was 4 5% of infected leaves based on 1984 price for grain and insecticide. It was estimated that for every one per cent increase in the number of infected leaves, there was a reduction of 44.5 kg/ha in the yield. However, studies on ETL for the rice leaf folder conducted at Madurai during 1982 84 based on flag leaf area damage grade revealed an economic threshold of 6% on flag leaf damage

Experiments conducted at Aduthurai with five levels of nitrogen viz., 0. 30, 60, 90 and 120 kg N/ha (applied as urea)

on the incidence of leaf folder revealed that the leaf folder infestation increased with the increased levels of N application.

MILLETS

SORGHUM

Crop Improvement

Variety Released

Co 25 : This is a derivative of a three way cross of the elite lines (IS 4283x699T) CS 3541. It has a grain yield potential of 5170 Kg/ha under rainfed, and 6200 kg/ha under irrigated conditions. Maturing in 115-120 days, it is suitable for rainfed cultivation from June-July to September October, and irrigated cultivation in summer months. This variety is capable of giving 12-15 t/ha of straw of superior quality (crude fibre content 31.25%). It is also resistant to downy mildew.

Crop Protection

Two sprays with thiophanate, 0.02% (fitst at boot leaf stage and the second after a week) reduced the incidence of sugary disease from 96.7 to 15.6%. Spraying synthetic pyrethroids (cypermethrin or permethrin or fenvelerate or cyfloxylate) @ 150 g ai/ha and malathion 5D@ 25 kg/ha applied twice, the first round at the time of 50% flowering and the second round ten days later, significantly reduced the earhead bug population and increased the yield.

Spraying monocrotophos or fenpropathrin or phosalone or thiometon at 0.05% resulted in significant reduction in mite population and the percentage of reduction ranged from 83.3 to 98.0.

Intercropping of sorghum with either cowpea or lab-lab reduced the incidence of sorghum stem borer *Chilo partellus* (Swinhoe) and increased the yield of sorghum grain and straw as compared to pure sorghum crop.

RAGI

Crop Improvement

Variety Released

Co 12 Ragi : This is a pureline selection from PR 722 of Andhra Pradesh. It is of medium duration (110-115 days) with a yield potential of 5544 kg/ha under irrigation. It is tolerant to leaf, neck and finger infections of blast as well as to water logged situations. It is suitable for cultivation in Periyar, Coimbatore, Salem, Dharmapuri, South Arcot and North Arcot districts.

Crop Management

In the case of aged seedlings (35 day old) increasing the number of seedlings from 2 to 3/hill and nitrogen dose by 25 per cent (10 kg N/ha), resulted in 94 per cent of the yield obtained from 21-day old seedlings transplanted with two seedlings/hill under recommended level of nitrogen (40 kg N/ha). In the event of transplanting of aged seedlings (beyond 21 days) increasing the number of seedlings to three / hill and nitrogen level by 25 per cent would produce a comparable yield to that of 21-day old seedlings.

At Paiyur, ragi seeds inoculated with *Azospirillum* and applied with only 50% recommended N (20 kg/ha) gave equal yield as that of full dose of N (40 kg/ha) under rainfed condition.

MAIZE

Crop Improvement

Variety Released

Co 1 Maize : This is a composite developed by unit selection utilizing Suwan 1 population of Indonesian origin. It has recorded a maximum grain yield of 6796 kg/ha under irrigated condition. Maturing in 110 days and resistant to downy mildew, it has recorded 48.7% and 61.4% higher yields than K1 under irrigated and rainfed conditions respectively.

Crop Management

Studies conducted at Kovilpatti to find out the best intercrop for maize revealed that greengram with maize under 45 kg N + 45 kg P_2O_5/ha recorded the maximum total return of Rs. 4486/ha as compared with cowpea, lab-lab and blackgram as intercrops.

PULSES

REDGRAM

Crop Management

Combined application of FYM (10 t/ha) and inorganic fertilisers (20 kg N and 40 kg P_2O_5/ha) with rhizobial seed inoculation resulted in higher grain yield through an increase in the number of pods per plant and increased grain weight.

BLAGKGRAM

Crop Management

Studies on the methods of raising blackgram under different systems, *viz.*, compartmental bunding, raised bed, and ridges and furrows with and without the addition of FYM (10 t/ha) superimposed with spraying of 2% solution of urea or DAP at the flowering phase revealed the superiority of DAP or urea spray over no spray in increasing the grain yield.

Pre-emergence application of herbicides, *viz.*, basalin, stomp and ronstar was effective in controlling the weeds in blackgram under irrigated conditions. The net profit was higher when half the dose of herbicides was supplemented with one hand weeding.

Crop Protection

Foliar spray with acetyl salicylic acid 0.02% suppressed the mosaic symptoms in artificially inoculated plants. The percentage of infected plants was 6.6 as against 80.0 in control

GREENGRAM

Crop Improvement

Variety Released

Paiyur 1 Greengram : This is a pureline selection from Kaveripattinam local suited to the rainfed areas of Dharmapuri, Periyar, Madurai, Ramanathapuram and Tirunelveli districts. It yields about 750 kg/ha and matures in 85-90 days.

Crop Protection

Etrimfos or Malathion or dichlorvos at 15 mg ai/kg and 1% activated clay protected greengram from bruchid upto eight months.

SOYBEAN

Crop Management

The best time of sowing soybean in rice fallows in old delta areas of Thanjavur district was found to be from 10th January to 10th March. Among the herbicidal treatments, highest bean yield of 1385 kg/ha was obtained by the treatment combination fluchloraline 2.0 kg/ha followed by one hand weeding on 40th day after sowing. Inoculation of soybean (Co 1) with *Rhizobium Japonicum* strains, *viz.*, UASSB. 1, CoSB. 1 and multistrain (CoSB. 1, UASSB. 1 and RCP 14) increased the nodulation, nodule dry weight, plant dry weight and grain yield over uninoculated control as well as nitrogen applied control.

Crop Protection

Neem seed kernel extract, karanj oil and neem oil were effective and superior in controlling major pests of soybean compared to the neem leaf extract 5% and 10% and untreated control.

OILSEEDS

GROUNDNUT

Crop Management

The combined nutrient spray of DAP (0.5%), Planofix (40 ppm), ammonium sulphate (0.2%), and boric acid (0.1%) given twice i. e., on the first flowering (25 days) and peak flowering (35 days) stages resulted in reduction in total flowering duration by 10 to 19 days in the bunch varieties, *viz.*, TMV 12, TMV 7, TMV 2 and Co 1.

Application of borax 10.5 kg/ha as basal plus gypsum 200 kg ha on 45th day after sowing gave significantly higher yield of 12.3% over control.

Application of zinc sulphate (18.75 kg/ha) as soil application plus 1.87 kg/ha as foliar spray just at the commencement of flowering recorded a pod yield of 1020 kg/ha. It was on par with foliar spray on 30th day at 3.75 kg/ha which recorded a pod yield of 1006 kg/ha with 9% higher yield than untreated control (923 kg/ha).

Crop Protection

From the survey of groundnut diseases during 1982-83 and 1983-84 it was found that a new leaf spot disease caused by *Alternaria alternata* occurred in large scale in South Arcot district. The screening of groundnut varieties for two years showed that virginia types, *viz.*, TMV 2, TMV 4, TMV 10, Robut 33-1 and VG 5 were free from this disease.

At Aliyarnagar, the cultures 20 (Pol 2 x PPG 4) and 22 (TMV 9 x P. 1. 259747) were found to possess resistance to both rust and leaf spot disease while the culture (Co 1x FESR 11-5) and culture 23 (Co 1 x FESR 11-12) recorded resistance to rust alone.

SESAMUM

Crop Protection

At Vridhachalam it was found that Carbaryl 0.2%, endosulfan 0.7% and quinalphos 0.05% spray was effective against shoot webber.

COCONUT

Crop Protectian

Successful attempts have been made to effect better control of coconut

black headed caterpillar by trunk injection with systemic insecticides. Injection with monocrotophos at one ml ai/tree brought down the population within seven weeks and offered protection for 13 weeks. The studies on residue present in the nuts in the treated trees indicated that the residue could be eliminated by harvesting the nuts 15 days after the injection and storing them for 30 days at room temperature.

FIBRE CROPS

COTTON

Crop Improvement

Variety Released

K 10 Karunganni Cotton : This is a hybrid derivative of cross between K9 x 11878. It has recorded an average kapas yield of 514 kg/ha as against 444 kg/ha by K9. Ginning percentage of this variety is 38 as against 35.7 in K9. It matures in 140 days, which is 10 days earlier than K9.

Crop Management

Seed treatment with *Azospirillum brasilense*, and soil application with 5 kg per hectare mixed with 800 kg of compost and applied in the seedling resulted in additional seed cotton yield of 140 kg/ha.

Crop Protection

Three sprays with anyone of Mancozeb, Iprodione, Captan and Captafol 0.2% at 10 days interval starting from the first appearance of the symptom effectively reduced the *Alternaria* leaf spot.

Three sprays with Carbendazim 0.1% or Thiophanatemethyl 0.1% or Captafol 0.2% or Mancozeb 0.2% or Bitertanol 0.1% at 10 days interval starting from the first appearance of the symptoms effectively reduced the spread of the boll-rot disease.

The synthetic pyrethroids, fenvalerate 75 g ai/ha, cis-cypermethrin 50 g ai/ha, flucythrinate 50 g ai/ha, cyfloxylate 25 g ai/ha, and non-pyrethroid compounds, *viz.*, triazophos 0.1%, dithiocarb 0.075% and endosulfan 0.07% were most effective in the control of boll worms.

The neem oil + karanj oil at 5 : 1 ratio at 3% concentration was found to be effective against aphids, leaf hopper, thrips, red cotton bug and mite.

Foliar spray with phenylalanine or tyrosine 24 hours before inoculating *Alternaria macrospora* delayed the appearance of symptoms of leaf spot by 4-7 days and reduced lesion size by 76.5%.

Studies on the light trap catches of *Spodoptera litura*, indicated that the frequency of attraction of both the sexes was high during November - December and April-May. The females accounted for 52.4% of the total moths tapped.

SUGARCANE

Crop Improvement

Variety Released

CoC 85061 : It is a progeny from general cross Co 6304 and has recorded 10% and 17% higher yields than CoC 671 both as planted and ratoon

crop respectively. In the main yield trials conducted at Cuddalore it has recorded 112.9 t/ha of cane yield as against 106.7 t/ha recorded by CoC 671. In juice quality it is on parwith CoC 671. It is tolerant to drought and resistant to red rot.

Crop Management

Application of 25% additional dosage of N (70 kg/ha) soon after the harvest of the planted crop, with the other ratooning practices remaining the same, was found to increase the cane yield by 11.4%.

Crop Protection

Application of Carbofuran 3G at the rate of one kg ai/ha on 30 DAP controlled the early shoot borer effectively.

At Cuddalore, 17 promising genotypes were evaluated for their tissue and field resistance to red rot. The entries C 18484, C 81506, C 81525 and C 81595 were found moderately tissue resistant and showed a high degree of field resistance to red rot.

Among the 52 promising clones screened for smut, the entries CoC 772, C 80052 and C 80141 were found resistant.

SEED TECHNOLOGY

SORGHUM

Studies conducted for three years on the influence of seed size and location of production on germination, vigour and field performance in CSH 5 hybrid sorghum revealed that

a) The optimum sieve size for grading CSH 5 hybrid sorghum was one having 9/64" round perforation.

b) Linear relationship was discernible between 100 seed weight and seedling dry matter production.

c) Seeds produced in red soil tract did not respond to size grading unlike that from black soil due to uniformity of well filled seeds.

d) Pappampatti village was found to be ideal for raising sorghum seed crop as it recorded the highest germination and early seedling vigour as reflected in the dry matter production due to higher proportion of large sized (10/64" retained) seeds.

MAIZE

A comparison of manurial treatment for COH 1 hybrid maize seed crop revealed that (i) optimum doses of N, P and K for obtaining highest yield and quality of seed were 200, 100 and 100 kg/ha respectively; and (ii) among different spacings that were compared, a spacing of 60x25 cm was found optimum.

GROUNDNUT

Hot air drying of groundnut seeds caused production of many abnormal seedlings with concomitant reduction in germination and vigour. Sun drying tended to reduce the oil content in seeds.

COTTON

In MCU 7 cotton, the soil moisture stress treatments of 0.3, 0.4, 0.5 and 0.6 IW/CPE ratios were compared. The IW/CPE ratios 0.5 and 0.6 were found to improve the seed yield and seed quality.

COWPEA

Application of 40 kg N, 40 kg P_2O_5 and 40 kg K_2O with a spacing of 60x20 cm is optimum for obtaining high yield with good recoverable quality seeds in cowpea.

BHENDI

The recommended 40 kg N/ha can be applied as 20 kg N/ha as basal along with 50 kg P_2O_5 and 30 kg K_2O/ha. The remaning 20 kg, 10kg N/ha may be applied at first flowering and 5 kg N each at 10 and 20 days after first flowering. It gave high seed yield (1210 kg ha) with maximum germination (21%) associated with good vigour.

BRINJAL

Seed technological studies carried out in brinjal cv. Co 1 indicated that (i) harvesting of fruit for collection of quality seeds should be taken on the 50th day when the fruits become uniformly yellow in colour; (ii) yield of quality seed was contributed chiefly by fruits weighing 51 to 200 g; and (iii) application of P improved the seed germination.

TOMATO

The tomato seeds cv. Co 3 dried to 7% moisture and treated with Captan (2 g/kg) maintained 70% germination upto 18 months under tropical and sub-tropical conditions of storage, and for 21 months under temperate condition.

CHILLIES

Adopting a spacing of 30 x 30 cm and application of 140 : 50 : 50 kg/ha NPK are recommended for Co 2 chillies seed crop for getting higher yield of good quality seeds. Small fruits weighing less than 3 g fresh weight need to be discarded before extraction of seeds as they contain higher proportion (72%) of immature seeds

Chillies seeds cv. Co 2 treated with Captan (2 g/kg) at 7% moisture content and packed in aluminium foil pouch maintained 72% germination under tropical and sub-tropical conditions of storage for 12 months and 18 months under temperate storage conditions. The seeds stored in cloth bag with or without seed treatment registered below 70% germination within nine months irrespective of place of storage

HORTICULTURE

POMOLOGY

BANANA

Crop Management

At Agricultural Research Station, Vellore, it was found that the leaf area and girth of pseudostem of Rasthali banana were considerably increased by application of neem cake coated urea. Bunch and fruit characters were considerably improved by this treatment, especially in fruit filling as shown by higher fruit weight (70.97 g) and fruit volume (73.05cc).

In Co 1 banana, application of 2, 4 D-(25 ppm) within a week from the opening of the last hand in the bunch increased the bunch weight to 15.6 kg as against 9.8 kg in the control.

At Horticultural Research Station, Periyakulam, chips manufactured from

Robusta compared equally good with the standard Nendran chips. Though the outturn of chips per kg of fruit was low in Robusta (228.33 g) when compared to Nendran (335.00 g), the low selling price of Robusta tend to equal the unit production cost to that of Nendran.

Crop Protection

At Agricultural Research Station, Vellore, application of neem cake coated urea was found to reduce the nematode population to a significant extent both in soil (17.3/250 g) and also in roots (11.0/5 g) when compared to pure urea application (117.0/250 g in soil and 50.0/5 g in roots) during flowering stage. At harvesting stage also, there was significant reduction in nematode population both in soil and in roots in the neem cake coated urea applied plots (63.0 in soil and 35.6 in roots) as compared to pure urea treated plots (273.2 in soil and 154.0 in roots).

Corn injection of three ml of 2% Bavistin solution in seven months old infected banana tree and repeated after a month significantly reduced the wilt and improved the vigour.

PAPAYA

Crop Improvement

Variety Released

Co 5 Papaya : It is a medium to tall tree with dark purple pigmentation over all parts of the plant. It yields 60-80 fruits per tree and each fruit weighs about 2.0-2.5 kg. It yields 15.0 g of papain per fruit with an estimated papain production of 1200-1400 kg/ha.

MANGO

Crop Management

It was found that the shelf life of PKM 1 mango fruits could be improved upon by treating the fruits in hot water at 52°C for five minutes followed by 10% Fruitox application. The treated fruits exhibited delayed ripening and registered a low (6.64%) physiological loss in weight as against 14.80% in untreated fruits. This treatment also reduced the fruit rot caused by anthracnose disease to an extent of 75%.

ACID LIME

Crop Management

At Horticultural Research Station, Periyakulam, it was found that the acid lime plants budded on rough lemon root stock gave the highest yield of 885 (42.8 kg) fruits/tree when compared to acid lime seedlings yielding only 530 fruits/tree (23.6 kg).

Application of 600 g of N in two split doses with 200 g of P_2O_5 and 300 g of K_2O gave the highest yield of 1810 fruits/tree (98.1 kg) as against 980 fruits/tree (45.5 kg) in the control.

Foliar application of 0.5% zinc sulphate thrice a year gave higher yield of 1812 fruits/tree (98.6 kg) as against 1350 fruits/tree (67.7 kg) in the control.

Mulching the tree basins with 30 kg of green leaves four times a year helped to conserve the soil moisture and increased the yield to 1790 fruits per tree as against 1360 fruits in the control.

Spraying Diuron (4 kg/ha) in interspaces effectively controlled weed growth without affecting the yield of acid lime trees.

The shelf life of acid lime could be considerably increased by storing them in evaporative cool chambers. A remarkable reduction in physiological loss in weight (3.23%) was achieved as compared to open storage which resulted in a weight loss of 25.23%

Crop Protection

At Horticultural Research Station, Periyakulam, significant and effeciive control of twig blight was achieved by pruning the dead woods followed by spraying of 0.3% copper oxychloride thrice at monthly intervals from August to October.

Acid lime canker was effectively controlled by two sprayings at monthly intervals during August and September with Agrimycin 100 ppm and Blitox 0.1%.

POMEGRANATE

Crop Improvement

Variety Released

Yercaud-1 Pomegranate : It is a clonal selection from the local variety collected in Shevroys. The variety is highly adapted for growing at elevations from 1200 to 1500 m above MSL. The tree is moderately vigorous and highly branching with dark green leaves, and is less thorny. The colour of the fruit is dark purple and is light green at the calyx end. The fruit is well shaped, medium to large in size and weighs 200 - 450 g. The percentage of edible matter is 63-76 and the juice content is 74.8%. Each tree yields about 67-70 fruits per year in the early bearing age which is over 20% higher than local type. The most important economic attribute of the variety is its soft seeded nature and hence, its suitability for eating out-of hand without wasting the seeds.

COUNTRY PEAR

Crop Management

At Horticultural Research Station Kodaikanal, application of 500 g N, 150 g P_2O_5 and 300 g K_2O was found to be the optimum dose for 25-year old country pear tree for increased productivity by 68.2%.

OLERICULTURE

TOMATO

Crop Management

For Marutham tomato a fertilizer schedule of 100 : 100 : 100 kg of NPK/ha and 30 t/ha of FYM were found to be optimum for high yields.

Tomato seeds of cv PKM 1 fortified in 0.5% solution of sodium and potassium phosphate mixed in 1 : 1 ratio significantly improved the seedling vigour and enabled early transplanting.

Tomato seeds partially air dried in shade and subsequently dried under bright sunlight for 16 hours to 8-9% moisture level registered more than 90% germination.

BRINJAL

Crop Managemet

A fertilizer schedule of 150:100:60 kg of NPK/ha was found to be optimum for obtaining high yields of good quality seeds in PKM 1 brinjal.

CHILLES

Crop Management

A spacing of 45x30 cm and application of 150 : 70 : 70 kg of NPK/ha to

Co 2 chillies resulted in high yield of good quality seeds.

Crop Protection

Three sprays of Dimethoate 30 EC and Phosalone 35 EC (500 g ai/ha) at fortnightly intervals reduced the incidence of splind population resulting in increased dry pod yield when compared to the control.

To control chilli mites Phosalone 0.07% was found to be effective and this treatment increased the yield over control by 264.76%. The two other formulations, *viz.*, dicofal and ethion 0.1% were also found to be equally effective.

Folytaf 0.2%, Delan 0.2% and Fytolon 0.25% gave good control of fruit rot in chillies by registering only 8.8%, 11.9% and 12.7% incidence respectively as against 47.3% recorded in the control.

FLORICULTURE

ROSE

Crop Improvement

Variety Released

Yercaud-I Rose : It is a clonal progeny selected from bulk seedling population raised from open pollinated seeds at Horticultural Research Station, Yercaud It has been found to perform well at an altitude of about 1200-1500m above MSL. The plants are moderately vigorous and branched Flowers are borne mostly in clusters of 3-5 and of medium size (7-8 cm diameter) The colour of opened flower is pleasing yellow and exhibits dahlia like appearance. Each flower has about 50-53 petals arranged in 8-9 whorls. The flowers stand well for 8-10 days when left on the plant itself while the vase-life is about a week. Each plant produces about 100-120 flowers per year. This is suited for growing both as a bedding rose and a decorative rose in hilly regions.

CHRYSANTHEMUM

Crop Improvement

Varieties Released

MDU 1 Chrysanthemum : It is a clonal selection from Agricultural College and Research Institute, Madurai. The plants are medium tall and the flowers are large and sulphur yellow in colour. This selection yields 30.49 t/ha in a duration of 11 months.

Co 1 Chrysanthemum : It is a selection from local types collected at Hosur. The flowers are medium sized and attractive canary yellow in colour. It is an early variety (15-20 days earlier than the parent) and also has an extended period of flowering by 30 days. The average yield of the main crop is 16.7 t/ha.

HIBISCUS

Crop Improvement

Variety Released

Co 3 Hibiscus : This is a cross between types 'Bright Yellow' and 'Red Gold'. It produces apricot coloured flowers with signal - red throat. The colour changes to yellow with turkey throat in the afternoon. It yields 1309 flowers per plant per year.

SPICES AND PLANTATION CROPS

CASHEW

Crop Improvement

Variety Released

VRI 2 Cashew : It is a medium sized tree and is highly branching. The percentage of perfect flowers is high. The nut is of medium size with a shelling percentage of 28. The average yield of nuts per tree is about 8 kg per annum.

Crop Protection

To control all the major foliage pests of cashew three sprayings with methyl parathion 0.05% are recommended during flush initiation, flowering and fruit setting periods.

FENNEL

Crop Improvement

Variety Released

Co 1 Fennel : It has registered a mean yield of 567 kg/ha as against 379 kg/ha in the standard variety, registering an increase of 49.6%. This variety can be grown in the Northeast and Southwest monsoon seasons in the plains as well as in hill slopes of Tamil Nadu. As a mixed crop, it can be grown with long duration crops like chilli, turmeric an and brinjal and also as intercrop in young coconut and arecanut gardens.

PALMYRAH

Crop Management

Palms which received 60 kg of FYM per year gave the highest yield of padaneer (121.3 litres per palm) and this was followed by the Kolinji application @ 30 kg per palm with a padaneer yield of 107.1 litres/palm. In the above treatments, the number of days tapped was also higher (536 days under FYM application and 69.3 days under Kolinji application).

Palms treated with 2% each of DAP and KCl recorded the highest padaneer yield of 138.7 litres/palm in 68.2 days of tapping

FENUGREEK

Crop Protection

A fungicidal trial to control the powdery mildew revealed that two sprayings, one at the time of initiation of the disease and another 10 days later, with Karathane 0.1% or Bavistin 0.1% or wettable sulphur 0.25% were found to be effective in controlling the disease in that order.

CORIANDER

Crop Protection

It was found that drenching twice-first at the time of initiation of the disese and another one month later-with Bavistion 0.1% effectively controlled root rot disease.

FORESTRY

Crop Management

The growth of perennials like *Eucalyptus tereticornis* and casuarina was enhanced, both in height and girth at breast height when grown in conjuction with several crop rotations like sorghum ragi-cotton, groundnut-turmeric,

and cotton-maize-wheat combinations. Sorghum, maize and cowpea sustained growth when inter-cropped with perennials. This was well-perceived under *Leucaena leucocephala* and less so under *Casuarina equisetifolia*. Growth of fodder grasses rather than cereals was encouraged in conjunction with casuarina.

Germination in *Acacia sp.* was influenced by electrical conductivity and sugars and potassium contents in their leachate.

AGRICULTURAL ENGINEERING

Zonal Research Centre

An urea super granule applicator was designed and fabricated. It could cover an area of 0.56 ha per day with a single labour. Application of 100%, 75% and 50% of recommended N could be achieved by using 16, 12 and 8 cells respectively in the seed metering rotor. Cost of operation per hectare workd out to Rs. 49/-.

The IRRI one-metre vertical conveyer reaper for paddy was modified to suit the local conditions. The modified reaper could cover an area of 1.4 to 2.4 ha/day. The loss due to shattering was only one per cent and the cost of operation worked out to Rs. 150/ha. The cost of the reaper was Rs. 13,500/- when a 3.4 Hp Villiars engine was attached to it.

A soil combination tillage tool was designed and it was an ideal implement for timely tillage practice since it required less time to complete the tillage operation. It could cover one hectare in 4.5 hrs as compared to 10.5 to 14.5 hrs required in the conventional tillage practice. The cost of operation was also cheaper by 55% over the conventional method. The physical properties of the soil were found to be improved when this tool was used.

Agricultural Processing

A millet pearler was developed. It had the capacity of 20 kg/hr with a dehulling efficiency of 85%. The cost of operation worked out to Rs. 3/q as against Rs. 47/q in the conventional method. The cost of the unit is about Rs. 1800/-.

A method was developed for the manufacture of paper boards from banana peduncle. The boards can be used for making office files, desk pads, pouches etc.

A hand operated turmeric polisher was designed. The cost of the unit is Rs. 300/- and the operation cost works out to Rs. 2.50/q. It has a capacity of 60 kg/hr.

Farm Machinery

A self rotating sprinkler set operated by a 0.5 Hp centrifugal pump was developed. This could cover an area of 100 m^2 at a time. The cost of the set is Rs. 1800/-.

A simple tong type weed puller was developed with a view to pull out weeds and plants that were thorny in nature. It costs about Rs. 25/-.

Two types of fruit pluckers (scissor type and knife type) were developed and they were suitable for plucking fruits like mango, sapota, guava etc. without damaging them. They cost about Rs. 75/- each.

A three-lance sprayer suitable for tree crops was designed. It could cover 10-15 trees in one hour with the help of three men. It costs about Rs. 800/-.

Agricultural Structures

A prefabricated dome using ferrocement was designed to suit the biogas plant of $3m^3$ size. The cost worked out to Rs. 800/- as against Rs. 1500/- for the conventional arch type dome. The dome was in 12 segments and hence could be transported and handled easily.

A reinforced cement mortar storage bin of one metre diameter with a capacity for 0.5 tonne of paddy was designed. The cost of the bin was only Rs. 190 as against Rs. 245 for other types of storage bins, viz., the Hapur bin, Plywood bin and Coal-tar drum bin.

Agro Energy

A solar noon meal cooker with a capacity to meet the needs of 70-80 children was designed. The cost was about Rs. 2000/-.

An economy box type solar cooker was designed to be used in homes. The cost was Rs. 250/-.

A community type ($35\ m^3$ size) biogas plant was erected in the University with a cost of about Rs. 50,000/-.

A gasifier that could be operated using farm residues and wood chips was developed. The gas produced from this unit could be used as a fuel substitute to run diesel/petrol engines. The cost of the gasifer is Rs. 3,000/-.

WATER TECHNOLOGY

Irrigating rice to a depth of 5 cm, when it reached saturation, consumed less amount of water compared to continuous submergence, without affecting the yield. The saving in water worked out to 48% in summer and 31% in kharif.

The study on water management for rice crop conducted as ORP at Aruppukottai revealed that irrigating rice crop to a depth of 5 cm at cream stage recorded a yield of 4363 kg/ha with a total consumption of 1364 mm of water including 602 mm of rain, whereas the farmers' practice of continuous pounding of water to 5 ± 2 cm depth recorded only 3610 kg/ha with 1827 mm of water including rainfall.

Studies conducted at Coimbatore showed that the variation in moisture regimes significantly influenced the yield of ragi cv. Co 11. Irrigating the crop with 333 mm of water recorded good yield of 3533 kg/ha.

Increasing the level of irrigation beyond 437 mm was found to decrease the yield of cotton.

Stress imposed during vegetative and pod maturation stages in groundnut had not affected the yield in TMV 2, Co 1, Co 2, JL 24 and Ah 7284-101 groundnut cultures. Pod filling followed by flowering stages were identified as the critical stages for the yield in respect of stress.

Brick lined channel gave a conveyance efficiency of 98% and the prefabricated channel gave 96% effi-

ciency, whereas the earthern channel was found to have an efficiency of only 82%.

AGRICULTURAL AND RURAL DEVELOPMENT STUDIES

The data collected by the rural observatory centre showed that although 99% of the villages were electrified only 45% of the holdings had electricity The per capita income of all households in selected towns and panchayats was below the State average level in 1981-82. The average employment level for the landless labour households was estimated at 180-210 days in a year.

In sheep rearing with Mecheri breed the net return worked out to Rs. 2700 per year per unit of 20 eves and one ram.

Marketed surplus of milk formed 80% of total production in landless labour households while it was only 56% in big farm households in Chingleput district. The supply functions for both cow and buffalo milk were found to be highly price responsive.

In broiler production at Madras, the investment on buildings and equipments was Rs. 10, 26 and 22 per bird for small, medium and large farms respectively. The cost of production worked out to Rs. 15/- per broiler.

To improve the role performance of extension personnel under T & V system, provision of vehicles and timely supply of inputs were found to be very essential.

On an average the adoption of improved dryland technology increased the employment potential by 30%. The additional employment potential of intercropping system over sole crops was found to vary from 15 to 43%. The increase in labour requirement in mixed farming over crop farming was 31%.

VETERINARY AND ANIMAL SCIENCES

A design for progeny testing in dairy cattle and buffaloes was formulated for a population size of 300 breedable age cows. It consisted essentially of testing of six bulls at a time on 10 daughters each. The expected annual rate of gain for the existing production levels in crossbred cattle and Murrah buffaloes was found to be 30 kg or 1.6%. The rate of inbreeding for the design was estimated as only 1% increase per generation (5 years and 4 months).

A-I records on 5356 she-buffaloes, collected over a period of five years, were analysed to study the seasonality ofbreeding. The number of inseminations increased from October to March and the cold season and North-East monsoon period were found to stimulate oestrus in she-buffaloes.

The viability of the heparinised blood at 4°C at 24, 48 and 72 hours of storage on the mitotic index and mitotic drive was carried out. Blood samples stored upto 48 hours were found to be viable with appreciable mitotic index.

Sodium hydroxide treated paddy straw had better dry matter and cellulose digestibility. The digestibility of NDF and ADF was also improved due to alkali treatment, suggesting better nutrient availability.

SHEEP

The existence of the chlamydial infection among goats in Tirunelveli district as causative agents for abortion was identified.

The usefulness of banana waste as ruminant feed was investigated in a short term feeding trial. Ground dry banana sheath was mixed with concentrate feed replacing 75% of the drymatter from roughage. Sheep accepted this feed and ate readily without any detrimental effect on growth.

Considering the higher crude protein and drymatter digestibility and less crude fibre, NDF, ADF and silica content it is recommended that 35 days interval for cutting of hamil grass is optimum and more nutritious for sheep.

Studies on the meat characteristics of one year old male pure Nilagiri (N), pure x Merino (M), Merino x ½ Nilagiri (2MN), ¾ Merino x ¼ Nilagiri (M2N), ½ Rambouillet x ½ Nilagiri (2RN) and ¾ Rambouillet x ¼ Nilagiri (R2N) in relation to their carcass attributes and keeping and eating qualities were conducted in Sheep Breeding Research Station, Sandynallah. Of the six blood groups of sheep studied, the R2N representing 75% Rambouillet and 25% Nilagiri was found to be superior at one year in slaughter weight, carcass weight, dressing percentage, loin eye area and the total loin content of the carcass. The R2N also possessed a better keeping quality with low pH and higher extract release volume on keeping for 48 hours under three different stages of storage.

The ration containing groundnut oil cake treated with formaldehyde was found to be superior because of high bacterial count with less ammonia concentration in rumen in goats.

POULTRY

For growing Kaki campbell ducklings 2550 kilocalories of ME/kg appeared to be optimal from eight weeks of age and 24% protein upto three weeks of age and 18 to 20% protein from 4 to 8 weeks of age.

It was found that 26 to 28% crude protein upto three weeks of age and 20% crude protein upto 4-6 weeks of age with a constant energy level of 2,400 kilocalories of ME/kg from 0 to 6 weeks of age were found to be adequate for the Japanese Quails.

All male broilers irrespective of age had shown increase in slaughter weight, eviscerated weight, carcass yield and meat-bone ratio when compared to females. On the contary, the females of Japanese Quail showed higher values in all the above characteristics.

A study on the influence of season, stocking density and litter materials on broiler performance indicated that a) summer and North-east monsoon seasons were less favourable than winter and South-west monsoon season for better broilor productive performance and b) high stocking density group tend to exhibit better feed efficiency and returned relatively more profit than the low density group except for the ground shell litter.

Routine cleaning with disinfectants like KMO_4, $CuSO_4$ and bleaching powder was found to increase egg production in layers.

Feeding the Japanese Quails with 24% dietary protein upto three weeks and 21% Protein from 4-6 weeks of age would be economical.

Supplementation of dried yeast at 0.3 to 0.5% of the broilor diets has improved the 8th week body weight in pure bred broilers.

OTHERS

A study on economics of production and marketing of pork in organised farms in and around Madras city revealed that the average unit size of piggery was 17.5 sows and three boars. The total variable cost was 82.36% of the total cost of production, of which feed cost alone was estimated to be 76.97%. The cost of production was Rs. 11.11/kg of pork on live-weight basis

The net income from two boars + 20 sows unit was Rs. 36,976 per year. Pork consumption was found to be more during November to January. Three channels were identified in marketing of pork and the selling price varied from Rs. 10.70 to 16.00 per kg A sizeable quantity of pork and pork products was being drawn from other States like Andhra Pradesh, Kerala and Maharashtra to cater to the requirements of Madras city population.

In swine rations, either grower or finisher diets, samai at levels ranging from 17.5 to 25% replacing maize, could be included without affecting growth rate and feeding efficiency. It resulted in better economic production of pork without affecting carcass quality characteristics.

The preparation of Meat Protein Concentrate (MPC) through solvent extraction was done and its storage stability at 60 days was studied. Ethanol extracted fresh beef MPC was considered superior to the other solvent extracted products. The yield of MPC for 100 g of fresh meat was around 18% The product possessed approximately 88% crude protein and had a low fat percentage of 0.49. It withstood keeping at the end of sixth day. This product has the potential to become popular as protein supplement when produced on an industrial scale.

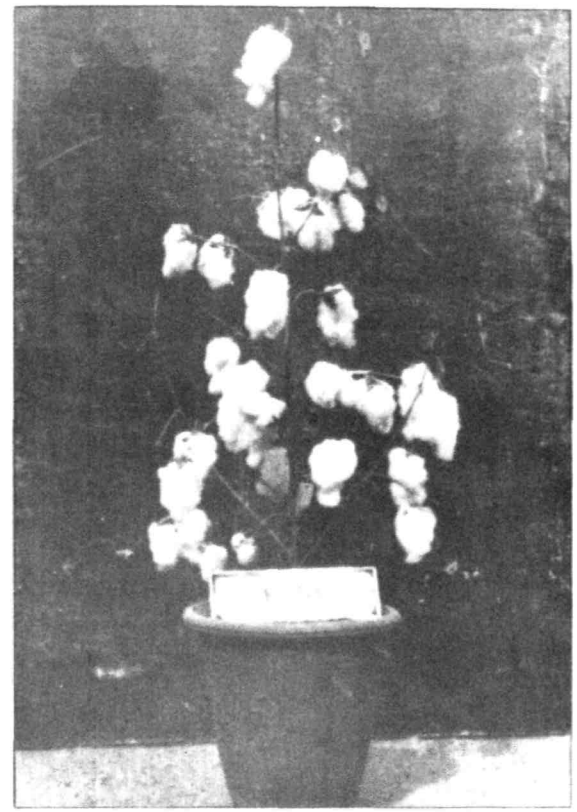
FISHERY SCIENCE

Studies were conducted to find the effect and survival of adult *Artemia* in pollutants. Mercuric chloride in the concentration of 0.001 mg/1, 0.00133 mg/ 0.002 mg/1, 0.004 mg/1 and 0.066 mg/1 was used along with control. The LD_{50} value for the different concentrations were calculated. During the period, environmental factors such as salinity ranged from 70% to 130%, the oxygen content from 2.0 to 2.2 ml/1 and the temperature from 27°C to 30°C. But during November, the salinity level got reduced to almost freshwater level, and the oxygen content was high (4 ml/1).

The hydrobiological parameters studied showed a clear cut succession of phytoplankton and zooplankton. The phytoplankters which were dominant (52 cells/1) with *Coscinodiscus, jonesianus, Biddulphia sinensis, Chaetoceros curvisetus* etc. during January, 1985 were responsible for the abundance and succession of zooplankton (8 organisms/1) which was chiefly represented by species such as *Oithona*

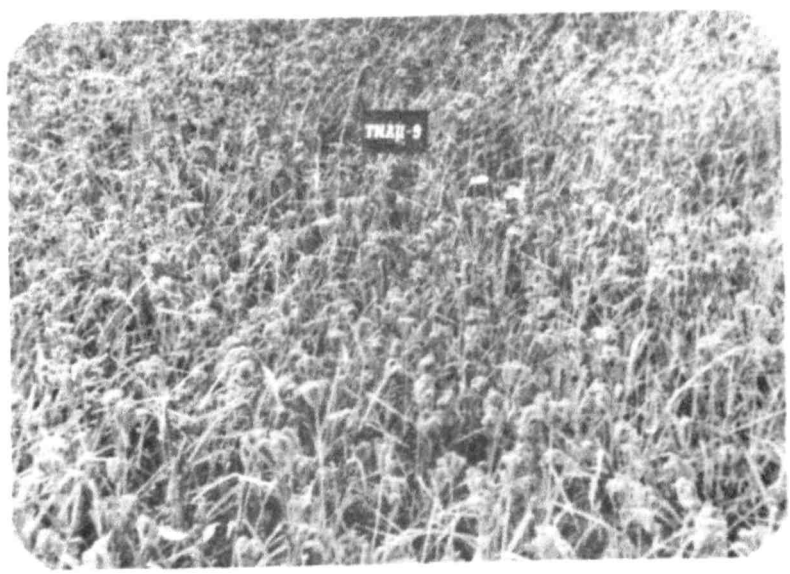

PMK-1

Co 1 Maize



K 10 **Cotton**

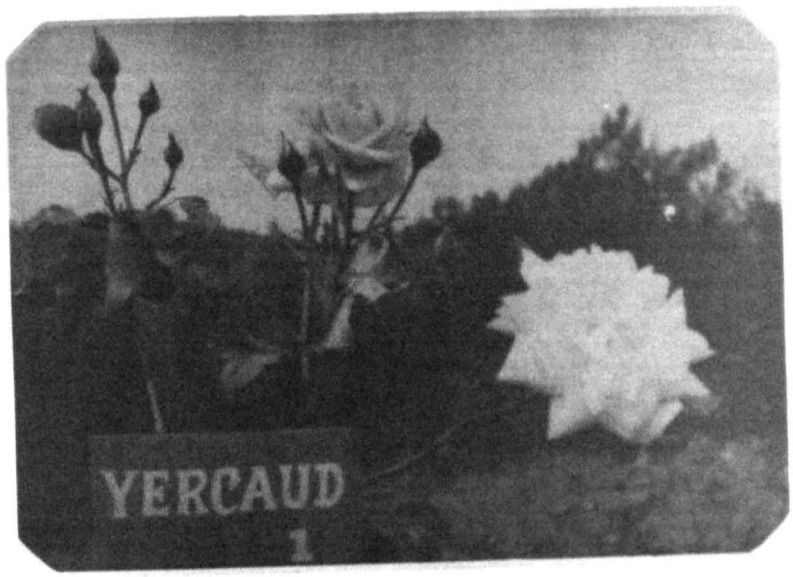
Co 25 Sorghum



Co 12 Ragi

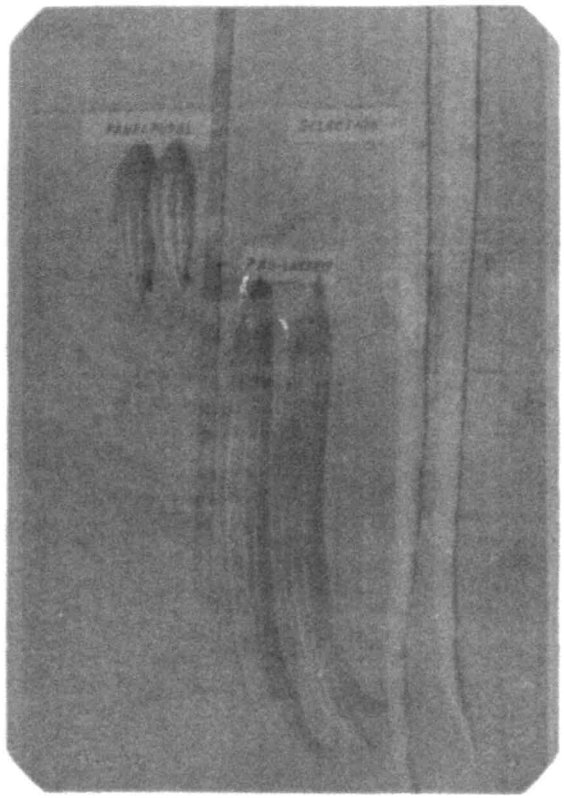
Paiyur 1 Greengram

Co C 85061 Sugarcane

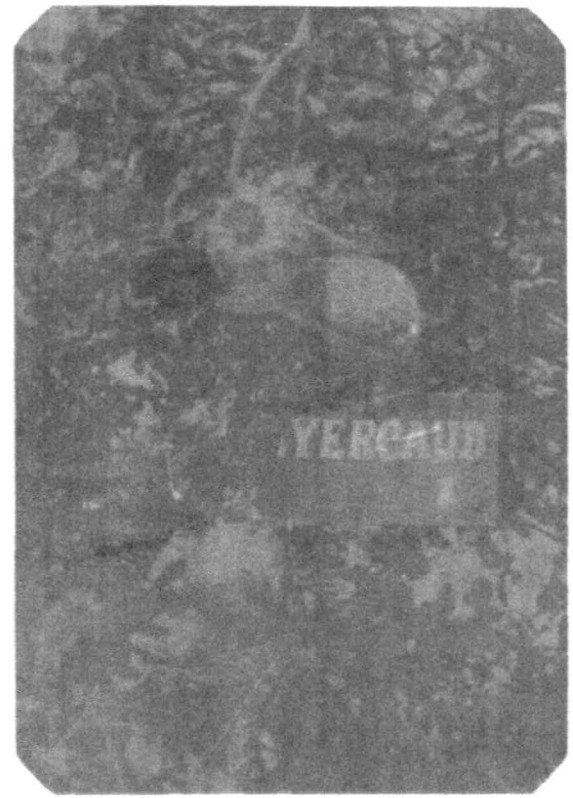


Yercaud 1 Rose

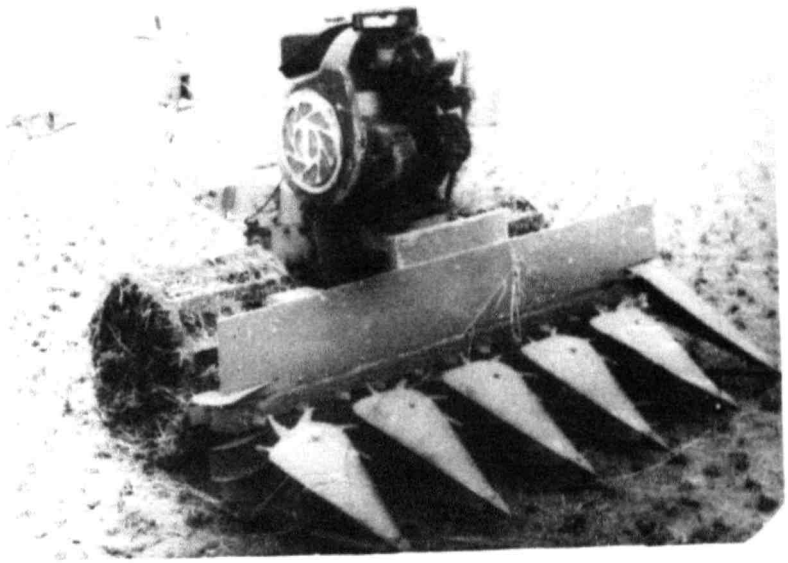
MDU 1 Chrysanthemum



MDU 1 Snakegourd

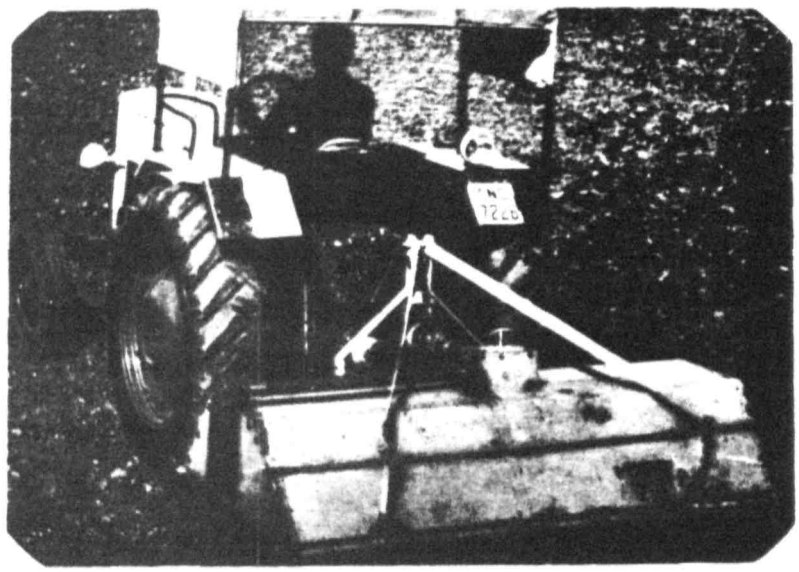


Yercaud 1 Pomegranate

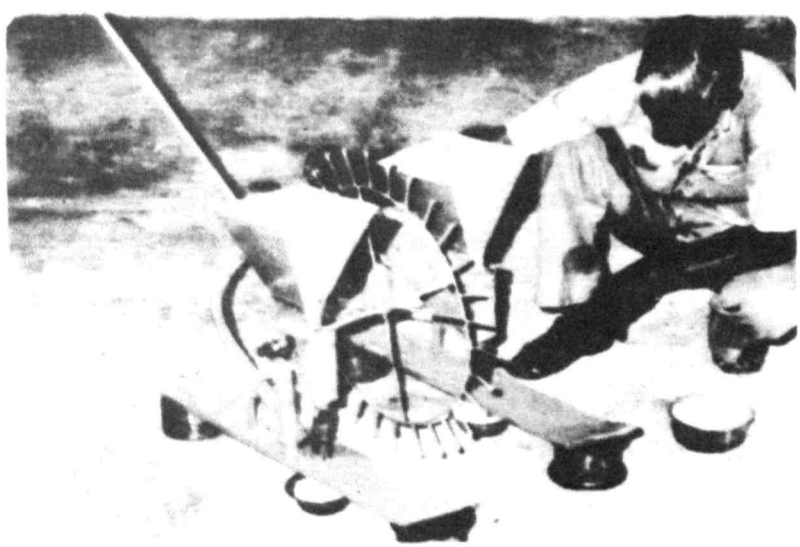


Vertical conveyer Reaper

Paddy Harvester in operation

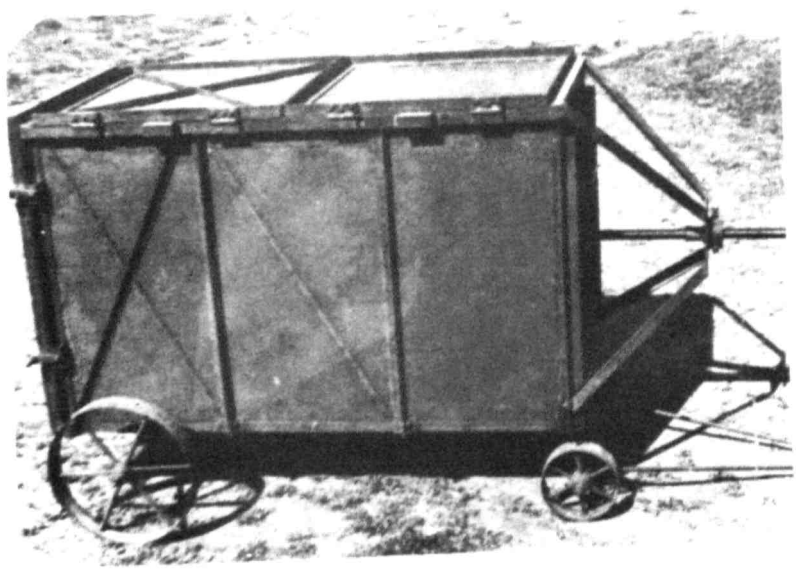


Combination Tillage Tool in Operation



USG Applicator

Paddy Transplanter



Manually Operated Straw Baler

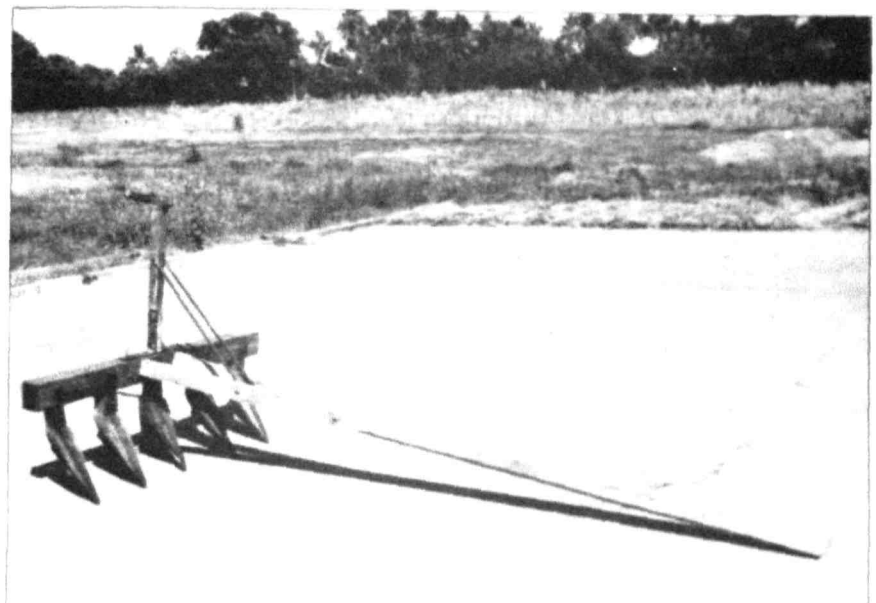
Pre-fabricated Ferro-cement Biogas Dome

A

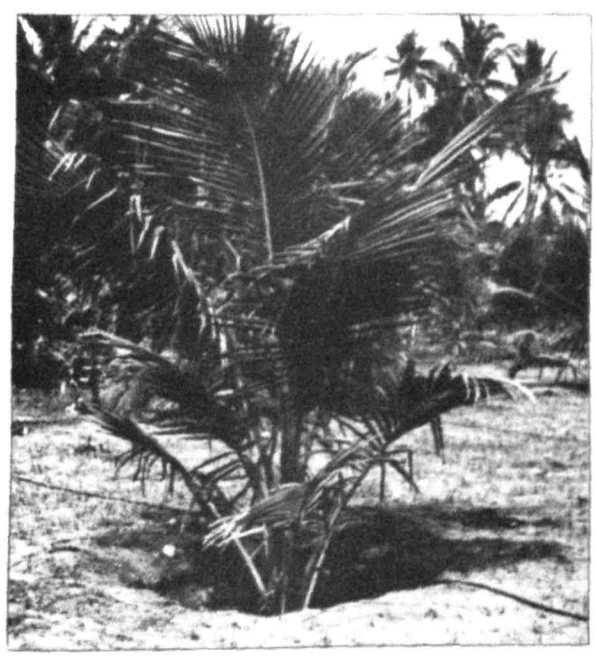
A—Sheep Raised on Grazing

B

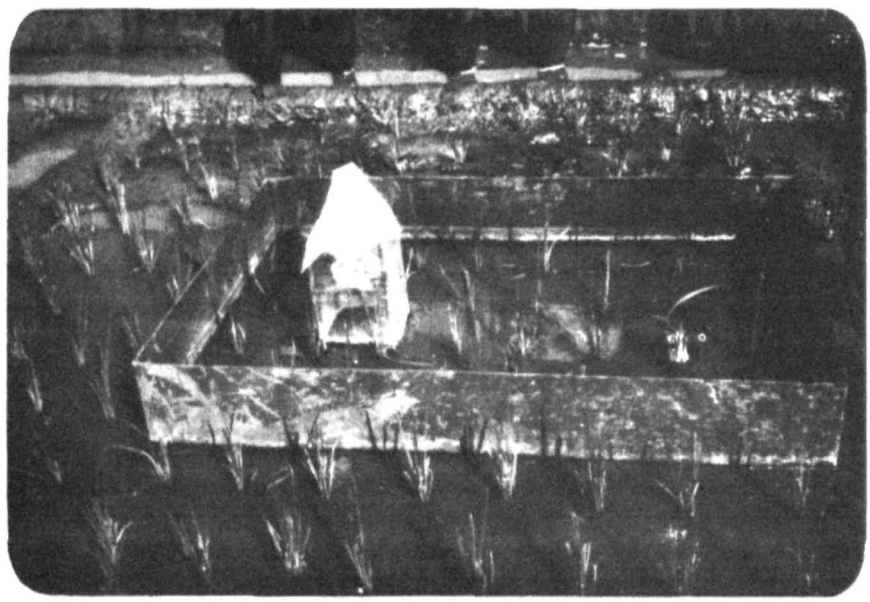
B—Sheep Raised on Subabul as the Sole Roughage



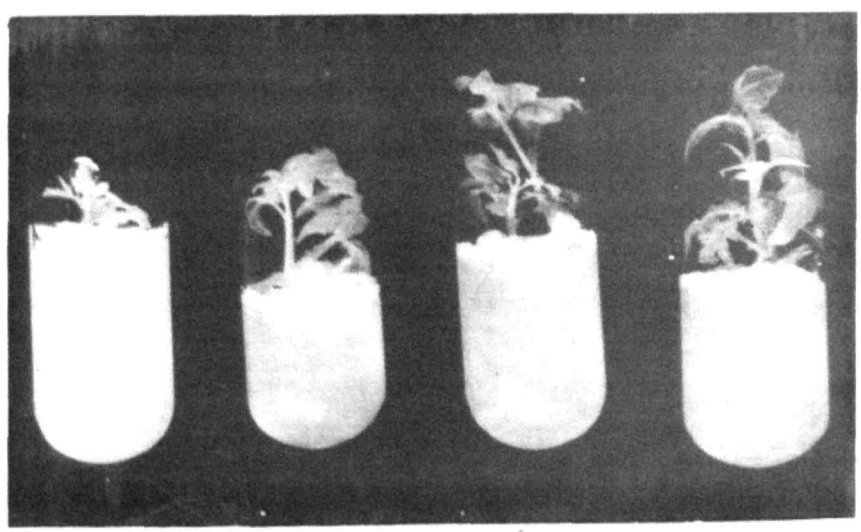
Groundnut Sowing Implement



Drip Irrigation - Coconut



Volatalization and Leaching Loss Studies



Growth of Shootlings in Culture

rigida, *Acartia crythraea*, their larvae and edible oyster larvae. The above marine plankters could have penetrated the Pullavali brackish water environment which registered fairly a high salinity of 31.5%.

A new cage has been fabricated with improved methods with upper frame and fixed with the raft. It gave more height to the cage above the water level which avoided the fishes and prawns escaping from the cage. Seed collections were carried out and 200 number of *Penaeus mondon* were collected and stocked in one of the cages. The size ranged from 0.800 to 1.100 g. They grew to a maximum of 23.5 g with an average of 21.1 g in two months. One of the cages was stocked with 100 numbers of mullet seeds of the size 1.6 to 5.2 g. They grew to a maximum of 81.5 g with an average of 63.2 g within a period of four months. The survival rate was 16.5% and the growth rate was 14.5 g per month.

In order to carry out the project on polyculture of fishes in brackish water, variaus brackish water regions such as Muthupettai, Adirampatnam, Vettaikkaraniruppu, Kallimedu, Kodikkarai, Thopputhurai, Chempodai and Vedaranyam canal were surveyed. Several of these were practically unsuitable for brackish water farming because of the nature of the area. Hence, three places i.e. Kodikkarai, Kallimedu and Vedaranyam canal were selected for carrying out the various basic studies on the hydrobiology and availability of fish seed. From this study it was found that Kodikkarai and Vedaranyam canals were unsuitable for brackishwater farming. However, in Kallimedu the water was brackish in nature but the seeds were scarce. Shell fishes, particularly the fast growing and maximum yield giving molluscan forms such as edible oysters and mussels were not available.

A design of model frame net was developed and the design was handed over to the Department of Fisheries at Vaigai reservoir.

A new design of trawling line fishing gears was fabricated by using buffalo horn. The experimental fishing with buffalo horn was conducted from the vessel 'Dolphin' and it was found that the jigs used in the line were able to catch the predatory fishes. Four more fishing grounds have also been identified in order to operate the trawl nets in the inshore water of Tuticorin.

Samples of sea weeds, viz , *Gracillaria* sp. *Valoniapsis* sp. *Sargassum* sp. *Ulva lactuca*, *Stoechaspermum* sp. and *Padina tetrastromatica* were analysed for their composition. Ash content ranged from 14.1% to 31.8%, fat 2 to 2.1%, reducing sugars 0.12 to 10.00% and protein from 8.6 to 16.0% on dry weight basis.

The phosphorus content varied from 160-360 mg, iron 65 to 470 mg and calcium 400 to 1540 mg. Samples of *Caulerpa scalpeiliformis* and *Ulva raticulate* were found to have 8.2% and 15.8% of ash content and 1.0 and 2.8% of fat content respectively.

Madurai, Trichy and Pondicherry; Regional Research Stations at Vridhachalam, Paiyur and Aruppukkottai; Tamil Nadu Rice Research Institute, Aduthurai; National Pulses Research Centre at Vamban; and Veterinary College at Madras adopted 20 villages under the new 20 Point Programme. Provision of technical support through trainings, demonstrations, meetings etc., was the major activity carried out. Arrangements were also made for the setting up of dairy, poultry and sericulture units in the selected villages.

The details of various extension activities are given below:

1. Trainings

After the introduction of the Training and Visit system in Tamil Nadu, training the subject matter specialists of the State departments became the responsibility of the TNAU. A team of resource personnel was identified for each district to take part in the Monthly Zonal Workshop. A Training Division was established in the Directorate of Extension Education to coordinate and organise different training programmes of the University. Periodical training programmes (on-campus as well as off-campus) to farmers, farm women, extension workers, school drop outs, staff of various developmental agencies, village artisans and so on were organised during the year under report and the details are given below:

Seven hundred and fifty-five training programmes were organised involving 30,022 beneficiaries as noted here under. The beneficiaries: farmers-20,112; farm women-1958; extension functionaries-6141; forest rangers-144; pre-release defence personnel-52; teachers-215; students-970; scientists-87; artisans-163 and fishermen-180.

The details of the number and kind of beneficiaries of various types of training programmes can also be seen in the Table given below:

Beneficiaries of Training Programmes

Training category	No. of trainings	Number of beneficiaries									
		Farmers	Farm women	Extn. functionaries	Forest rangers	Army personnel	Teachers	Students	Scientists	Artisans	Fishermen
I. Agriculture											
T&V training	37	—	—	845	—	—	—	—	—	—	—
Govt. of India Minikit trg.	10	—	—	274	—	—	—	—	—	—	—
General crop production	277	14219	548	2192	—	36	82	260	—	—	—

Manures and fertilisers	47	1470	5	104	—	—	—	184	21	—	—
Plant Protection	146	1611	174	1550	—	—	—	43	66	—	—
Forage crops	12	—	—	149	—	—	—	—	—	—	—
Extension Education	8	—	—	134	144	—	—	—	—	—	—
Sericulture	2	—	15	—	—	—	—	7	—	—	—
Horticulture	48	589	360	220	—	4	—	215	—	—	—
Agricultural Engineering	5	835	—	252	—	—	—	25	—	163	—
Animal Sciences	80	1166	213	271	—	12	133	236	—	—	—
Fisheries	13	140	—	150	—	—	—	—	—	—	180
Home Science	24	87	643	—	—	—	—	—	—	—	—
Total	765	20,112	1, 58	6,141	44	52	215	970	87	163	180

Grand total of beneficiaries : 30,022

2. Demonstrations

During the year 1984 85, 880 demonstrations on various subject matter areas such as crop cultivation, seed treatment, fertilisers, plant protection, land reclamation, horticulture, home-science, compact block demonstrations, farm implements and equipments, animal sciences and fisheries were organised.

The National Demonstration Scheme at Vellore, laid out 'Entire farming Systems' demonstrations with four combinations of 'Crop + Dairy', 'Crop + Poultry', 'Crop + Piggery' and 'Crop + Fruit' systems.

3. Media Utilisation

The various centres disseminated innovations through

i) print media by way of writing 621 articles in the dailies and farm magazines ;

ii) All India Radio by broadcasting 366 programmes ; and

iii) Doordarshan by telecasting 74 programmes

4. Group Methods

The TNAU centres conducted 100 farm/field farmers' days, 86 exhibitions 100 camps/campaigns, 225 village meetings and 128 slide/film shows.

5. Poultry and Livestock Research and Development Centres

i) Poultry Research and Development Centres

The Poultry Research and Development centres undertook 1535 farm

visits, vaccinated 13,486 birds, diagnosed and investigated diseases in 1062 birds, analysed 53 feed samples, established 47 poultry units, rendered 2641 technical advice and conducted 1977 post-mortem examinations.

ii) Livestock Research and Development Centres

Following were the important activities carried out by the Livestock Research and Development Centres.

Diagnosis and treatments	832 animals
Pregnancy tests	177 animals
Sample/specimen examination	6889
Vaccination	1600 animals
Establishment of dairy units	13
Technical advice	1159
Post-mortem	19 animals

6. Information Support

The various centres gave information support by way of bringing out 176 publications (leaflets, folders, booklets etc.) and answering 1805 queries of the farmers. The TNAU published the following periodicals.

i) Valarum Velanmai

This is a Tamil Monthly Journal published by the Communication Centre, Coimbatore with about 16,000 subscribers. During the year, the following special issues were brought out for the benefit of the farmers.

a) Flowers
b) Rainfed Crop cultivation
c) Animal Science
d) Agricultural Engineering
e) Horticulture
f) Farmers' Special
g) Sericulture
h) Fisheries
i) Pulses
j) Rural Development

ii) Kalnadai Kadhir

This is a Tamil Quarterly Journal in animal sciences published from the Veterinary College, Madras and about 2000 subscribers were enrolled.

iii) Uzhavar Thunaivan

The Agricultural College and Research Institute, Madurai brings out this Tamil Monthly Journal.

iv) TNAU Newsletter

The monthly Newsletter carries latest research findings and extension education activities of the University. About 1100 copies of this periodical were sent to the agricultural universities, selected research organisations and scientists in India and abroad.

7. Problem Solving Visits

The scientists of various TNAU centres undertook 3047 visits to the farmers' fields for on the-spot study and diagnosis of the problems and offering solutions.

8. Distant Learning Programmes

i) Farm School on AIR

It is a joint venture of TNAU and All India Radio Stations at Coimbatore, Madurai, Tirunelveli, Trichy and Madras.

Latest technologies were taught to the farmers by offering 13 lessons broadcast over three months @ one

lesson per week. Impact of the course was assessed by inviting answers to the questions on the subjects. A one-day contact programme also found a part of the course wherein the participants were provided with an opportunity to discuss with the scientists on the subjects. The broadcast lessons were printed in the form of a book and supplied to the registered participants.

The following courses were offered during the period under report :

a) Water management
b) Low-cost, no-cost technology
c) Murungai sagupadi
d) Rat eradication
e) Biogas
f) Management of milch cows
g) Fish growing

ii) Correspondence Course

Another important form of distant learning programme of TNAU is the correspondence course conducted for a period of three months. The farmers are enrolled on paying a registration fee of Rs. 25/- and six lessons are mailed to them @ one lesson per fortnight. The participants are encouraged to answer the questionnaire sent along with each lesson for assessing the effectiveness of the course. A contact programme is also organised at the end.

During the period under report, the following courses were conducted.

1. Hilly vegetables for plains
2. Cultivation of forage crops
3. New technologies for paddy cultivation

9. Input Support

The various centres of TNAU supplied the following inputs to the farmers.

Paddy	74,471 kg
Other cereals	1,593 kg
Pulses	6,210 kg
Oilseeds	15,520 kg
Sugarcane setts	133 MT
Coconut seedlings	9,661
Vegetables	30 kg & 450 packets
Seedlings of the trees crops	9,85,664
Fertilisers	86.7 MT
Pesticides	7514.2 kg
	378.4 litres
Farm implements	2397
Plant protection equipments	863
Sheep and goats	717
Rabbits	9 units
Poultry chicks	518
Buffaloes	12
Bee-hives	45

A total of about 73 tonnes of breeder seeds of various crops was produced during 1984-85. It is envisaged to increase the production to 123 tonnes during 1985-86.

Breeder seeds production in the University

	Quantity in 1984-85 (kg)	Programmed production in 1985-86 (kg)
Paddy	11,225	12,720
Millets	752	89
Pulses	20,550	15,165
Oilseeds		
Groundnut	33,495	87,000
Sunflower	7,000	7,500
Sesamum	135	135
Vegetables	240	200
Total	73,397	1,22,774

11. Evaluation of pre-release cultures in Adaptive Research Trials (ART) and Multi Location Trials (MLT II)

During 1984 85, fifty-one cultures of various crops were evaluated in farmers' holdings over 1480 locations spread throughout the State as abstracted below :

Evaluation of pre-release cultures in ART/MLT. II

	No. of cultures tested	No. of locations
Paddy	20	370
Millets	11	582
Pulses	12	334
Oilseeds	4	60
Cotton	3	73
Vegetables	1	70
	51	1489

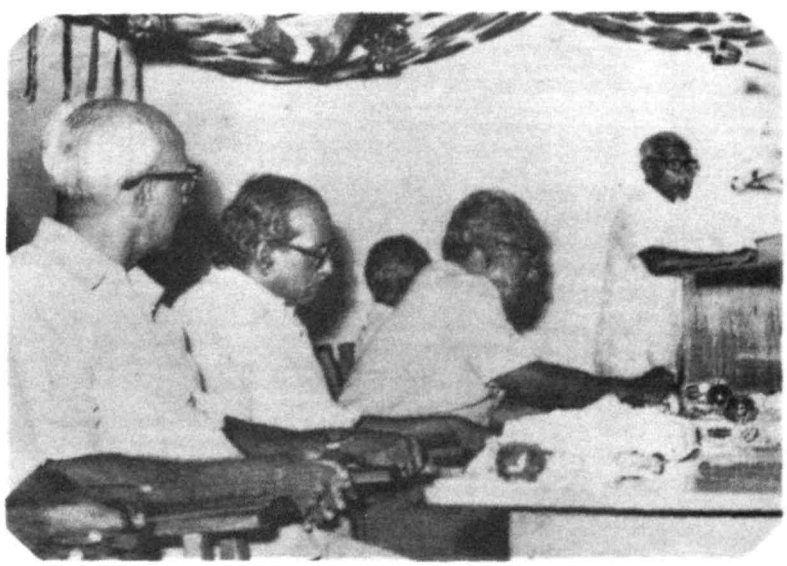
12. On-Farm Testing

Till recently trials in farmers' holdings were mainly restricted to testing of pre-release cultures. A beginning was made during 1984-85 for testing a few proven innovations in farmers' holdings. A comprehensive programme of on-farm trials has been drawn and is under implementation. A total of 2,215 trials are to be organised in various districts of the State. Such on-farm testing trials include management practices and plant protection aspects of various crops.

Vice-Chancellor at the Farmers' Day and 14th Anniversary of
Farm and Home Unit of AIR, Coimbatore

Method Demonstration of Manuring Coconut

Exhibition Arranged During the Farmers' Day Function at LRS, Kattupakkam



Farmers' Day at LRS, Kattupakkam - A Farmer Addressing the Gathering

Farmers' Day at CRS, Veppankulam

Farmers' Day cum Decennial Function at KVK, Pondicherry

Result Demonstration of Co 25 (TNS 27) Sorghum

Field Day at the Dryland Forage Research Centre, Palani

Method Demonstration of Morinda Weed Eradication

Integrated Pest Management Practices Explained to the Extension Functionaries and Farmers

ANNEXURE

CIVIL WORKS COMPLETED IN 1984-85

I. Coimbatore Campus

1. Workshop for College of Agricultural Engineering.
2. Improvement to play ground.
3. Soil & Water laboratory for College of Agricultural Engineering.
4. Glass house for Horticulture faculty.

II. Madurai Campus

1. 62 KVA Diesel generator Installation.
2. Recreation club.

III. Madras Campus

1. Conversion of LA ward into 'X' ray unit.
2. Farmers' hostel.

IV. Tuticorin

1. Septic tank in hostel-II.
2. ICC-Freezing plant.
3. Compound wall.

V. Forestry Research Station, Mettupalayam

Construction of store room by conversion of tractor shed.

VI. Multi-Crop Experiment Station, Palur.

Pump house.

VII. Horticultural Research Station, Yercaud.

Associate Professor quarters.

VIII. Regional Research Station, Paiyur.

1. Laboratory.
2. Glass house.
3. Open shed.
4. Cattle shed.
5. Professor quarters.
6. Trainees' hostel.

IX. Tamil Nadu Rice Research Institute, Aduthurai.

1. Thrashing floor.
2. Drivers quarters.

X. Cotton Research Station, Srivilliputhur.

1. Laboratory.
2. Green house.
3. Cattle, implement and vehicle sheds.
4. Thrashing floor.
5. Rat proof godown.
6. Professor quarters (1 No.)
7. Associate Professor quarters (3 Nos.).
8. Other staff quarters (1 No).

XI. National Pulses Research Centre, Pudukkottai.

Rat proof godown.

XII. Oilseeds Experiment Station, Tindivanam.

Thrashing floor.

APPENDIX - I

LIST OF SCHEMES

	University Research Schemes - Non-Plan	1984-85 Revised Estimate (Rs.)
1.	Scheme for Improvement of Groundnut through Induction of Mutation, Coimbatore.	71,500
2.	Scheme for Surveillance of Pests and Diseases, Vellore.	1,11,100
3.	Scheme for Studies on the Residues of Pesticides in Plant and Soil, Coimbatore.	1,61,700
4.	Scheme for Research on Citrus Die-back, Tenkasi.	90,700
5.	Scheme for Research on Citrus Die-back, Coimbatore.	35,100
6.	Scheme for Intensification of Pulses Research, Vamban.	50,900
7.	Scheme for Improvement of Redgram and Soybean, Vamban.	82,100
8.	Scheme for Evolution of Cumbu Resistant to Green Ear, Vamban	89,100
9.	Scheme for Evolution of Cumbu Resistant to Green Ear, Kovilpatti.	1,06,600
10.	Scheme for Maximisation of Pulses Production, Vamban.	1,41,400
11.	Scheme for Improvement of Millets for Grain and Fodder, Kovilpatti	1,07,000
12.	Scheme for Improvement of Sunflower in Tamil Nadu, Kovilpatti.	1,64,800
13.	Scheme for Improvement of Wetland Pulses, Aduthurai.	1,38,900
14	Scheme for Coordinated Agronomic Experiment on Sugarcane, Villupuram,	2,27,700
15.	Scheme for Coordinated Agronomic Experiment on Sugarcane, Trichy.	2,57,600
16.	Scheme for Research on Nematode Parasites of Sugarcane Crop, Cuddalore.	1,27,300
17.	Scheme for Biological Testing of Pesticides Laboratory, Vamban.	25,700
18.	Scheme for Biological Testing of Pesticides Laboratory, Kovilpatti.	48,000
19.	Scheme for Biological Testing of Pesticides Laboratory, Aduthurai.	71,900
20.	Scheme for Biological Testing of Pesticides Laboratory, Tindivanam.	44,900

University Research Schemes - Plan

1.	Scheme for Biological Control of Crop Pests, Coimbatore.	49,100
2.	Scheme for Breeder Seed Increase, Bhavanisagar.	2,61,900
3.	Scheme for Studies on Standardisation of Seed Production and Seed Storage Techniques in Tropical Vegetables, Bhavanisagar.	64,700
4.	Scheme for Studies on Standardisation of Seed Production and Seed Storage Techniques in Tropical Vegetables, Coimbatore.	41,100
5.	Scheme for Establishment of Foliar Diagnosis Laboratory, Coimbatore.	47,400
6.	Regional Research Station, Aruppukkottai.	5,01,800
7.	National Pulses Research Centre, Pudukkottai.	3,57,100
8.	Scheme for Improvement of Chrysanthemum and Marigold for Fresh Flower Trade, Madurai.	18,300
9.	Scheme for Research on Heterosis Breeding in Vegetable Crops, Coimbatore.	27,000
10	Scheme for Strengthening of Coordinated Rice Entomological Research, Coimbatore.	1,49,900
11.	Scheme for Strengthening of Coordinated Rice Entomological Research, Madurai.	61,600
12.	Scheme for Strengthening of Coordinated Rice Entomological Research, Paiyur.	3,000
13.	Scheme for Strengthening of Coordinated Rice Entomological Research, Aduthurai.	5,000
14.	Scheme for Establishment of Plant Clinic Centre, Vellore.	96,300
15.	Scheme for Establishment of Plant Clinic Centre, Tirunelveli.	72,100
16.	Scheme for Establishment of Plant Clinic Centre, Kancheepuram.	47,500
17.	Scheme for Development of Sugarcane Varieties Suitable for Southern Districts of Tamil Nadu, Madurai.	1,06,600
18.	Scheme for Techno-Economic Survey of the Different Districts of Tamil Nadu, Thanjavur.	1,41,300
19.	Scheme for the Development of Rice Varieties Suitable for Periyar-Vaigai River Project Area, Madurai.	1,14,800
20.	Scheme for Research on Temperate Vegetables, Sandynallah.	53,000
21.	Scheme for Research on Temperate Vegetables, Kodaikanal.	37,900
22.	Scheme for Establishment of Regional Laboratory, Trichy.	1,09,600
23.	Scheme for Establishment of Regional Laboratory Paiyur.	1,10,400
24.	Banana Research Station, Vellore.	2,95,100
25.	Scheme for Strengthening and Coordinating Rice Virus Diseases and Mycoplasma Diseases, Coimbatore.	45,200

26.	Scheme for Strengthening and Coordinating Rice Virus Diseases and Mycoplasma Diseases, Madurai.	92,800
27.	Scheme for Research on Bunchy Top Virus Disease, Thadiyankudisai.	49,900
28.	Scheme for Research on Improvement of Chillies in the Southern Districts of Tamil Nadu. Paramakudi.	1,27,100
29.	Scheme for Research on Potato Virus Diseases, Sandynallah.	27,000
30.	Scheme for Establishment of a Horticultural Complex, Kattupakkam.	1,23,400
31.	Scheme for Research on the Improvement of Cultivation of Palmyrah Palm, Srivilliputhur.	1,97,400
32.	Turmeric Research Scheme, Bhavanisagar.	85,000
33.	Scheme for Synthesising High Yielding, Superior Quality and Short Duration Interspecific and Intra-specific Hybrid Cotton for Rainfed and Irrigation Tracts of Tamil Nadu. Kovilpatti.	15,400
34.	Scheme for Research on Dryland Forage Crops of Black Soil Regions of Tamil Nadu, Palani	83,000
35.	Scheme for Improvement of Edward Rose and Red Rose, Coimbatore.	21,800
36.	Scheme for the Development of Economical Roofing Materials, Coimbatore.	33,300
37.	Scheme for the Operational Research Project on Efficient Water Management Practices in Tankfed Areas, Kancheepuram.	63,200
38.	Scheme for the Operational Research Project on Efficient Water Management Practices in Tankfed Areas, Aruppukkottai.	70,500
39.	Scheme for Development of Crop Pattern for Different Agro-Climatic Zones, Coimbatore.	1,66,800
40.	Scheme for Development of Crop Pattern for Different Agro-climatic Zones, Vellore.	65,900
41.	Scheme for Development of Crop Pattern for Different Agro-climatic Zones, Tirunelveli.	78,800
42.	Scheme for Development of Crop Pattern for Different Agro-climatic Zones, Pariyur.	65,800
43.	Scheme for Establishment of Seed Technology Unit, Madurai.	97,400
44.	Krishi Vigyan Kendra, Coimbatore.	3,15,600
45.	Krishi Vigyan Kendra, Madurai.	2,94,900
46.	Scheme for the Hybrid Development by Mass Production of Haploid and Homozygous Plants in Hybrid Rice and Sorghum by Anther and Pollen Culture, Coimbatore.	84,400
47.	Scheme for the Intensification of Research on Medium Staple Cotton Types, Srivilliputhur.	1,02,500

University Research Schemes - Plan

1.	Scheme for Biological Control of Crop Pests, Coimbatore.	49,100
2.	Scheme for Breeder Seed Increase, Bhavanisagar.	2,61,900
3.	Scheme for Studies on Standardisation of Seed Production and Seed Storage Techniques in Tropical Vegetables, Bhavanisagar.	64,700
4.	Scheme for Studies on Standardisation of Seed Production and Seed Storage Techniques in Tropical Vegetables, Coimbatore.	41,100
5.	Scheme for Establishment of Foliar Diagnosis Laboratory, Coimbatore.	47,400
6.	Regional Research Station, Aruppukkottai.	5,01,800
7.	National Pulses Research Centre, Pudukkottai.	3,57,100
8.	Scheme for Improvement of Chrysanthemum and Marigold for Fresh Flower Trade, Madurai.	18,300
9.	Scheme for Research on Heterosis Breeding in Vegetable Crops, Coimbatore.	27,000
10	Scheme for Strengthening of Coordinated Rice Entomological Research, Coimbatore.	1,49,900
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12.	Scheme for Strengthening of Coordinated Rice Entomological Research, Paiyur.	3,000
13.	Scheme for Strengthening of Coordinated Rice Entomological Research, Aduthurai.	5,000
14.	Scheme for Establishment of Plant Clinic Centre, Vellore.	96,300
15.	Scheme for Establishment of Plant Clinic Centre, Tirunelveli.	72,100
16.	Scheme for Establishment of Plant Clinic Centre, Kancheepuram.	47,500
17.	Scheme for Development of Sugarcane Varieties Suitable for Southern Districts of Tamil Nadu, Madurai.	1,06,600
18.	Scheme for Techno-Economic Survey of the Different Districts of Tamil Nadu, Thanjavur.	1,41,300
19.	Scheme for the Development of Rice Varieties Suitable for Periyar-Vaigai River Project Area, Madurai.	1,14,800
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31.	Scheme for Research on the Improvement of Cultivation of Palmyrah Palm, Srivilliputhur.	1,97,400
32.	Turmeric Research Scheme, Bhavanisagar.	85,000
33.	Scheme for Synthesising High Yielding, Superior Quality and Short Duration Interspecific and Intra-specific Hybrid Cotton for Rainfed and Irrigation Tracts of Tamil Nadu. Kovilpatti.	15,400
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47.	Scheme for the Intensification of Research on Medium Staple Cotton Types, Srivilliputhur.	1,02,500

48.	Scheme for the Intensification of Research on Medium Staple Cotton Types, Kovilpatti.	55,200
49.	Scheme for the Intensification of Research on Medium Staple Cotton Types, Paiyur.	32,100
50.	Scheme for M. Sc. Course in Plant Nematology, Coimbatore.	28,100
51.	Scheme for Establishment of a Centre for Sericulture, Coimbatore.	1,45,300
52.	Scheme for Starting of Post-graduate Diploma in Plant Protection, Coimbatore	1,92,200
53.	Strengthening of Research Stations Under National Agricultural Research Project.	2,00,000
54.	Scheme for Evolution of High Yielding Crop Varieties Suitable for Lower Bhavani Project Area, Bhavanisagar.	58,700
55.	Scheme for Starting of Post-graduate Diploma in Horticulture (Plantation Crops/Ornamental Gardening), Thadiyankudisai	1,61,400
56.	Scheme for Strengthening Research on Chemistry of Submerged Soils of Thanjavur District, Aduthurai.	61,700
57.	Scheme for Establishment of Regional Laboratory, Yercaud.	97,600
58.	Scheme for Establishment of an Unit for Conducting Research Studies in Mycotoxin, Madurai	72,500
59.	Scheme for Research on Introduction of New Tree Species in Tamil Nadu, Coimbatore.	30,000
60.	Scheme for Research and Development of Forage Crops, Coimbatore.	1,14,500
61.	Scheme for Starting M. E. (Ag) / M. Sc. (Agr) in Water Management, Coimbatore.	1,000
62.	Scheme to Evaluate Soil Crusting and Hardening Problems in Tamil Nadu and Evolve Suitable Economic Soil Management Practices, Vamban.	49,900
63.	Scheme for Intensification of Research on Soybean Cultivation in Tamil Nadu, Aduthurai	26,000
64.	Scheme on Intensification of Research on Soybean Cultivation in Tamil Nadu, Paiyur.	25,800
65.	Scheme for Strengthening of Coconut Research in Thanjavur District, Veppankulam.	1,15,100
66.	Scheme for Establishment of Advanced Centre for Soil and Crop Management Studies, Coimbatore.	72,200
67.	Scheme for Establishment of Advanced Centre for Plant Protection Studies, Coimbatore	91,800
68.	Scheme for Strengthening of the Training Division in the Directorate of Extension Education, Coimbatore.	1,09,800

69.	Scheme for Research on Improvement of Coriander and Vegetables at Aruppukkottai.	31,100
70.	Scheme for Strengthening Seed Production Programme, Pattukkottai	25,000
71.	Scheme for Strengthening Seed Production Programme, Palur	25,000
72.	Scheme for Strengthening Seed Production Programme, Kovilpatti	25,000
73.	Scheme for Socio-economic Studies on Tribal Welfare in the Lower Palani Hills, Thadiyankudisai.	50,000
74.	Scheme for Studies on the Production Physiology on Rice, Madurai.	42,000
75	Scheme for Establishment of Wetland Banana Research Station, Sirugamani.	48,500
76	Establishment of Plant Clinic Centre, Salem.	82,000
77.	Establishment of Plant Clinic Centre, Srivilliputhur.	77,500
78.	Scheme for Establishment of Agricultural Research Station, Vellore, North Arcot District.	2,14,900
79.	Scheme for Strengthening Estate Officer, Coimbatore.	64,000
80.	Scheme for Starting of M. E. (Ag) Degree Programme in Post-harvest Technology, Coimbatore.	10,000
81.	Scheme for Studies on Materials and Methods of Farm Structures, Coimbatore.	20,600
82.	Up-gradation of TRRI, Aduthurai and also Reorganisation of the Directorate of Research (Agri)	1,30,000
83.	Agricultural College, Killikulam	10,00,000
84.	Scheme for Genetic Potential of Rice Dwarfs, Coimbatore,	33,100
85.	Scheme for Studies on the Nutritive Value of New Varieties and Their Changes due to Modern Agricultural and Processing Technology, Madurai.	31,100
86.	Scheme for Research on Introduction of New Tree Species in Tamil Nadu, Mettupalayam	26,000
87.	Scheme for Research on Introduction of New Tree Species in Tamil Nadu, Vellore	13,700
88.	Scheme for Research on Introduction of New Tree Species in Tamil Nadu, Pudukkottai.	18,800
89.	Scheme for Research on Introduction of New Tree Species in Tamil Nadu, Tirunelveli.	17,000
90.	Scheme for Vegetable Seed Production, Palur.	79,400
91.	Scheme for Popularisation of Agricultural Implements through Krishi Vigyan Kendra, Coimbatore.	36,300
92	Scheme for Popularisation of Agricultural Implements through Krishi Vigyan Kendra, Madurai.	55,200

93.	Scheme for Evolution of Medium Staple Cotton Suitable for Black Soil Rainfed Tracts of Southern Districts, Kovilpatti.	44,400
94.	Scheme for Evolution of Forage Crops Suited to the Milk Shed Areas of North-eastern Districts of Tamil Nadu, Vellore.	55,800
95.	Scheme for Improvement of Minor Pulses and Synthesising Hybrid Varieties of Sesamum, Coimbatore.	1,06,200
96.	Scheme for Developing Suitable Sprayer for Spraying Tall Trees, Coimbatore	4,000
97.	Scheme for Studies on the Indigenous Pesticides of Plant Origin, Coimbatore.	21,400
98.	Scheme for Establishment of Rural Observatory, Coimbatore.	6 ,200
99.	Scheme for Seed Production and Seed Storage Studies in Sub-tropical and Temperate Crops, Periyakulam.	76,800
100.	Scheme for Improvement of Groundnut Suitable for Rainfed Area, Tindivanam.	4[illegible],600
101.	Project on Integrated Inter-disciplinary Collaborative Research on Sorghum, Madurai.	71,200
102.	Scheme for Genetic Improvement of Honey Bee, Yercaud	73,500
103.	Scheme for Integrated Weed Management in Different Cropping System, Vridhachalam.	29,000
104.	Scheme for Integrated Weed Management in Different Cropping System, Kovilpatti.	40,700
105.	Scheme for Integrated Weed Management in Different Cropping System, Aduthurai.	24,000
106.	Scheme for Strengthening the Post-graduate Teaching and Research in Agricultural Marketing Management, Coimbatore.	59,400
107.	Scheme for the Development of Suitable Varieties of Sweet Potato and Tapioca for Ethanol Production, Coimbatore.	39,800
108.	Scheme for Improvement of Forage Grasses, Legumes and Pasture Development, Aruppukkottai.	60,400
109.	Scheme for Improvement of Forage Grasses, Legumes and Pasture Development, Paiyur	55,800
110.	Scheme for Improvement of Forage Grasses, Legumes and Pasture Development, Erode.	57,900
111.	Scheme for Research on Oil Bearing Tree Crops Like Neem, Pungam and Silvagronomical Studies on Energy Fuel Yielding Wood Lots, Aruppukkottai.	30,800
112.	Scheme for Research on Oil Bearing Tree Crops Like Neem, Pungam and Silvagronomical Studies on Energy Fuel Yielding Wood Lots, Mettupalayam.	43,800

113.	Improvement of Existing Downy Mildew Resistant Varieties (Maize) for Yield and Resistability to Rainfed Farming System of Tamil Nadu, Coimbatore.	72,800
114.	Scheme for the Formulation of Improved Agro - Techniques in Grapes Suitable for Dharmapuri District, Paiyur.	1,21,100
115.	Establishment of Centre for Nematode Pests of Crop Plants, Madurai.	1,07,600
116.	Scheme for the Improvement of Brinjal Varieties for North-east Region of Tamil Nadu, Palur.	1,00,800
117.	Studies on the Causes of Low Soil Fertility in Chingleput District, Tirur	75,300
118.	Establishment of a Seed Complex Including Seed Health Testing Training Centre, Bhavanisagar.	1,50,900
119.	Scheme for Agro-Processing of Millet Based Food Products at Village level, Coimbatore.	51,600
120.	Scheme for Strengthening of Seed Production Programme at Multi-crop Experiment Station, Pattukottai.	28,200
121.	Scheme for Starting of Bio fertilizer Production and Quality Control Unit, Coimbatore.	69,600
122.	Scheme for Starting of Bio-fertilizer Production and Quality Control Unit, Madurai.	58,800
123.	Scheme for Studies on Wilt and Button Shedding in Coconut Nagercoil.	1,00,500
124.	Scheme for Improvement of Sunflower, Tindivanam.	97,000
125.	Scheme for Development of Breeders Seed of Millets, Kovilpatti.	78,000
126.	Scheme for Development of Breeders Seed of Millets, Vamban.	55,000
127.	Establishment of Nematology Laboratory, Kancheepuram.	1,96,300
128.	Establishment of Nematology Laboratory, Trichy.	1,90,000
129.	Establishment of Biological Testing Laboratory, Paiyur.	1,01,500
130.	Scheme for Production of Breeders Seed in Paddy, Aduthurai.	81,000
131.	Scheme for Improvement of Manja Makkattai and Thalaivirichan Cholam, Vamban.	65,700
132.	Scheme for Upgrading the Sugarcane Experiment Station, Cuddalore.	1,53,400
133.	Scheme for Strengthening of Multi-crop Experiment Station, Vamban.	38,000
134.	Scheme for Multiplication and Distribution of Pulses, Vamban.	2,29,600

Animal Science - Plan Schemes

1.	Livestock Research Station, Kattupakkam.	30,51,300
2.	Farmers' Training Centre, Pudukkottai.	2,34,200
3.	Mecheri Sheep Research Station, Pottaneri.	1,90,100
4.	Pasture Development Research Project, Pottaneri	1,27,000
5.	University Coordinated Research Project on Fodder Crops, Coimbatore.	98,800
6	University Coordinated Research Project on Fodder Crops, Sandynallah.	15,800
7.	Starting of Ph D. Programme in Pharmacology, Madras.	1,39,000
8.	Scheme for the Establishment of Quality Control Service Division of Animal Feeds, Madras.	1,57,600
9.	Starting of Ph. D. Programme in Obstetrics and Gynaecology, Madras.	49,700
10.	Department of Animal Disease investigation and Control, Madras.	3,16,600
11.	'Cheiron' Making it as Bi-monthly Journal, Madras.	38,300
12.	Scheme for Establishment of Radio Isotope Laboratory and Trace Mineral Nutrition, Madras.	1,04,000
13.	Poultry Research and Development Centre, Namakkal	1,53,500
14.	Poultry Research and Development Centre, Madurai	1,34,200
15.	Poultry Research and Development Centre, Rajapalayam.	1,27,200
16.	Poultry Research and Development Centre, Trichy.	1,73,100
17.	Poultry Research and Development Centre, Tirupur.	1,67,400
18.	Poultry Research and Development Centre, Vellore.	1,56,300
19.	Poultry Research and Development Centre, Pudukkottai.	1,07,000
20.	Farmers' Training Centre, Kattupakkam.	1,72,500
21.	Livestock Research and Development Centre, Tirunelveli.	1,85,800
22.	Livestock Research and Development Centre, Erode.	1,92,600
23.	Livestock Research and Development Centre, Dharmapuri.	2,13,700
24.	Livestock Research and Development Centre, Nagercoil.	1,93,800
25.	Scheme for Strengthening of Bio-chemistry Section for Research and Teaching of Post-graduates, Madras.	36,700
26.	Scheme for Research on Tropical Bovine Theileriasis, Madras.	1,11,800
27.	Directorate of Animal Health, Trichy	2,08,300
28.	Scheme for Establishment of Entomology Research Unit, Madras.	78,700
29.	Scheme for Enrichment of Poor Quality Cellulosic Waste and Pelletting for Maintenance of Work Bullocks and Cows Yielding Less Than Five Litres of Milk, Coimbatore.	64,300
30.	Scheme for Enrichment of Poor Quality Cellulosic Waste and Pelletting for Maintenance of Work Bullocks and Cows Yielding Less Than Five Litres of Milk, Kattupakkam.	45,600

31.	Scheme for the Control of Abortion in Cattle, Erode.	67,600
32.	Scheme for the Control of Abortion in Cattle, Coimbatore.	66,000
33.	Scheme for the Control of Abortion in Cattle, Trichy.	95,200
34.	Department of Clinics, Madras.	12,53,600
35.	Scheme for Starting of Ph. D. Programme in Therapeutics, Madras.	1,43,300
36.	Scheme for Influence of Aflotoxicosis on the Immune Response of Cattle Protected Against Rinderpest, Madras.	1,35,100
37.	Scheme for Starting of Ph. D. Programme in Veterinary Pathology, Madras.	56,600
38.	Scheme for Starting of Ph. D. Programme in Preventive Medicine, Madras.	1,34,000
39.	Scheme for Evolving Broiler Rabbit. Sandynallah	50,400
40.	Scheme for Conducting Short Term Training Course in the Department of Meats, Madras.	90,800
41.	Scheme for Organisation of the Dairy Plant at the Depttment of Dairy Science, Madras.	5,88,100
42.	Scheme for Strengthening the Department of Animal Husbandry, Madurai.	51,300
43.	Scheme for Electron Microscopial and Ultra Structural Studies on Rhinosporidiasis in Nasal Polyps of Animals and Man, Madras.	1,75,500
44.	Scheme for Breeding Ducks for Egg, Madras	79,700
45.	Scheme for Establishment of Vaccine Research Centre, Madras.	2,59,500
46.	Scheme for Studies on Tropical Bovine Theileriasis (Acarology), Madras.	1,03,500
47.	Scheme for Karyology of Cattle and Buffalo Chromosomes with Particular Reference to Sterilityand Infertility, Madras.	71,000
48.	Establishment of Institute of Animal Nutrition, Kattupakkam.	3,55,900
49.	Scheme for Establishment of Regional Sheep Research Centre, Aruppukkottai.	70,600
50.	Scheme for Starting Ph. D. programme in Veterinary Physiology, Madras.	30,000
51.	Scheme for Establishment of Livestock Research and Development Centre, Soil and Water Management Research Institute, Thanjavur.	71,500
52.	Scheme for Starting M. V. Sc. Degree Course in Dairy Technology, Dairy Microbiology and Dairy Chemistry, Madras.	69,700
53.	Scheme for Establishment of a Separate unit for Research on Protozoology and Helminthology, Madras.	47,300
54.	Scheme for Strengthening of Radiology Section, Madras.	42,800

55.	Establishment of a Unit for Histology and Histo-chemistry, Madras.	54,600
56.	Strengthening of Animal Husbandry Statistics, Madras.	21,200
57.	Establishment of a Breeding Unit for the Production of Australorp White Pullet Chicks, Poultry Research Station, Madras.	13,000
58.	Establishment of Poultry Training Centre, Madurai.	88,900
59.	Scheme for Evolving a Synthetic Mutton Breed of Sheep for Tamil Nadu, Kattapakkam.	61,400

Fishery Science - Plan Schemes

1.	Scheme for Culture of Brime Shrimp *Artemia sabina*, Tuticorin.	48,800
2.	Scheme for Pollution Monitoring Studies in Tuticorin Waters, Tuticorin.	22,800
3.	Scheme for Mariculture of Fishes, Tuticorin.	41,400
4.	Scheme for Brackish Water Pen Culture, Tuticorin.	41,400
5.	Scheme for Operational Research Project on Fish Culture, Killikulam.	48,300
6.	Scheme for Operational Research Project on Fish Culture, Aduthurai.	31,000
7.	Scheme for Operational Research Project on Fish Culture, Madurai.	37,800
8.	Starting of M F.Sc. Course, Tuticorin.	52,100
9.	Scheme fo Polyculture of Fin Fishes and Shell Fishes in Brackish Water.	97,100

I. C. A. R. Schemes - Fully Financed

1.	Strengthening of Agricultural Entomology, Madurai.	45,000
2.	Scheme for Strengthening of Post-Graduate Departments-Establishment of New Departments, Madurai.	39,500
3.	Scheme for Establishment of a New Wing for Research and Teaching in Veterinary Public Health and Epidemiology, Madras.	45,000
4.	Scheme for Influence of Climate on Ontogenic Changes in Determining Evapo-transpiration and Biomass Production in Sugarcane, Cuddalore.	38,100
5.	Scheme for Production of Super Elite and Elite Sunflower Seed, Bhavanisagar.	4,52,800
6.	IDRC Research Project on Sesamum, Vridhachalam.	1,65,900
7.	IDRC Research Project on Sesamum, Paiyur.	65,800

8.	IDRC Research Project on Sesamum, Srivilliputhur.	70,700
9.	Scheme for Studies on Biological Effect of Chitin Inhibitor on *Spotoptera litura* and *Heliothis armigera*, Coimbatore.	30,400
10.	Scheme for Studies on Management of Pulses *Heliothis armigera* and *Spodoptera litura*, Coimbatore.	30,400
11.	Scheme for All India Multilocational Research on Agricultural Acerology, Coimbatore.	64,100
12.	Scheme for White Tip Nematode of Rice, Nagercoil.	1,14,800
13.	All India Coordinated Research Project on Betelvine Diseases, Velur.	85,300
14.	Scheme on the Control of Tomato Virus Disease by Antivirus Principles from Non-hosts, Coimbatore.	17,400
15	Scheme for Research on Improvement of Pepper, Thadiyankudisai.	42,400
16.	Scheme for Research on Improvement of Tree Species in Tamil Nadu, Thadiyankudisai.	35,900
17.	Coordinated Scheme on National Demonstration of Major Food Crops, Vellore.	1,54,600
18.	Lab-to-Land Programme for Transfer of Technology to Farmers' Families, KVK, Coimbatore.	2,10,000
19.	Lab-to-Land Programme for Transfer of Technology to Farmer' Families, KVK, Madurai.	2,91,600
20.	Lab-to-Land Programme for Transfer of Technology to Farmers' Families KFSC, Trichy.	1,36,100
21.	Lab-to-Land Programme for Transfer of Technology to Farmers' Families, KVK, Pondicherry.	59,000
22.	Lab-to-Land Programme for Transfer of Technology to Farmers' Families, Paiyur.	65,000
23.	Lab-to Land Programme for Transfer of Technology to Farmers' Families, Vridhachalam.	1,88 500
24.	Lab-to-Land Programme for Transfer of Technology to Farmers' Families, Aduthurai.	1,87,000
25.	All India Coorninated Research Project for the Rapid Improvement of Agricultural Technology Directed at Socio-Economic Unpliftment of Scheduled Caste and Other Backward Communities. Aruppukkottai.	1,71,100
26.	Scheme for Breeder Seeds, National Seed Production, Bhavanisagar.	33,600
27.	Project of Technical Cooperation between the IDRC, Canada and the ICAR, New Delhi on Post-harvest Technology, Coimbatore.	1,38,400
28.	Coordinated Project for Research on Chemistry of Submerged Soils under Rice Cultivation in High Rainfall Areas, Aduthurai.	1,20,700

29.	Soil Organic Matter Fraction with Reference to Supply of Nutrients, Coimbatore	43,800
30.	Centre of Advanced Studies in Agricultural Microbiology with FAO/UNDP/ICAR Assistance, Coimbatore.	5,21,100
31.	Scheme for Studies on the Fishery Biology and Culturability of Commercially Important Fresh Water Prawn *Macrobrachium idae*, Tuticorin.	25,500
32.	Krishi Vigyan Kendra, Trichy.	2,44,100
33.	Krishi Vigyan Kendra, Pondicherry.	6,35,300
34.	All India Coordinated Rice Improvement Project, Pondicherry.	1,37,700
35.	Studies on Production and Marketing of Pulses in Tamil Nadu, Coimbatore.	33,600
36.	Emeritus Scientist Scheme on Investigation on the Systematic and Biology of Croconometrics, Coimbatore.	26,200
37.	Establishment of Man Power and Placement Cell, Coimbatore.	73,000
38.	Emeritus Scientist, National Pulses Research Centre, Vamban.	13,100
39.	Development of Hybrid Rice, Coimbatore.	59'400
40.	Scheme on Role of Frogs and Toads in the Biological Control of Insects, Aduthurai.	62,400
41.	Scheme for Methodology of Simultaneous Determination of Factor and Product Prices, Coimbatore.	51,600
42.	Scheme for Conjunctive Use of Ground Water, Coimbatore.	95,400
43.	Viability and Storability of Seeds, Coimbatore.	30,600
44.	Lab-to-Land Programme, Thadiyankudisai.	59,000
45.	Lab-to-Land Programme, Aruppukkottai.	59,000
46.	Biological Fixation of Nitrogen Fertilizers, Coimbatore.	2,01,400
47.	Scheme for Nitrogen Fertilizer Efficiency Under Indo-US Collaboration, Coimbatore.	2,69,300
48.	Scheme for ORP on Integrated Nutrient Energy, Coimbatore	3,28,100
49.	Scheme for Nutritional Grey Mullet, Tuticorin.	38,800
50.	All India Coordinated Project on Long Term Fertilizer, Coimbatore.	3,300

ICAR Schemes - Partly Financed

1.	Integrated Scheme for Water Management and Soil Salinity, Bhavanisagar.	3,34,800
2.	All India Coordinated Agronomic Research Project-Cropping System Research, Coimbatore.	1,85,000
3.	All India Coordinated Agronomic Research-Cropping System Research, Bhavanisagar.	85,700
4.	Integrated Scheme for Water Management and Soil Salinity, Madurai.	2,95,700

5.	All India Coordinated Research Project for the Improvement of Wheat, Coimbatore.	51,900
6.	All India Coordinated Research Project for Dryland Agriculture, Kovilpatti.	4,05,700
7.	All India Coordinated Research Project on Sugarcane, Cuddalore.	62,600
8.	All India Coordinated Agronomic Research Project-Experiment on Cultivators' Field, Villupuram.	1,80,000
9.	All India Coordinated Agronomic Research Project-Experiment on Cultivators' Field, Trichy.	1,61,000
10.	All India Coordinated Agronomic Research Project-Experiment on Cultivators' Field, Salem.	1,76,800
11.	All India Coordinated Agronomic Research Project-Model Agronomic Experiments, Thanjavur.	1,18,900
12.	All India Coordinated Research Project on Oilseeds, Coimbatore.	9,73,600
13.	All India Coordinated Research Project on Oilseeds-Off-season Nursery Project, Aliyarnagar.	2,82,000
14	All India Coordinated Research Project on Oilseeds, Main-centre for Groundnut, Vridhachalam.	3,10,000
15.	All India Coordinated Research Project on Oilseeds, Sub-centre for Castor Research, Tindivanam.	88,400
16.	All India Coordinated Rice Improvement Project, Coimbatore.	3,39,400
17.	All India Coordinated Rice Improvement Project, Aduthurai.	2,95,300
18.	All India Coordinated Rice Improvement Project, Madurai.	26,900
19.	All India Coordinated Research Project for Improvement of Millets, Coimbatore.	2,07,200
20.	All India Coordinated Research Project for Improvement of Sorghum, Coimbatore.	4,06,100
21.	All India Coordinated Research Project on Jute and Allied Fibres, Coimbatore.	48,400
22.	All India Coordinated Cotton Improvement Project, Coimbatore.	3,46,200
23.	All India Coordinated Cotton Improvement Project, Kovilpatti.	1,79,200
24.	All India Coordinated Cotton Improvement Project, Srivilliputhur.	3,16,600
25.	All India Coordinated Research Project for Intensification of Research on the Improvement of Pulses, Coimbatore.	5,35,800
26.	All India Coordinated Research Project for Intensification of Research on the Improvement of Pulses, Vamban.	5,10,000
27.	All India Coordinated Research Project on Soybean, Coimbatore.	59,600
28.	All India Coordinated Research Project on Forage Crops, Coimbatore.	2,63,400
29.	All India Coordinated Research Project on Nematode Pests and Their Control, Coimbatore.	1,37,200

30.	Scheme on Coordinated Research on Biological Nitrogen Fixation, Coimbatore.	1,22,400
31.	All India Coordinated Research Project on Seed Borne Diseases, Coimbatore.	47,300
32.	All India Coordinated Research Project on Tuber Crops (Other Than Potato), Coimbatore.	91,400
33.	All India Coordinated Vegetable Improvement Project (Including Chillies), Coimbatore.	1,61,200
34.	All India Coordinated Vegetable Improvement Project, (Including Chillies), Kovilpatti.	61,600
35.	All India Coordinated Fruit Improvement Project, Coimbatore.	4,36,700
36.	All India Coordinated Improvement Project for Medicinal and Aromatic Plants, Kodaikanal.	1,97,900
37.	All India Coordinated Spices and Cashewnut Improvement Project, Coimbatore.	95,600
38.	All India Coordinated Spices and Cashewnut Improvement Project, Vridhachalam.	1,01,600
39.	All India Coordinated Coconut and Arecanut Improvement Project, Vappankulam.	5,45,200
40.	All India Coordinated Coconut and Arecanut Improvement Project, Coimbatore.	46,900
41.	All India Coordinated Fruit Improvement Project, Periyakulam.	1,91,400
42.	All India Coordinated Floriculture Improvement Project, Coimbatore.	1,43,800
43.	All India Coordinated Fruit Improvement Project, Aruppukottai.	88,700
44.	Scheme for Research on Cardamom, Yercaud.	1,64,600
45.	All India Coordinated Research Programme on Post-harvest Technology in Horticultural Crops, Periyakulam	3,30,800
46.	All India Coordinated Research Project on Under-utilised/ Under-exploited Plants, Mettupalayam	58,900
47.	All India Coordinated Research Project on Agro-Forestry, Mettupalayam.	3,39,300
48.	All India Coordinated Mushroom Improvement Project, Coimbatore.	2,06,600
49.	Scheme for Studies on Harvest and Post-harvest Technology, Coimbatore.	2,50,700
50.	Scheme for Energy Requirements in Intensive Agricultural Production, Coimbatore.	2,03,600
51.	All India Coordinated Scheme for Research and Development of Farm Implements, Machinery and Production of Prototypes and Their Evaluation Under Different Agro-climatic Conditions, Coimbatore.	5,40,300

52.	Scheme for Intensive Testing-Powertiller Research and Development of New Machines to Make Them Versatile, Coimbatore.	1,03,300
53.	Scheme for All India Coordinated Research Project on Renewable Energy Sources for Agriculture and Agro-based Industries, Coimbatore.	3,67,100
54.	Scheme for All India Coordinated Research Project on Long Term Fertilizer Experiments, Coimbatore.	58,200
55.	All India Coordinated Scheme on Micro-nutrients of Soils, Coimbatore.	1,93,600
56.	All India Coordinated Scheme for Studies on Measurement, Evaluation and Improvement of Soil Physical Conditions to Increase Agricultural Production of Problematic Areas, Coimbatore.	1,89,600
57.	All India Coordinated Scheme for Investigation on Correlation of Soil Test with Crop Responses, Coimbatore.	2,35,100
58.	All India Coordinated Research Project on Composite Culture of Indian and Exotic Fishes and Fish Seed Production, Tuticorin.	87,000
59.	All India Coordinated Research Programme on Pesticide Residue, Coimbatore.	5,21,200

Government of India Schemes

1.	Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in Tamil Nadu, Coimbatore.	6,81,800
2.	Scheme for Establishment of Agro-Energy Centre, Coimbatore.	2,91,900
3.	Scheme for Setting up of Regional Centre for Development of Biogas, Coimbatore.	1,53,800
4.	Scheme for Integrated Recycling of Organic Wastes, Coimbatore.	32,400
5.	Paddy Processing Research Centre, Tiruvarur.	6,85,200
6.	Scheme for Development of Sugarcane, Melalathur.	31,300
7.	Scheme for Development of Sugarcane, Sirugamani.	33,500
8.	Scheme for Development of Sugarcane, Cuddalore.	10,000
9.	Scheme for Intensive Cotton Development Programme, Kovilpatti.	65,700
10	Scheme for Intensive Cotton Development Programme, Bhavanisagar.	40,600
11.	Scheme for National Project on Development of Bio-fertilizer-Production and Field Multiplication of Blue-green Algae, Coimbatore.	10,000

12.	Western Ghat Development Scheme for Developing Forage Grasses, Forage Legumes and Forage Trees for Hill Area of Palani Hills of Western Ghat, Thadiyankudisai.	26,600
13.	Western Ghat Development Scheme on Exploitation of Microbial Systems Associated with the Plant Species in the Eco-Development of Western Ghat Region, Thadiyankudisai.	37,600
14.	Western Ghat Development Scheme for Exploitation of Microbial Systems Associated with the Plant Species in the Eco-Development of Western Ghat Region, Sandynallah.	11,600
15.	Western Ghat Development Scheme for Exploitation of Microbial Systems Associated with the Plant Species in the Eco-Development of Western Ghat Region, Mettupalayam.	11,600
16.	Western Ghat Development Scheme for Research on Medicinal Plants and Tropical Pines, Mettupalayam.	18,000
17.	Western Ghat Development Scheme for Research on Medicinal Plants and Tropical Pines, Kodaikanal.	32,000
18.	Western Ghat Development Scheme for Research on Medicinal Plants and Tropical Pines, Sandynallah.	16,000
19.	Western Ghat Development Scheme for Nutrient Potential Studies of Soils of Western Ghat and Environmental Pollution of Soils, Plants and River Water Basins, Kodaikanal.	1,62,000
20.	Western Ghat Development Scheme for Impact of Industrial Pollution on the Ecology of Bhavani River and Environs, Coimbatore.	34,000
21.	Scheme for Tribes and Other Communities of Western Ghats-Their Socio-cultural and Psychological Characteristics, Rehabilitation and Development in Relation to Eco-system, Kodaikanal.	29,000
22.	Western Ghat Development Scheme for Tribes and Other Communities of Western Ghat-Their Socio-cultural and Psychological Characteristics, Rehabilitation and Development in Relation to Eco-system, Sandynallah.	21,500
23.	Western Ghat Development Scheme on Lowering Seed Quality in Forest, Plantation, Forage and Vegetable Crops as Influenced by the Agro-Techniques and Pollutants Affecting the Ecological Balance, Kodaikanal.	53,000
24.	Western Ghat Development Scheme on Lowering Seed Quality in Forest, Plantation, Forage and Vegetable Crops as Influenced by the Agro-Techniques and Pollutants Affecting the Ecological Balance, Mettupalayam.	26,000
25.	Integrated Eco Development Project of Western Ghat, Coimbatore.	10,000
26.	Scheme for Environmental Education in the Western Ghat Region, Coimbatore.	

Other Agencies Schemes

1.	Scheme on Methods for Improving Productivity in the Periyar-Vaigai Irrigation System, Madurai (Ford Foundation)	75,100
2.	Programme for Awarding Fellowship to Women Students to Pursue Post-graduate Studies in Agriculture, Coimbatore (Ford Foundation)	57,800
3.	IFPRI Sponsored Collaborative Research on Growth Linkage Effects of Green Revolution on Regional Income and Employment in Tamil Nadu, Coimbatore (Ford Foundation)	19,500
4.	Scheme for Training women in Enterprise Management to Encourage Their Participation in Rural Development, Coimbatore (Ford Foundation).	1,01,300
5.	Research Project on Fate and Efficiency of Urea Based Fertilizers in India, Coimbatore (PL. 480).	1,10,600
6.	Scheme for Studies on the Influence of Ecological Disturbance on Water Quality and the Impact Along Amaravathi River System, Coimbatore (UNESCO).	33,600
7.	Scheme for Tree Improvent of *Eucalyptus tereticornis* (Mysore Gum), Mettupalayam (PL. 480).	19,300
8.	Water Technology Centre, Coimbatore (SIDA).	33,68,900
9.	Scheme for Soil Conservation Measures for Dryland Based on Soil and Loss Equation, Coimbatore (PL. 480)	67,200
10.	Scheme for Mycorrhizal Association in Tropical Pines Grown in Nilgiris, Sandynallah (IFS, Sweden)	18,500
11.	Scheme for Tree Improvment Programme, Mettupalayam (South India Viscos Limited and Seshasayee Paper Boards Ltd).	1,44,700
12.	Scheme for Studies on Comparative Performance of Ammonium Chloride as a Source of Nitrogen and Its Effect on Soil Fertility, Madurai (Tuticorin Alkali Chemicals and Fertilizers, Madras).	24,900
13.	Scheme for Studies on the Comparative Performance of Ammonium Chloride as a Source of Nitrogen and Its Effect of Soil Fertility, Sirugamani (Tuticorin Alkali Chemicals and Fertilizers Ltd., Madras).	20,500
14.	Scheme for Studies on the Comparative Performance of Ammonium Chloride as a Source of Nitrogen and Its Effect on Soil Fertility, Ambasamudram (Tuticorin Alkali Chemicals Fertilizers Ltd., Madras).	21,000
15.	Scheme for Studies on the Comparative Performance of Ammonium Chloride as a Source of Nitrogen and Its Effect of Soil Fertility, Tirurkuppam (Tuticorin Alkali Chemicals and Fertilizers Ltd., Madras).	18 600

16.	National Scheme on Training of Rural Youth for Self Employment (TRYSEM), Coimbatore. Madurai and Trichy (Director of Agriculture, Madras)	50,02,000
17.	Scheme for Instalment of Nocil Film Technique, Coimbatore (National Organic Chemical Industries, Madras)	
18.	Scheme on Research Work on Preserving Neera, Improving the Flavour and Keeping Quality of Jaggery, Coimbatore (*Khadi and Village Industries Board, Madras*).	44,300
19.	Scheme for Institution of a Chair in Agricultural Marketing Management, Coimbatore (State Agricultural Marketing Board, Madras).	48,800
20.	Training-cum Discussion Seminars under the Training and Visit System, Coimbatore (Director of Agriculture, Madras)	1,00,800
21.	Study into Small Farmers Reach Down in Tamil Nadu Under NABARD (ARDC) Lending, Coimbatore (NABARD)	2,500
22.	Scheme for Strengthening Coffee Teaching and Training to the Under-graduate and Post-graduate Degree Course in Horticulture, Yercaud (Coffee Board, Bangalore).	52,000
23.	Scheme for Research on Medicinal and Aromatic Plants. Yercaud (Cinchona Department)	88,700
24	Scheme for Research on the Control of Cinchona Disease, Sandynallah (State Cinchona Department).	35,500
25.	Project on Changing Structure of Rural Employment and Factor Market in Tamil Nadu, (Ford Foundation) Coimbatore.	1,73,400
26.	Study on the Role of Women in Rural Development, Coimbatore (Ford Foundation).	1,03,200
27.	All India Coordinated Research Project on Weed Control Coimbatore (PL. 480).	1,92,800
28.	Effect of Soil Micro-Organisms, Madurai (Atomic Energy-Vienna).	23,800
29.	Project on Credit for Rural Development in Southern Tamil Nadu, Madurai (NABARD).	50,750
30.	Project on Testing and Fertilide, Coimbatore.	9,000
31.	Scheme on Nutrition Education Project, Trichy. (UNICEF, New Delhi).	5,000
32.	Study of Impact of the Broadcast on Maternal and Child Care Programme, Coimbatore (UNICEF, Madras)	32,000
33.	Coir Pith as Manure in Agricultural Farms, Coimbatore (Coir Research Institute, Kerala).	22,300

APPENDIX - II

LIST OF BOOKS / BOOKLETS PUBLISHED

ENGLISH

1. Behavioural and Physiological Approaches in Management of Pests.
2. Microbial Control and Pest Management.
3. Pesticides and Environment.
4. Irrigation Water Management : The Determinants of Canal Water Distribution in India.
5. Livestock and Poultry Enterprises for Rural Development.
6. Rice Based Cropping system for Cauvery Delta.
7. Integrated Fertilizer Management for Cauvery Delta.
8. Rationalised Fertilizer Prescription for Rice.
9. A Manual on Millet Production Technology.
10. Pest Management practices Adopted by Farmers with particular Reference to Paddy and Cotton.
11. Coffee Orange Pest Control by Monocrotophos Padding.
12. Fluid Electrolyte and Blood Transfusion Therapy.
13. Post-graduate Thesis 1970-84.
14. Krishi Vigyan Kendra (Pondicherry) Decennium Highlights: 1974-1985.

தமிழ்

1. எரால் வளர்ப்பு.
2. பயிர் சாகுபடிக் குறிப்புகள்.
3. தென்னையில் வாழை ஊடுபயிர் சாகுபடி.
4. காப்பி ஆரஞ்சுப் பூச்சிகளைக் கட்டுப்படுத்த மானோகுரோட்டோபாஸ்.
5. முருங்கை.
6. கறவை மாடுகள் பராமரிப்பு.
7. கோழிகளின் நலம் காக்க சில பராமரிப்பு நடைமுறைகள்.
8. உழவர் தினவிழா கையேடு.

APPENDIX - III

List of Research Papers Published

AGRICULTURE

Agricultural Biochemistry

1. Balasaraswathi, R., Bertel Koie and Hans Doll. The concentration and yield of hordein and some lysin-rich proteins as influenced by lys gene of Hiproly barley. *Hereditas*, 100 : 225-231, 1984.

2. Krishnaveni, S., Theymoli Balasubramanian and S. Sadasivam. Sugar distribution in sweet stalk sorghum. *Food Chemistry*, 15 : 229 - 232, 1984.

3. Neelakantan, S., G. Indira Jasmine, R Balasaraswathi and Theymoli Balasubramanian. Incidence of Penicillic acid in apples. *Madras agric. J.*, 71:43-45, 1984.

4. Thayumanavan, B. and S. Sadasivam. Physicochemical basis for the preferential uses of certain rice varieties, Qualities Plantarum. *Plant Food for Human Nutrition*, 34 : 253 - 260. 1984.

5. Theymoli Balasubramanian. Studies on quality and nutritional aspects of tomato. *South Indian Hort.*, 21 : 419 - 421, 1984.

Agricultural Botany

1. Amirthadevarathnam, A. Components of genetic variation among a set of twelve parents in rainfed rice. *Madras agric. J.*, 71 : 357 - 360, 1984.

2. Chandrasekaran, P. and L. Dhamothiran. Leucaena - source of protein, a concentrate and a rich green fodder. *Milcow*, (1) : 17 - 20, 1985

3. Ganesan, K., W. W. Manuel, and C. K. Rajagopal. High Yielding rices, Paiyur 1 and PY 1. *IRRN*, 10 (1) : 4, 1985.

4. Govindarajan, K., C. Nagarajan, T. S. Raveendran, M. N. Prasad and N. Shanmugam. A new source of resistance to pearlmillet rust disease. *Madras agric. J.*, 71 (3) : 210, 1984.

5. Krishnaswami, S., A. Venkata Rao, and R. Appadurai. Resistance to powdery mildew disease in sesame (*Sesamum indicum L.*). *Indian J. agric Sci.*, 54 : 666 - 668, 1984.

6. Manual, W. M., K. Ganesan, C. K. Rajagopal and V. Mariappan. New sources of resistance to major rice diseases. *IRRN*, 10 (1) : 7, 1985.

7. Manual, W. M., K. Ganesan, C. K. Rajagopal and V. Mariappan. Reaction of ASD varieties to various rice diseases, *IRRN*, 10 (1) : 7, 1984.

8. Manual, W. M., K, Ganesan, and C. K. Rajagopal. Two varieties released for the Thambirabarani region. *IRRN*, 9 (4) : 3, 1984.

9. Mohamed Sheriff N. and R. Appadurai. Hand pollination helps better seed yield in sunflower. *DOR Newsletter*, 3 : (1 & 2) : 1984.

10. Mohamed Sheriff, N., R. Appadurai and S. S. Sindagi. Scope of hybrid for boosting sunflower production. *DOR Newsletter*, 3, (1 & 2) : 1984.

11. Mohamed Sheriff, N., R. Appadurai and M. Rangaswamy. Combining ability in sunflower *(Helionthus annus L.)*. *Indian J. agric. Sci.* 55 (5) : 1985.

12. Mohamed Sheriff, N., K. Govindarajan and R. Appadurai. Field resistance to rust in sunflower. *DOR Newsletter*, 4 (1) : 1985.

13. Narayana, D. and M. N. Prasad. Combining ability and gene action for tannin content in sorghum grain. *Madras agric. J.*, 71 : 211 - 213, 1984.

14. Ramanathan, T. Induced mutations for quantitative characters in grountnut *(Arachis hypogaea L)*. *Madras agric. J.*, 70 (6) : 377 - 81, 1983.

15. Ramanathan, T. and M. Rathinam. Induced qualitative mutations in groundnut *(Arachis hypogaea L)*. *Madras agric. J.*. 70 (7) : 427 - 32, 1983.

16. Ramanathan, T. Effect of mutagenic treatments on *Arachis hypogaea L.* M1 (1) generation. *Madras agric. J.*, 71 : 46 - 49, 1984.

17. Ramanathan, T. Induced high yielding mutants in *Arachis hypogaea L. Madras agric. J.*, 71 (2) : 85 - 88, 1984.

18. Raveendran, T. S., C. Nagarajan, R. Appadurai, M. N. Prasad and N. Sundaresan. Radiosensitivity of fingermillet genotypes. *Indian J. agric. Sci.*, 54 (7) : 538 - 40, 1984.

19. Raveendran, T. S., and R. Appadurai. Genetic complementation in fertility restorer genes in pearl millet, *Indian J. agric. Sci.*, 54 (10) : 884 - 87, 1984.

20. Raveendran, T. S. and R. Appadurai. Genetic divergence and heterosis in pearl millet. *Indian J. agric. Sci.*, 54 (10) : 883 - 93, 1984.

21. Shanmugam, A. S., S. R. Sree Rangaswamy, and R. Rathnaswamy. Observation on the interspecific hybrids of *Vigna radiata* (L) Wilezek and Vigna mungo (L.) Hepper. *Gene Agri.*, 38 : 433 - 411, 1984.

22. Shanmugam, A. S., R. Rathnaswamy, and S. R Sree Rangaswamy. Crossability studies between greengram and blackgram. *Curr. Sci.*, 52 (21):1018-1020, 1984.

23. Shanmugam, A. S., S. R. Sree Rangaswamy and R. Rathnaswamy. Correlation and path analysis for nodule characters in blackgram and greengram. *Indian. J. agric. Sci.*, 54 : (9) 712 - 8, 1984.

24. Shanmugam A. S., R. Rathnaswamy, S. R. Sree Rangaswamy and P. S. Srinivasan. Association analysis of source-sink relationship in blackgram varieties of different duration. *Indian J. agric. Sci.*, 54 (12) : 108-84, 1984.

25. Sivaram, M. R., S. R. Sree Rangaswamy and R. Appadurai. Co 2- A new high yielding mutant variety of groundnut. *Mutation Breeding Newsletter* (Vienna). 25 : 5-6, 1985.

26. Sivasubramanian, V. and G. S. Kush. Genetic analysis of resistance to bacterial blight in 27 varieties of rice. *Oryza*, 20 : 151-155, 1984.

27. Soundrapandian, G., V. D. Guruswamy Raja, M. Kadambavanasundaram, and P. Rangasamy. Cold tolerant rice variety MDU. 2. *IRRN*, 9 (4) : 11, 1984.

28. Sree Rangasamy, S. R., P. Chandrasekharan, and M. Paramasivan. Hedge Lucerne (*Desmanthus virgatus*)-Nutritive crop for the milch cattle. *Milcow*, (7) : 1984.

29. Subramanian, M. and V. Jayaraman. Rice varietal reaction to leaf folder (LF) and yellow stem borer, (YSB). *IRRN*, 10 : (2) : 6, 1985.

30. Sukanya Subramanian, K. M. Balasubramanian, T. B. Ranganathan, V. Sivasubramanian and J. Chandramohan. Co. 43 a salt tolerant variety for Tamil Nadu. *IRRN*, 9 (5) : 1, 1984.

31. Sukanya Subramanian and M. Rathinam. Heterosis in Rice. *Madras agric. J*, 71 (6) : 402-405, 1984.

32. Sundaram V. S. and M. Govindaswamy. Studies on the influence of soil and foliar application of urea on fodder yield and its quality. *Madras agric. J.*, 71 (4) : 263-265, 1984.

33. Surendran. C. and P. Chandrasekharan. Heritable variation and genetic gain estimated in half-sib progenies of *Eucalyptus* sm. *J. Tree Sci.*, 3 (1 & 2) : 1-4, 1985.

34. Thandapani, V. and J. Sakharam Rao. Partitioning of nutrient elements and assimilate in relation to productivity of greengram., *Vigna radiata* (L) Wilczek genotypes. *Madras agric. J.*, 321-327, May, 1984.

35. Thandapani, V. and J. Sakharam Rao. Yield parameters and their significance in greengram *Vigna radiata* Wilczek genotypes in relation to yield. *Madras agric. J.*, 232-236, April, 1984.

36. Vivekanandan, P., J. Venkatakrishnan and K. N. Pillai. TKM. 9. *IRRN*, 10 (1) : 5, 1985.

Agricultural Economics

1. Palaniswami, K. and K. William Easter. Irrigation tanks of South India-Management strategies and investment alternatives. *Indian J. of Agricultural Economics*, Vol. 39 (2) : 214-223, 1984.

2. Palaniswami, K. and K. William Easter. Tank irrigation in India and Thailand-Problems and prospects. *(Irrigation Management Net work, Agricultural Administration Unit Bulletin;* ODI, London, November 1984).

3. Palaniswami, K. and S. R. Subramanian. Determinants of farm water supply in Lower Bhavani Project, Coimbatore, South India, *Water Resources J.*, September 1984.

4. Palaniswami, K. and K William Easter. Expost evaluation of flood control investment: A case study in North Dakota. *Water Resources Research*, 20 (12) : 1785-1790, 1984.

5 Rajendran, K., K. R. Swaminathan, V. Murugesan and K. Shanmugam. Economics of bullock energy utilization in farms of Coimbatore district. *Rural Development Review*, 2 (1) : 19-22, 1983.

6. Rajendran, K., K. R. Swaminathan and V. Murugesan. Technical feasibility and economic viability of community biogas plant - An empirical analysis. *Rural Development Review*, 3 (2) : 1985.

7. Subramanian, S. R. and R. Shantha. Success story of women's cooperative. *The Tamil Nadu J. of Co-operation*, 76 (9) : March, 1985.

8. Subramanian, S. R., R. Shantha and V. Jansi Rani. Prohibition and rural life - A micro level study. *Rural Development Review*, 3 (2) : April - June, 1984.

9. Varadarajan, S., K. Ramamoorthy and V. Rajagopalan. Structure, conduct and performance of tomato marketing in Coimbatore. *Indian J. of Marketing*, 19-24, 1985.

10. Varadarajan, S , International trade : Indian experience. *Indian Economic Almanac*, 47-55, October-December, 1985.

11. Varadarajan, S., Sickness of Indian sugar industry-Causes and cure. *International Industries Annual*, 127-131, 1984.

Agricultural Entomology

1. Balasubramanian, G., S. Chelliah and M. Balasubramanian. Effect of host plants on the biology of *Spodoptera litura*. *Indian J. agric. Sci.*, 54 (12) : 1075-1080, 1984.

2. Bhagavandoss, M. A new brown plant hopper (BPH) resistant rice for Pondicherry, India. *IRRN*, '0 (1) : 8. 1985.

3. Chandramohan, N. and S Chelliah. Relationship between biochemical characteristics of rice and establishment of yellow stem borer. *IRRN*, 9 (6) : 7,1984.

4. Chandramohan, N. and S. Chelliah. Parasite complex of yellow stem borer, (YSB). *IRRN*, 9 (6) : 21. 1984.

5. Chandramohan, N. and S. Chelliah. Reaction of yellow stem borer (YSB) resistant accession to other pests. *IRRN*, 9 (6) : 9, 1985.

6. Chelliah. S. and R. Rajendran. Toxicity of insecticides to the predatory mirid bug, *Cyrtorhinus lividipennis* Reuter. *IRRN*, 9 : (4) : 15, 1984.

7. Dhandapani, N. Efficacy of some spray formulations in the control of green peach aphid, *Myzus persicae* Sulz. on chillies. *Indian J. Pl. Prot.* 12 (1) 73-75, 1985.

8 Dhandapani, N., A. Abdul Kareem and S. Jayaraj. Consumption and utilisation of certain cotton and chilli varieties by *Spodoptera litura*. *Curr. Sci.*, 54 : 22-24, 1985.

9. Habeebullah, B., A Regupathy, N. Chandramohan and M. Balasubramanian. Residues of insecticides applied to control betelvine scale (*Lepidosaphes cornutus* Rank. *South Indian Hort.*, 31 (2&3) : 133-35, 1983.

10. Joshi, R. C. and M. S. Venugopal. Morphological comparison of adult rice gall midge *Orseolia oryzae* at different locations in India. *Cecid. International*, 5 (182) : 19-25, 1984.

11. Joshi, R. C. and M. S. Venugopal. Moderately susceptible rice varieties as an index to monitor gall midge populations at different plant age in the field. *Sci & Cult.*, 50 : 229, 1984.

12. Joshi, R. C. and M. S. Venugopal. Varietal reaction to rice gall midge in Tamil Nadu. *IRRN*, 9 (3) : 7, 1984.

13. Joshi, R. C., P. Grover and M. S. Venugopal. The rice gall midge, *Orseolia oryzae*, a brief review. *Cecid. International*, 5 (182) : 9-22, 1984.

14. Joshi, R. C., M. S. Venugopal and T. Hidaka. Some observatisons on platygaster from India. A parasite of rice gall midge, *Orseolia oryzae*. *Cecid. International* 5 (182) : 1984.

15. Karuppuchamy, P. and S. Uthamasamy. Influence of flooding fertiliser and plant spacing on insect pest incidence. *IRRN*, 9 (6) : 17, 1984.

16. Logiswaran, G., S. Gopal and S. Madhava Rao. Studies on the efficacy of insecticide, Isofenphos (Oftanol) in the control of leaf miner infesting groundnut. *Pesticides*, 18 (8) : 42-46, 1984.

17. Mahadevan, N. R. and M. Balasubramanian. Efficacy of certain insecticides against stored grain insect of sorghum. *Pestology*, 8 : 11-17, 1984.

18. Mohan, S. and R. Janarthanan. Influence of light traps on the incidence of yellow stem borer *Scirpophaga incertulas* in the trap zone and field. *IRRN*, 9 (5) : 16-17, 1984.

19. Mohanasundaram, M. New Eriophyid mites from India. (Acarina : Eriophyidea). *Oriental Insects*, 18 : 251-283, 1984.

20. Mohanasundaram, M. Some Tarsonemid mites from Tamil Nadu. *Oriental Insects*, 18 : 79-85, 1984.

21. Naganathan, T. G., A. Regupathy, and D. Kumaresan. Efficacy of certain insecticides in controlling the cardamom stem borer, *Dichocrocis punctiferalis*. *Pesticides*, 17 (6) : 22-23, 1983.

22. Rabindra, R. J., M. Balasubramanian and S. Jayaraj. Effect of *Farinocystis, tribolii* on the respiration of *Tribolium castaneum* larvae. *J. Invertebr. Pathol.*, 45 : 115-116, 1985.

23. Rabindra, R. J., M. Balasubramanian and S. Jayaraj. Effect of heat and gamma irradiation on the infectivity of *Farinocystis tribolii* to *Tribolium castaneum*. *J. Invertebr. Pathol.*, 45, 365, 1985.

24. Ragupathy, A., K. S. Subramanian and T. G. Naganathan. Evaluation of certain aphicides in the containment of banana bunchy top disease. *Pesticides*, 17 (7) : 35-36, 1983.

25. Rajendran, B. and S. Chelliah. Surveillance for pests of rice in Pondicherry region. *Madras agric. J.*, 70 : (1) : 681, 1983

26. Rajukkannu, K., C. S. Balasundaram, C. R. Lakshminarasimhan and K. Saivaraj. Residues of quinalphos, phosalone and malathion in certain higher yielding varieties of rice. *Indian J. Plant Prot.* *11* : 96-97, 1984.

27. Sathiyanandam, V. KR., M. S. Venugopal and A. Abdul Kareem. Controlling army worms with synthetic pyrethroids and conventional insecticides. *IRRN*, (9) (2) : 20, 1984.

28. Sathiyanandam, V. KR. and A. Subramanian. Evaluation of certain candidate insecticides against rice BPH, *Nalaparvata lugens* (S.). *Pesticides*, 13(5): 17-18, 1984.

29. Sellammal Murugesan and S. Chelliah. Insecticidal control of yellow stem borer of rice. *IRRN*, 9 (4) : 15, 1984.

30. Soundararajan, K. Effect of certain pesticides on pollen germination in egg plant and okra. *Pesticides*, 18 (3) : 27, 1984.

31. Soundararajan, K., T. Kumaraswami and A. Abdul Kareem. An easy method for mass multiplication of the entomopathogenic fungus *Cephalosprium lecanii*. *Curr. Sci.*, 53 (21) : 1152-52, 1984.

32. Sundara Babu, P. C., S. Kuppuswamy and P. V. Subba Rao. Control of redgram pod borers with newer insecticides. *Madras agric. J.*, 71 : 242-45, 1984.

33. Venugopal, M. S., R. Joshi and T. Kumaraswami. Reaction of rice varieties to gall midge in Tamil Nadu. *IRRN*, 9 (2) : 7, 1984.

Agricultural Extension & Rural Sociology

1. Balasubramanian, U. S. Performance of FSCS-A case study. *Rural Development Review*, 2 (3) :1993.

2. Subramanyan, V. S. Extent of employment among agriculturists and agricultural labourers in Thanjavur district. *Rural Development Review*, 2 (3) : 1984.

3. Subramanyan, V. S. Communication in tribal development. *Santaroma*, 4 Annual 1984.

Agricultural Microbiology

1. David Ravindran, A. and M. Rangarajan. Nitrogenase activity of free living *Rhizobium* sp as influenced by the intermediates of tricarboxylic acid cycle. (Abstr. of papers presented at *Third International Conference* on *nitrogen fixation with non-legumes* held at Helsinki, Finland during Sept. 2-8, 1984) p. 90.

2. Govindan, M. and D. Purushothaman. Association of Azospirillum in certain plantation crops. *Nati. Sci. Acad. Newsletter*, 8 (6) : 127-130, 1985.

7. Mallika Vanangamudi and N. Natarajaratnam. Seed and seedling physiology in twelve genotypes of bajra. *Madras agric. J.*, 71 (6) : 322-285, 1984.

8. Srinivasan, P. S., R. Chandrababu, N. Natarajaratnam and S. R. Sree Rangaswamy. Leaf photosynthesis and yield potential in greengram (*Vigna radiata L.* Wilzeck) cultivars. *Tropical Agriculture*, 62 (3) : 222-224, 1985.

9. Srinivasan, P. S. and R. Chandrababu. Potassium fertilisation for increasing yield in mung bean. *Farm Bulletin*, IOB, October, 1984.

10. Srinivasan, P. S. and K. Mohan Naidu. Effect of Zn (ppm) on electrical conductivity, endosperm weight, germination and vigour index of three rice cultivars. *IRRN*, 1984.

11. Thangaraj, M. and J. C. O' Toole. Rice root response to water stress in rainfed low land. (IRRI saturday Seminar, March, 1985 - IRRI, Philippines).

Food Science and Nutrition

Neelakandan, S., Theymoli, Balasusbramanian, R. Balasaraswathi and Indira Jasmine. Incidence of penicilic acid in apples. *Madras agric. J.*, 71 : 43-45, 1984.

Nematology

1. Rajeswari, S. Preliminary tests with DD-36 for the control of potato chafer grub, *Anomala sp. Indian J. Nematolagy*, 14 (2) : 187-188, 1984.

2. Subramanian, D., E. I. Jonathan, P. Subramanian, R. Sundaram and B. Velayutham. Incidence of rice root nematode in Madurai, India. *IRRN*, 9 (5) : 20, 1984.

3. Subramanian, S. Plant parasitic nematodes associated with banana in North Arcot district. *South Indian Hort.*, 32 (4) : 252-253, 1984.

4. Sivakumar, M. and T. Marimuthu. Parasitic nematodes associated with betelvine (*Piper betle L.*), *Madras agric. J.*, 71 (2) : 108-110, 1984.

Plant Pathology

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2. Krishnaswami, S., A. Venkata Rao and R. Appadurai. Resistance to powdery mildew disease in sesame. *Indian J. agric. Sci.*, 54 : 666-668, 1984.

3. Lakshmanan, P., V. K. Balakrishnan and T. Manoharan. Occurrence of yellow mosaic virus on Siratro (*Macroptilium atropurpureum*) fodder crop. *Curr. Sci.*, 54 : 196, 1985.

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Director of Seed Certification	:	Thiru M. M. Sankaran (upto 30.6.84) Thiru M. R. Arumugavel (Additional charge upto 31.8.84) Thiru K. Malaiswamy, I. A. S., (Additional charge upto 28.9.84) Thiru S. Vinayagam (from 29.9.84)
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Chief Engineer, River Valley Project	:	Thiru S. Gopalan
Director of Fisheries	:	Thiru. T. Lakshminarayanan, I. A. S. (upto 27.7.84) Thiru T. P. Nagarajan, I. A. S., (from 28.7.84)

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Dr. P. K. Aiyasamy,
Head, Dept. of Agrl. Economics,
Coimbatore.

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Head, Dept. of Crop Physiology,
Coimbatore.

Dr. C. M. Lalitha,
Head, Dept. of Parasitology,
Madras Veterinary College,
Madras.

Dr. M. P. Arumugam,
Special officer, Veterinary College,
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Non-Official Members

Prof. VR. Muthuveerappan,
Head, Dept. of Mechanical Engineering,
Annamalai University,
Annamalai Nagar,

Thiru S. Pandiperumal.
22/A2, Anna Puspha Illam
Fourth Street,
Madurai.

Thiru W. P. A. R. Rajaram,
Planter,
Pattiveeranpatti,
Madurai District.

Dr. S. Rajamani,
AL 97, 11th Main Road,
Anna Nagar,
Madras.

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Pammel House,
29, G. V. D. Layout,
Subramaniapuram,
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Heads of Departments

Dr. V. S. Subramanyan,
Head, Dept. of Agricultural Extension
and Rural Sociology,
TNAU, Coimbatore.

Dr. M. Muthiah,
Head, Dept. of Agricultural Extension
and Rural Sociology,
Agricultural College & Research
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Thiru S. Balasubramanyan,
Secretary,
Small Coffee Planters' Association,
Yercaud.

Special Invitee

Prof. S. V. Pandurangan,
Head, Divison of Extension,
Annamalai University,
Annamalai Nagar.

ERRATA

Page	Para	Line	Read	For
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30	Item 13		1984	984
47	Heading for Tabular Statement		Given below	Given belows
62	Under coconut		Protection	Protectian
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67	9	Heading	Management	Managemet
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Appendix I P.X Item 59			Kattupakkam	Kattapakkam
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