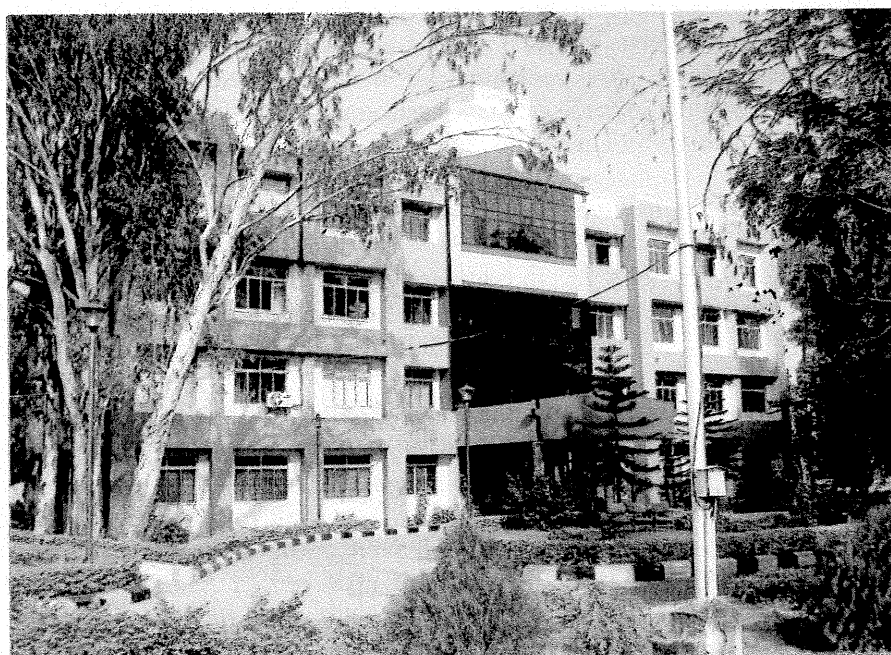


ANNUAL REPORT 2007-2008



**GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & COOPERATION)
DIRECTORATE OF PLANT PROTECTION, QUARANTINE & STORAGE
NATIONAL PLANT PROTECTION TRAINING INSTITUTE
Rajendranagar, Hyderabad -500 030 (A.P).**

P R E F A C E

The National Plant Protection Training Institute, a training Wing of the Directorate of Plant Protection, Quarantine & Storage under the Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India was established in the year 1966 with the main objectives being Human Resource Development in Plant Protection by way of generating trained Master trainers, Subject Matter Specialists in the field of Plant Protection for various State/Union Territories. The institute is engaged in organizing training Programmes of long and short duration on various aspects of plant protection and allied disciplines. The Institute has been recognized by the FAO of United Nations as a Regional Centre of Excellence for training in Plant Protection . The Institute is also recognized as a Center of Excellence for training in Plant Protection Technology under the World Bank aided National Agricultural Extension Project-III. So far, the institute has trained **18,251** participants from various States, Union Territories, Agriculture Universities etc, including 216 Foreign Nationals from 32 countries viz., Afghanistan, Bangladesh, Cyprus, Czechoslovakia, Ethiopia, Ghana, Indonesia, Iran, Iraq, Kenya, Kuwait, Laos, Liberia, Madagascar, Malawi, Malaysia, Mauritius, Myanmar, Nepal, Nigeria, Philippines, Somalia, South Korea, Sri Lanka, Sudan, Syria, Tanzania, Thailand, Uganda, Vietnam, Yemen and Zambia under FAO Programmes, Colombo Plan, SCCAP, and other bilateral agreements with Government of India.

During the year **2007-08** a total number of **36** courses were organized in which **791** participants were trained. Out of the total Programmes conducted **(4)** were of long duration and **(32)** of short duration including **(7)** In- State Training Programmes.

The Additional Plant Protection Adviser and Faculty Members of the Institute also rendered technical expertise in various meetings, workshops on different aspects of Plant Protection organized by the State Department of Agriculture and other Institutions. Some of the faculty members, who are notified by the Government of India as Central Insecticide Inspectors for the purpose of monitoring quality of pesticides in various states, have drawn pesticide samples from time to time. The institute has constantly maintained liaison with the Commissioner and Director of Agriculture, Andhra Pradesh with respect to Plant Protection.

The achievement are largely due to active support and guidance extended by Plant Protection Adviser to the Government of India under the Union Ministry of Agriculture. The successful execution of various Programmes was possible due to devotion and sincere efforts by the staff of the Institute.

(B.G. Naik)
Additional Plant Protection Adviser

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Training Programmes Organized During the year 2007-08

S.No.	Course	Duration		No. of Participants
		From	To	
<u>ON-CAMPUS PROGRAMME</u>				
<u>A. Regular Course</u>				
1.	Post Graduate Diploma Course in Plant Protection	02-07-2007	01-05-2008	10
2.	Pesticide Residue Analysis	02-07-2007	28-09-2007	5
3.	Special Course on Pesticide Formulation Analysis	09.07.2007	08-09.2007	14
4.	Pesticide Formulation Analysis	01-10-2007	31-12-2007	13
<u>B. Short Duration Course</u>				
5.	Analysis of Household Pesticide for PTL Analysis	06-06-2007	26-06-2007	6
6.	Special Programme on Chilies for Spices Board	13-06-2007	14-06-2007	3
7.	Pesticide Application Techniques and maintenance of Plant Protection Equipment	19-06-2007	26-06-2007	10
8.	-do-	03-10-2007	10-10-2007	3
9.	Integrated Pest Management in Rice	07-08-2007	15-08-2007	8
10.	-do-	06-02-2008	13-02-2008	3
11.	Integrated Weed management in Major Field Crops	21-08-2007	27-08-2007	10
12.	Pest Surveillance	05-09-2007	12-09-2007	20
13.	Analysis of Bio-Pesticide for Quality Control	12-09-2007	19-09-2007	15
14.	Rodent Pest Management	20-09-2007	26-09-2007	18
15.	Special Course on IPM in Chilies	20-08-2007	22-08-2007	25
16.	Workshop on Integrated Weed management in Vegetable Crops	14-11-2007	16-11-2007	3
17.	Integrated Pest management in Pulses and Oilseed	19-11-2007	28-11-2007	11
18.	Integrated Pest Management in Vegetable Crops	20-11-2007	27-11-2007	15
19.	Safe and Judicious Use of Pesticides for Food Safety and Quality	05-12-2007	12-12-2007	16
20.	Workshop on Pesticide Application Technology	05-12-2007	07-12-2007	8
21.	Audio-Visual-Aids & Communication Techniques	03-01-2008	09-01-2008	3
22.	IPM in Horticulture Crops	03-01-2008	15-01-2008	11
23.	Refresher Course on Pesticide Analysis for PTL Analysts	07-01-2008	25-01-2008	10
24.	Phytosanitary Treatment (Methyl Bromide/ Aluminium Phosphide Fumigation) for Pest Control Operators (PCOs)	15-01-2008	29-01-2008	20
25.	-do-	04-02-2008	18-02-2008	20
26.	Special Programme on IPM for CIPMC Staff	20-01-2008	05-02-2008	19
27.	Apex Level Training on Rodent Control	11-02-2008	13-02-2008	24
28.	Forced Hot Air Treatment for PCOs	25-02-2008	29-02-2008	20
29.	Workshop on Neem-an-Eco-Friendly Pest Management Tool	05-03-2008	07-03-2008	10

IN- STATE PROGRAMME

1	Sampling of Pesticides for Quality Control for Haryana	24-05-2007 to 25-05-2007	80
2.	Rodent Pest Management for Assam	25-06-2007 to 27-06-2007	30
3.	Sampling of Pesticides for Quality Control for J&K	09-08-2007 to 10-08-2007	11
4.	Orientation Training on Rodent Control for AP	23-08-2007 to 24-08-2007	33
5.	Orientation Training on Plant Protection Equipment and IPM for OU Students of Nizam College of AP	01-11-2007 to 02-11-2007	34
6.	Orientation Training on Rodent Control for East & West Godavari District of AP	04-03-2008 to 05-03-2008	198
7.	Rodent Pest Management for Lakshadweep	12-03-2008 to 13-03-2008	52

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30th Post Graduate Diploma Course in Plant Protection:

This course of the 10 month duration commenced on 2nd July 2007, with a total strength of 12 participants, of which 10 participants were Unemployed Agricultural Graduates from different states viz., Bihar (2) Madhya Pradesh (1) Rajasthan (2) and Uttar Pradesh (5). Two participants were in-service Agriculture officers from Andhra Pradesh. Later two Unemployed trainees one each from Uttar Pradesh and Rajasthan discontinued the course during the first Semester.

The course was conducted in two semesters. The first semester started from 2nd July 2007 to 9th November, 2007. The trainees have undergone field service training in which the trainees undertook Plant Protection operation in farmers' fields at Shankarpally Village of Mominpet Mandal, R.R. District covering all kharif crops. As a part of training curriculum the trainees were taken on study tour from 15.11.2007 to 09.12.2007 of which for first eleven days they visited various institutions of agricultural importance in south India to acquaint them with on going research project and findings in the field of agriculture. Later the participants visited their respective native places/place of duty to collect information on plant protection problems.

During second semester, which commenced from 10th December 2007 to 1st May 2008, the participants were taken to various National and International Institutes located in and around Hyderabad to acquaint them with recent developments in respect of Plant Protection in different crops.

The trainees also presented Term Paper/Plant Protection Research dissertation and seminars which are as follows:

S.No.	Name of the Trainee	State	*Topic (a) / (b)
	Sarvasri		
1.	Abdul Rafi	AP	a) Current options in nematode management b) Impact on IPM through FFS in AP
2.	Amit Kumar Singh	UP	a) Biology, Ecology & management of <i>Cyperus rotundus</i> b) Sunflower necrosis disease and its management.
3.	Aniroodh Kumar Singh	Bihar	a) Yellow stem borer in rice and its management. b) Screening endosulfan residues in brinjal from Hyderabad market.
4.	(Ms) Anuradha Sharma	MP	a) Tikka disease of groundnut and its management b) Screening endosulfan residues in tomato from Hyderabad market.
5.	Bhola Singh	Rajasthan	a) Indoxcarb and its uses b) Botanical pesticides and microbial agents in IPM.

6. Indrapal Singh	UP	a) Neem – bitter jam. b) Evaluation of some promising herbicides in Groundnut.
7. Manoj Kumar Chauhan	UP	a) Nozzles for pesticide application. b) Bio-efficacy of <i>Trichoderma spp.</i> on vegetable diseases.
8. Raghu. P	AP	a) Scenario and management of rice blast disease in AP. b) Study of nematode communities in grape garden of grape research station, ANGRAU, Hyderabad.
9. Sanjeev Kumar	Bihar	a) Role of KVK's in agricultural and rural development. b) Efficacy of non-poisonous sticky trap against rodent pests in India.
10. Sarvesh Kumar Maurya	UP	a) Sampling of pesticides. b) Design and performance of foot operated sprayer.

*** (a) Seminar**

(b) Plant Protection Research

Besides the regular lectures by the faculty members of the institute guest lectures by various experts were also arranged on the topics as under :-

Name & address of Guest Speaker	Topic
1. Dr. M.N. Reddy, Principal (Stat.) NAARM, Rajendra Nagar, Hyderabad.	a. Introduction of Agriculture Statistics. b. Design of experiments.
2. Dr. F.Mallik, Joint Director(PP)-Retd. NPPTI, Hyd.	a. Diseases of Temperate fruits and their management b. Diseases of Tropical fruits and their management. c. Epidemiology of plant disease d. Plant disease forecasting e. Cultural and mechanical control of plant disease. f. Diseases of wheat, oat & barley and their management.
3. Sri. P.T.Setty,Dy.Director(PP)-Retd. NPPTI, Hyderabad.	a. Plant disease surveillance b. Diseases of sorghum, bajra and maize and their management.
4. Dr. S.P. Singh, Principal Scientist, Dte.of Rice Research, Hyderabad.	a. Weed of plantation crops & their management.
5. Shri. S.N. Pathak, Pl. Prot.Officer (Engg) (Retird), NPPTI, Hyderabad.	a. Aerial spraying of pesticide. b. Calibration of pesticide application.

Examination was conducted at the end of each semester and a total 30 credits were completed by each participants. All the 10 participants completed successfully all the 30 credits of the course and were awarded Post Graduate Diploma Course in Plant Protection.

PESTICIDE RESIDUE ANALYSIS COURSE

The 65th batch of Pesticide Residue Analysis was conducted from 2.7.2007 to 28.9.2007. Five officer trainees viz., Andhra Pradesh (2), Arunachal Pradesh (1), Chattisgarh (1) and Maharashtra (1) attended the course. The objective of this course is to generate trained human resources for working in the pesticide residue labs of universities, ICAR Research Institutes, Government Departments etc.

The officer trainees were trained in detection and estimation of pesticide residues in food items, agriculture produce and environment by TLC, HPLC and spectroscopy based on the standard methods specified by BIS, PAM of FDA,(US), FAO, etc. Background theory was also covered in all relevant topics. The topics covered includes pesticide residue analysis techniques, in addition to providing information on pesticide chemistry, toxicity, safe handling etc. This was followed by practical exercises wherein officer trainees analyzed the market samples as well as the samples drawn from the field. The practical covered screening of samples of cereal products, pulses, vegetables, fruits, egg, meat, soil, water etc. for qualitative identification as well as quantification of residues of various pesticides. Interpretation of results was also taught. Major emphasis was given on application of thin layer chromatographic techniques for residue analysis. However, methods adopted by Bureau of Indian Standards, if available were also used.

The officer trainees visited R & D Labs of University, State Governments engaged in pesticide residue analysis. As a part fulfillment of training, each participants presented seminar on chosen topic. Seminar were presented by the participants on topics given below :

Name of the officer Trainee	Seminar Topic
1. B.Sai Srinivas	Detectors used in GLC for Pesticide Residue Analysis.
2. K.Sudhakar Babu	Sampling methods of agricultural & food commodities for PRA.
3. Smt.Promila Megu	Safety in Pesticide Testing Laboratory.
4. K.C.Sahu	Thin layer chromatography
5. Dr.Neetin Ramdas Patange	Paper chromatography.

The trainees proceeded on Study Tour to Chennai, Bangalore, Mysore, Pune and Rahuri from 16th to 26th September, 2007, led by Mr.V.D.Gaikwad, Assistant Director (Chem.) to acquaint them with the latest developments in Pesticide Residues Analysis Method. Both theory and practical tests were conducted to grade the performance of officer trainees.

PESTICIDE FORMULATION ANALYSIS COURSE

The objective of this course is to generate trained human resources for working in State Pesticide Testing Laboratories of state Governments in compliance to Insecticide Act 1968; Rule 21 (B). The participants, nominated by various State Governments were trained in using legally valid analytical method approved by the registration Committee for analysis of commonly used pesticide formulation. These methods are volumetric, chromatographic and spectroscopic techniques. Background theoretical lectures on all related topics were also delivered. This was followed by laboratory practical, wherein the officer-trainees analysed samples of commonly used pesticides, using legally approved methods under the supervision of officers of the division.

The officer-trainees also undertook study tour led by Mr.V.D.Gaikwad, Assistant Director(Chem.) to South India viz. Chennai, Bangalore, Mysore, Pune and Rauri from 16th to 26th September, 2007. They also chose a topic for their seminar, collected and collated literature/ information and presented a seminar at the end of the course. Both theory as well as practical exams was conducted to grade the performance of officer-trainees.

The 100th batch of Pesticide Formulation Analysis was held from 09.07.2007 to 08.10.2007. A special course was conducted only for Andhra Pradesh on the request of Director & Commissioner of Agriculture, Andhra Pradesh. A total of 14 officers attended from various districts of Andhra Pradesh.

Name of the officer trainee	Seminar Topic
S/Sri	
1. K.Sreenath Reddy	Safe disposal of date expired pesticides
2. Ch.Sunil Kumar	Redox titrations
3. Mrs.J.N.M.Punyavathi	Powers and duties of Insecticide Act Inspector
4. Mrs.G.Vidyavathi	Safe use and handling of pesticides
5. G.Manohar Reddy	Pesticide Sampling (IA)
6. N.Salu Reddy	Gas chromatography detectors (formulation)
7. M.I.D.Aseervadam	Labeling and packing of pesticides (requirements for packing of solid and liquid pesticides)
8. Mrs.P.G.Sreevani	Non-aqueous titrations
9. Mrs.B.V.Siva Kumari	Stationary phases in GLC columns
10. A.Linga Reddy	pH & pH bas3ed indicator for volumetric analysis
11. R.T.Prasad	Complex metric titrations
12. Mrs.P.Sree Vani	Detectors used in HPLC
13. K.Janardhan Reddy	Environmental pollutions by pesticides

The 101st batch of Pesticide Formulation Analysis was held from 01.10.2007 to 31.12.2007. 14 Officers joined the course from Andhra Pradesh (3), Arunachal Pradesh (2), Bihar (5), Chattisgarh (1), Himachal Pradesh (2) and Uttar Pradesh (1). Out of 14 trainees one officer trainee from Bihar discontinued due to his selection in the University as Asst.Professor. The participants presented seminar on the following topics.

The officer-trainees undertook Study Tour led by Mr.Dilip S.Kapgate, SSA-II to South India viz. Bangalore, Mysore, Trivandrum, Coimbatore, Madurai and Chennai from 9th to 20th December, 2007. They chose a topic for their seminar, collected and collated literature/information and presented a seminar at the end of the course. Both theory as well as practical exams were conducted to grade performance of officer-trainees.

Name of the officer trainee		Seminar Topic
	S/Sri	
1.	M.V.Sesha Reddy	Safe disposal of date expired pesticides
2.	B.Sai Srinivas	Detectors used in HPLC
3.	Smt.K.Sree Devi	Hazards in PTL and safety measures
4.	Idar Nyori	Powers and duties of Insecticide Analyst
5.	T. Darang	Neem based pesticides
6.	Shyam Bihari Singh	Thin Layer Chromatography
7.	Brajesh Kumar	EDTA Titrations
8.	Braj Kishore	Setting up of Pesticide Testing Laboratory
9.	Rajiv Kumar	Role of Insecticide Analyst in Quality Control of Pesticides
10.	K.C.Sahu	Insecticide Act. 1968-Rule, 71; Salient features of the Rules
11.	Ritesh Kumar Gupta	Toxicity – Symptoms of poisoning and its antidotes
12.	Munish Sood	Safety in Pesticide Testing Laboratory
13.	Brijesh Kumar Sharma	Environmental pollution by pesticides

NATIONAL PLANT PROTECTION TRAINING INSTITUTE, HYDERABAD
OFFICERS TRAINED FROM DIFFERENT STATES DURING THE YEAR 2007-08

Name of the State	No. of Participants
Andhra Pradesh	318
Arunachal Pradesh	3
Assam	33
Bihar	6
Chattisgarh	14
Delhi	17
Goa	1
Gujarat	9
Haryana	90
Himachal Pradesh	3
Jammu & Kashmir	12
Jharkhand	4
Karnataka	17
Kerala	6
Maharashtra	39
Madhya Pradesh	5
Manipur	4
Meghalaya	1
Orissa	15
Punjab	13
Rajasthan	5
Sikkim	2
Tamilnadu	26
Tripura	2
Uttarakhand	6
Uttar Pradesh	11
West Bengal	1
Union Territories	55
Central Organisation	34
Agril. Universities	8
Dte. of P.P.Q&S	26
Other Organisation	5
TOTAL	791

SHORT DURATION COURSES

1. Analysis of Household Pesticide for PTL Analysis.(06-06-2006 to 27-06-2007)

A total of 6 Officers representing Jharkand (1), Kerala (3), Tamil Nadu (1) & Union Territory (1) have participated in this course.

2. Special Training Programme on Chillies for Spices Board (13.6.2007 to 14.6.2007)

A total of 3 Officers representing Central Organizations (3) have participated in this course.

3. Pesticide Application Techniques and Maintenance of Plant Protection Equipment. Two courses were conducted during the year.

i. (19-06-2007 to 26-06-2007)

A total of 10 Officers representing Andhra Pradesh (2), Chattisgarh (1), Haryana(1), Karnataka (4), Kerala (1), & Tamil Nadu (1), have participated in this course.

ii. (03-10-2007 to 10-10-2007)

A total of 3 Officers representing Madhya Pradesh (1) and Punjab (2) have participated in this course.

4. Integrated Pest management in Rice. Two courses were conducted during the year.

i. (07-08-2007 to 14-08-2007)

A total of 8 Officers representing Haryana (2), Maharashtra (1), Rajasthan (2), Tripura (2), and Uttar Pradesh (1) have participated in this course.

ii. (20-02-2008 to 05-03-2008)

A total of 3 Officers representing Andhra Pradesh (1), Maharashtra (1) and Orissa (1) have participated in this course.

5. Integrated Weed Management in Major Field Corps (21-08-2007 to 27-08-2007)

A total of 10 Officers representing Andhra Pradesh (2), Haryana (1), Maharastra (2), Orissa (1), Punjab (2) and Tamil Nadu (2) have participated in this course.

6. Pest Surveillance (05-09-2007 to 12-09-2007)

A total of 20 Officers representing Andhra Pradesh (5), Chattisgarh (1), Haryana (1), Maharastra (2), Mahdya Pradesh (1), Orissa (1), Tamil nadu (2), Uttaranchal (1),Uttar Pradesh (1), Union Territory (1) and Central Organisation (4) have participated in this course.

7. Analysis of Bio- Pesticide for Quality Control (12-09-2007 to 19-09-2007)

A total of 15 Officers representing Haryana (1), Jharkhand(2), Karnataka (2), Tamil Nadu (1) , Uttar Pradesh (1), Central Organization (1) & Agricultural Universities (7) have participated in this course.

8. Rodent Pest Management (20-09-2007 to 26-09-2007)

A total of 18 Officers representing Andhra Pradesh (4), Chhattisgarh (1), Gujarat (2), Haryana (1), Kerala (1), Orissa (1), Tamil Nadu (2), and Agriculture University (6) have participated in this course.

9. Workshop on Integrated Weed Management in Vegetable Crops (14-11-2007 to 16.11.2007)

A total of 3 Officer representing Maharashtra (2) and Orissa (1) have participated in this course.

10. Integrated Pest Management in Pulses & Oilseeds (19-11-2007 to 28-11-2007)

A total of 11 Officers representing Delhi (3), Haryana (1), Madhya Pradesh (1), Nagaland (2), Rajasthan (1), Tamil Nadu (2), & Uttar Pradesh (1) have participated in this course.

11. Integrated Pest Management in Vegetable Crops (20.11.2007 to 27.11.2007)

A total of 15 Officers representing Assam (3), Chhattisgarh (3), Delhi (4), Kerala (2), Maharashtra (2) and Orissa (1) have participated in this course.

12. Workshop on Pesticide Application Technology (05-12-2007 to 07-12-2007)

A total of 8 Officers representing Haryana (1), Jammu & Kashmir (1), Orissa (2), Punjab (2), & Tamil Nadu (2) have participated in this course.

13. Safe and Judicious Use of Pesticide (05-12-2007 to 12-12-2007)

A total of 16 Officers representing Andhra Pradesh (2), Karnataka (2), Maharashtra (2), Manipur (2), Meghalaya (1), Rajasthan (4), Sikkim (2), & Tamil Nadu (2) have participated in this course.

14. Audio-Visual-Aids & Communication Techniques (03-01-2008 to 09-01-2008)

A total of 3 Officers representing Andhra Pradesh (1), Orissa (1), & Uttar Pradesh (1) have participated in this course.

15. Integrated Pest Management in Horticulture Crops (03.01.2008 to 15.01.2008)

A total of 11 Officers representing Andhra Pradesh (2), Chhattisgarh (2), Karnataka (2), Maharashtra (2), Orissa (1), Uttar Pradesh (1) and West Bengal (1) have participated in this course.

16. Refresher Course on Pesticide Analysis for PTL Analysts (07-01-2008 to 25-01-2008)

A total of 10 Officers representing Chhattisgarh (1), Karnataka (4), Punjab (2), Orissa (2) and Rajasthan (1) have participated in this course.

17. Phytosanitary Treatment on (Methyl Bromide/Aluminium Phosphide Fumigation) for Pest Control Operators (PCOs). Two courses were conducted during the year.

i. 15.01.2008 to 29.01.2008

A total of 20 Officers representing Andhra Pradesh (3), Delhi (4), Kerala (1), Maharashtra (9), Tamil Nadu (3) & Uttaranchal (10) have participated in this course.

ii. 04.02.2008 to 18.02.2008

A total of 20 Officers representing Andhra Pradesh (3), Delhi (2), Goa (1), Gujarat (1), Maharashtra (10), Tamil Nadu (2) & West Bengal (1) have participated in this course.

18. Apex Level training on Rodent Control (11-02-2008 to 13-02-2008)

A total of 24 Officers representing Andhra Pradesh (5), Gujarat (6), Orissa (1), Tamil Nadu (3), Central Organization (2), Agriculture University (2) & Other Organizations (5) have participated in this course.

19. Special Programme for IPM for CIPMC Staff (20.02.2008 to 05.03.2008)

A total of 19 officials of CIPMC, Directorate of Plant Protection, Quarantine & Storage have participated in this course.

20. Forced Hot Air Treatment for PCOs (25.02.2008 to 29.02.2008)

A total of 20 Officers representing Chhattisgarh (2), Delhi (2), Goa (1), Gujarat (1), Haryana (1), Jharkhand (1), Karnataka (1), Kerala (1), Maharashtra (3), Tamil Nadu (5) and Uttar Pradesh (2) have participated in this course.

21. Workshop on Neem-an-Eco-Friendly Pest Management Tool (05-03-2008 to 07-03-2008)

A total of 10 Officers representing Chhattisgarh (1), Haryana (1), Maharashtra (2), Madhya Pradesh (1), Manipur (2), Orissa (2) & Uttar Pradesh (1) have participated in this course.

IN STATE PROGRAMME

1. Sampling of Pesticides for Quality Control for **Haryana State Government employees (24th to 25th May, 2007)**. A total of 80 Officers participated in this course.
2. Rodent Pest Management for **Assam State (25th to 27th June, 2007)**. A total of 30 Officer participated in this course.
3. Sampling of Pesticides for Quality Control for **Jammu & Kashmir Government employees (9th and 10th August, 2007)**. A total of 11 Officers participated in this course.
4. Orientation Training on Rodent Control for **Andhra Pradesh (23rd and 24th August, 2007)**. A total of 33 Officers participated in this course.
5. Orientation Training on Plant Protection Equipment and IPM for Students of Nizam College, Osmania University, **Andhra Pradesh (1st and 2nd November, 2007)**. A total of 34 participants attended the course.
6. Orientation Training on Rodent Control for East & West Godavari for **Andhra Pradesh (2nd to 5th January, 2008)**. A total of 198 Officers participated in this course.
7. Rodent Pest Management for **Lakshadweep (12th and 13th March, 2008)**. A total of 52 Officers participated in this course.

PLANT PROTECTION RESEARCH

ENGINEERING DIVISION

1. Design and performance of foot operated sprayer.

Horticultural crops, especially perennial fruits and plantation crops include very tall species of plants where implementation of plant protection measures is very difficult and hence substantial pest damage occur. Suitable plant protection technique and selection of appropriate plant protection equipments are very much necessary for proper and effective management of pest, particularly in Andaman and Nicobar Islands, where 60-70% cultivable land is occupied with tall crop species such as coconut, areca nut, oil palm, rubber, spices and fruit crops like mango, guava, sapota, citrus etc.

Most of the farmers have small and marginal land holding. That is why they prefer affordable sprayers, which can be suitable for tall nature of the crops. Against this background foot operated sprayers is one of the most suitable equipment due to their versatility in spray patterns and costs.

The plant protection research study entitled "Design and performance of Foot Operated Sprayer" was conducted with the following objectives:

1. To study the design of foot operated sprayer.
2. To conduct trials for study of performance of foot operated sprayer.

The trials were carried out at NPPTI Engineering Workshop and the design of foot operated sprayer and its performance were studied at working pressure 5.333 kg/cm².

Table -4: Summary of results

The design features were studied for its dimensions after dismantling the machine. The foot operated sprayer was later assembled and tested as per BIS specification.

<u>S.No.</u>	<u>Particulars</u>	<u>Foot operated sprayer</u>
1.	Mechanical efficiency	2.698
2.	Volumetric efficiency	87.061%
3.	Discharge rate @ 5.333 kg/cm ²	
	i) Fine hollow cone	1.383 lit.
	ii) Medium hollow cone	2.350 lit.
	iii) Course jet	3.316 lit.
4.	Actual volume of discharge	113.33 ml.
5.	Max. Height of spray reaches @5.333 kg/cm ²	20.483 feet.

From the above it was observed that the performance of foot operated sprayer meets the requirements of BIS Specifications.

It is recommended that all the equipment companies must manufacture their products conforming to its BIS Standards to get maximum efficiency of performance for the paid value of plant protection equipment and ensure safe and proper pest management.

(Sarvesh Kumar Maurya & Er.Shankar,E.)

EXTENSION DIVISION

2. A study on impact of IPM training through FFS in Andhra Pradesh.

The Farmer Field School (FFS) is basically a community based hands on particularly field oriented study programme. The main objective of FFS is to train the farmers in their own field in observation, scanning and identification of insect pests and diseases and adoption of all (IPM) integrated pest management techniques. IPM training is conducted through farmers field school (FFS) in paddy growing area of Andhra Pradesh, since there is greater scope. The acceptance or rejection of particular technology by the farmers depends upon the farmers' knowledge, attitude towards technology and accessibility to the technical inputs and services for adoption of technology. Keeping the above background in view accumulated felt need at grass root level, the present study was formulated with following objectives.

1. To know the level of knowledge of FFS and non-FFS farmers about IPM practices.
2. To know the extent of adoption of IPM practices.
3. To study impact of FFS on pesticide spray, yield and cost benefit ratio.

Expost-facto research design was adopted for the study. Six FFS villages organized by CIPMC, Hyderabad were selected and three villages as non-FFS villages on randomly. Suitable statistical tools were used for study.

The results reveal that 70% FFS respondent had medium knowledge where as only 33.33% of non-FFS farmers had medium knowledge. 60% non-FFS farmers had low knowledge where as 16.66% FFS farmers had high knowledge of IPM practices.

The 73.33% of FFS respondents had medium adoption whereas 53.33% non FFS respondent had medium adoption. Again 16.66% FFS respondents had high adoption whereas only 6.55% of non FFS farmers had high adoption.

The FFS trained farmers have incurred less expenditure i.e. Rs.346=00 on pesticide spray compared to Rs.1095=00 by counterpart.

Non IPM respondents got 22.5 quintal/acre yield whereas IPM respondent got 26.25 quintal/acre yield.

In respect of C:B ratio, IPM farmers obtained 1:2.38 whereas 1:1.77 in case of non IPM farmers.

Thus there is good impact of IPM training through FFS in Andhra Pradesh.

(Abdul Rafi & D.P.Nagdeve)

PESTICIDE CHEMISTRY DIVISION

3. Screening of Endosulfan Residue in Tomato from Hyderabad Markets:

Tomato samples were collected from different markets of Hyderabad and were analyzed for Endosulfan Residues. The quantity of Endosulfan in 3 samples found nil and 7 samples have been found below the tolerance limit i.e. 2 ppm, prescribed by Government of India under the Prevention of Food & Adulteration (PFA) Act. 1954 (Amended in 1986).

(Anuradha Sharma & K.C. Jhelum)

4. Screening of Endosulfan Residue in Brinjal from Hyderabad Markets:

Ten Brinjal samples were collected from different markets of Hyderabad and analyzed for Endosulfan Residues. Out of ten samples; three samples were found nil residues and 7 samples below the tolerance limit i.e. 2 ppm, prescribed by Government of India under the Prevention of Food Adulteration (PFA) Act. 1954 (Amended in 1986)

(Aniroodh Kumar Singh & K.C.Jhelum)

ENTOMOLOGY DIVISION

5. Study on nematode communities associated with grape cultivars.

The findings of the investigation undertaken on the study on nematode communities associated with grape cultivars revealed that nematodes fall under three trophic groups namely plant parasites, bacterial feeders and omnivores. The plant parasitic nematodes recorded were *Helicotylenchus* sp, *Rotylenchulus reniformis*, *Pratylenchus* sp, *Meloidogyne* sp, *Xiphinema americanum*, *Hoplolaimus* and *criconematids*. Rhabditids and Cephalobids were the bacterial feeders and the Dorylamids belonged to omnivorous group. Samples were taken from rhizosphere of 51 grape cultivars. *Helicotylenchus* sp and *Rotylenchulus reniformis* were the major plant parasites in block 1,3 and 4.

Rotylenchulus reniformis was found to be prominent in block No:1 where as *Xiphinema americanum* was the least prominent. Highest frequency was recorded by *Helicotylenchus* sp and Rhabditids in this block. *Xiphinema americanum* was least frequent. Most prominent nematode in block 2 was Rhabditids and least was *Meloidogyne* sp. Highest frequency was recorded by Dorylamids and Rhabditids in this block where as, *Meloidogyne* sp was least frequent. Abundance of plant parasitic nematodes was highest in block No 1. Rhabditids and Dorylamids recorded highest abundance in block No.3 and least in block no 2. Percentage abundance of Dorylamids was least in all the blocks. Block 1 and 4 were found to be most similar where as block 1 and 2 were found to be least similar. Maturity index was highest in block No2. and least in block No.4. Highest plant parasitic index was found in Block no 3. and least in block no.4. Low Population of Omnivores and high population of plant parasites were recorded in all the blocks in the present study. It is to be noted that most of Dorylamids acts as predators to plant parasitic nematodes.

(Raghupathi, P. & Dr.R.Narayana)

WEED SCIENCE DIVISION

Loi em noi cho tinh chung ta, nhu doan cuoi trong cuon phim buon. Ngoai da den nhu la giac mo roi ra di cho anh bat ngo... <http://www.freewebtown.com/nhatquanglan/index.html>

7. Evaluation of some promising herbicides in Groundnut (*Arachis hypogea* L.)

A field experiment was conducted at NPPTI experimental farm, Hyderabad during Rabi season of 2007-08 to compare the bio-efficacy of some promising herbicides and workout the economics of various weed control methods. The five herbicides viz; Pendimethalin @ 1.0 kg a.i./ha., Alachlor @ 1.0 kg a.i./ha, Fluchloralin @ 1.0 kg ai/ha, Oxyflourfen @ 0.15 kg ai/ha and Quizalofop-ethyl @ 1.0 kg ai/ha were evaluated alongwith two hand-weeding (30 & 45 DAS) and un-weeded check. The crop was mainly infested by weeds like; *Cyperus rotundus*, *Digitaria sanguinalis*, *Trichodesma India*, *Parthenium hysterophorus*, *Dactyloctenium aegyptium*, *Phyllanthus niruri*, *Cleome viscosa*, *Euphorbia hirta*, *Ageratum conyzoides*, *Tridas procumbens*, *Celosia argentea*, *Borreria hispida*, *Commelina benghalensis* and *Leucus aspera*. All the methods of weed control reduced the total weed population and dry weight of weeds substantially over un-weeded check. Excellent control of weeds were observed with Pendimethalin @ 1.0 kg ai/ha followed by two hand-weeding (30 & 45 days after sowing). The other herbicidal treatments viz: Alachlor @ 1.0 kg ai/ha Fluchloralin @ 1.0 kg ai/ha, Oxyflourfen @ 0.15 kg ai/ha and Quizalofop-ethyl @ 1.0 kg ai/ha were also effective in suppressing the weed population and reducing the weed dry matter over un-weeded check but were inferior to Pendimethalin @ 1.0 kg ai/ha and two hand-weeding. The highest dry pod yield of groundnut i.e. 2058 kg/ha was recorded in Pendimethalin treated plot which was closely followed by two hand-weeding (30 & 45 DAS) i.e. 2037 kg/ha and Oxyflourfen (2012 kg/ha). The un-weeded check treatment recorded highest level of weed population (254/m²) and higher weed dry matter (290.50 g/m²) and lowest groundnut pod yield (1022 kg/ha) as compared to other treatments.

(Indrapal Singh & Dr.Bhaskar Tripathi)

TERM PAPER

Botanical pesticides and Microbial agents in Integrated Pest Management.

(Bhola Singh & Dr.J.P.Singh)

Bio-efficacy of Trichoderma spp. against vegetable diseases.

(Manoj Kumar Chauhan and Dr.A.Chaudhuri)

Sunflower necrosis disease and its management.

(Amit Kumar Singh & D.Chattopadhyay)

FARM ACTIVITIES

During the year 2007-08, two (2) Plant Protection Research field Trials (one from Weed Science Division in Groundnut and one from Chemistry Division in tomato) for the trainees of Post Graduate Diploma Course were successfully carried out at the institute farm. In addition to this several demonstration trials for short and long term training programmes, were also carried-out on crops like rice, maize, groundnut, bajra, jowar, pigeon pea, castor, sunflower, green gram and tomato. These crops were also utilized by Plant Pathology Division, Entomology Division, Chemistry Division and Weed Science Division for conducting practical classes for various training courses and for collections of weed, disease and insect specimens by the trainees. Sunhemp and green gram were also grown in the field for improvement of soil structure, texture and fertility.

All the field staff of the Division were actively involved in various field operations starting from land preparation, field layouts to till harvesting of the crops. Farm staffs were also given responsibility of maintenance of garden, orchard, collections, preservation of weed specimens and weed seeds. Besides these staff were also actively and regularly involved in maintaining of campus neat and clean.

Ornamental saplings were planted during the visit of dignitaries like Secretary, Additional Secretary, Joint Secretary, Plant Protection Adviser to the Government of India.

OTHER ACTIVITIES

Department of Agriculture and Cooperation constituted task force to strengthen NPPTI. Dr.B.G.Naik, APPA (i/c) and Dr.A.M.K.Mohana Rao, Rodent Specialist were two of the task force members. They attended series of meetings at New Delhi regularly. Besides, as a part of the task force functioning, this Institute organized several workshops in its campus involving scientists from ICAR, State Agricultural Universities, Senior officials from various States and faculty members participated in the workshops. The details of workshop organized are given below:

1. Workshop on curriculum development on IPM courses and review of IPM Dissemination material (17th and 18th August, 2007).
2. Workshop on curriculum development for specialized courses (17th-18th August, 2007)
3. Workshop on fine tuning of curriculum for IPM (29th and 31st October, 2007).
4. Workshop on curriculum development for pesticide chemistry courses (3rd and 4th Dec. 2007).
5. Workshop-cum-Annual meeting of CIPMC & PQSs (10th and 11th Jan. 2008)
6. Workshop for designated inspection agencies (DIA) and phytosanitary certificate issuing authorities (24th & 25th Jan. 2008).
7. National Workshop for Stake Holders on sustainable bio-control programmes in India (29th and 30th Jan. 2008).

MEETING / SEMINARS ATTENDED

I. Coordination and Participation in Major Meetings (by Rodent Specialist)

Nominated as Member for Task Force on Pest Surveillance nominated by the Government of Andhra Pradesh state and participated in various meetings on Hand Held Device developed by FAO on UN.

II. Expertise extended (by Rodent Specialist)

- a. One of the Members of Inter Ministerial Central Team on Crop Losses constituted by Ministry of Agriculture for Mizoram State.
- b. Expert Visit was made to Mizoram on 16-17 September, 2007 to assess the rodent situation in context with gregarious bamboo flowering and suggest suitable remedial measures.
- c. Expert visit was made to Kerala on 8-10 March, 2008 to study the rodent incidence in coconut.

III. Meetings attended (by Rodent Specialist)

- a. Participated in the Zonal Conference on Rabi inputs for NE states at Aizwal on 18th September, 2007.
- b. Participated in the Zonal conference on Kharif inputs for NE states at Guwahati on 18th February, 2008.
- c. Participated in the 6th Central Monitoring Committee meeting of Ministry of Environment and Forests, as a member, on 24th May, 2007 at Paryavaran Bhavan New Delhi.
- d. Participated in the 8th Central Monitoring Committee meeting of Ministry of Environment and Forests, as a Member, on 15th February, 2008 at New Delhi.

LIBRARY & DOCUMENTATION

This institute Library has good collection of books and journals which are being referred to by all faculty members, officers, trainees, faculty of neighboring institutes and Acharya N.G.Ranga Agricultural University, Post Graduate Students.

This library has purchased 679 books on Plant Protection and allied subjects during the year 2007-08. Now the library has 6969 books. Besides this nearly 100 free publications from different institutions (including books, bulletin, reports etc.) were added to the above collection.

This institute subscribed to 40 Indian Journals and 10 Foreign Journals during the year 2007-08. Further, for the general interest of the Readers, India Today (English), India Today (Hindi), Sports Star, Outlook, Competition Success and Employment News were subscribed.

The list of Indian Journals subscribed during the year 2007-08 are given below :

1. Agriculture Situation in India
2. Andhra Agriculture Journal
3. Agriculture Science Digest
4. Current Science
5. Entomon
6. Farmer Journal
7. Farmer and Parliament
8. Indian Coconut Journal
9. Indian Farmers Digest
10. Indian Farming
11. Indian Phytopathology
12. Indian Journal of Agriculture Science
13. Indian Journal of Agriculture
14. Indian Journal of Entomology
15. Indian Journal of Extension Education
16. Indian Journal of Mycology and Plant Pathology
17. Indian Journal of Plant Pathology
18. Indian Journal of Nematology
19. Indian Journal of Weed Science
20. Indian Journal of Agriculture Research
21. Indian Journal of Plant Protection
22. Intensive Agriculture
23. Journal of Coffee Research
24. Journal of Entomological Research
25. Journal of Indian Potato Association
26. Journal of Oilseeds Research
27. Journal of Research (PAU)
28. Journal of Plantation Crops
29. Journal of Biological Research
30. Madras Agriculture Journal
31. Oryza
32. Pestology
33. Pesticide Information
34. Pesticide Research Journal

35. Progressive Farming
36. Plant Disease Research
37. Science and Culture
38. South Indian Horticulture
39. Science Reporter
40. Yojana

List of Foreign Journal Subscribed during the year 2007-08

1. Weed Abstracts
2. Review of Agricultural Entomology
3. Review of Plant Pathology
4. Journal of AOAC
5. International Journal of Pest Control
6. Weed Science
7. Weed Technology
8. AMA – Agricultural Mechanism in Asia
9. International Journal of Pest Management
10. Plant Diseases.

STAFF

Additional Plant Protection Adviser	-	Vacant I/C Dr. B.G. Naik
Entomology Division		
Joint Director (Ent.)	-	Dr. B.G. Naik
Deputy Director (Ent.)	-	Dr. J.P. Singh
Assistant Director (Ent.)	-	Sri. P.J. Nikhare
Rodent Specialist	-	Dr. A.M.K. Mohan Rao
Assistant Nematologist	-	Dr. R. Narayana
Sr. Scientific Assistant – III	-	Dr. V. Markandeya
Stenographer Grade – III	-	Smt. L. Radhamani Amma
Laboratory Attendant	-	Sri. S. Seshubabu
Plant Pathology Division		
Joint Director (PP)	-	Vacant
Deputy Director (PP)	-	Sri Ashim Choudhury
Deputy Director (PP)	-	Vacant
Assistant Director (PP)	-	Vacant
Plant Protection Officer (Ent.)	-	Sri. D. Chattopadhyay
Laboratory Attendant	-	Sri. Moch Ibrahim
Pesticide Chemistry Division		
Joint Director (Chem.)	-	Vacant
Deputy Director (Chem.)	-	Sri. K.C. Jhelum
Assistant Director (Chem.) (2)	-	Sri. B.N. Jha
	-	Sri. V.D. Gaikwad
Plant Protection Officer (Chem.)	-	Vacant
Senior Scientific Assistants – II (3)	-	Sri C.V. Rao
	-	Smt. C. Vijaya Lakshmi
	-	Sri Dilip Kapgate
Stenographer Grade – II	-	Smt. G. Navaratna Kumari
Laboratory Attendants (2)	-	Sri. B. Sudershan
	-	Sri. S.N. Sinha
Weed Science Division		
Deputy Director (WS)	-	Dr. Bhaskar Tripathi
Assistant Director (WS)	-	Vacant
Plant Protection Officer (WS)	-	Sri. A. Krishna Reddy
Assistant Farm Superintendent	-	Sri. P. Prabhakar
Scientific Assistant Grade – I	-	Sri. G. Ramakrishna Reddy
Tractor Driver	-	Sri. M. Janardhan Reddy
Field Attendant	-	Sri. A.P. Bujji Babu
Mali	-	Smt. J. Anasuja
Baildars (3)	-	Sri. K. Yadaiah
	-	Smt. A. Anasuja
	-	Smt. Saleema Bee

Agriculture Engineering Division

Deputy Director (Eng.)	-	Er.G.Shankar
Plant Protection Officer (Eng.)	-	Vacant
Assistant Agricultural Engineering	-	Sri K.Jhon Nenon
Stenographer Gr.II	-	Vacant
Mechanic	-	Sri N.Achuta Rao
Caretaker Mechanic	-	Sri Prabhudayal
Blacksmith	-	Sri B.Hanumanth Rao
Drivers (7)	-	
i.. Staff Car Driver Gr.I	-	Sri N.Balamallesh
ii. Staff Car Driver Gr.II (2)	-	Sri T.Jangaiah
	-	Sri Mohd.Babu
iii. Drivers (4)	-	Sri S.Purnachandra Rao
	-	Sri Gyan Singh
	-	Sri B.Narasinga Rao
	-	Vacant
Machinery Attendent	-	Sri S.Ramesh

Extension & Communication Division

Assistant Director (WS)	-	Dr.D.P.Nagdeve
Senior Artist	-	Sri VVS.B.Koteswara Rao
Machine Minder	-	Sri D.V.Sharma
Varityper Operator	-	Sri K.Laxminarayana
Senior Scientific Officer Gr.III	-	Vacant
Print Technician	-	Sri C.M.Vasistha
Binder	-	Vacant
Laboratory Attendant	-	Sri Rajkumar Singh Kushwah

Administration Division

Administrative Officer	-	Vacant
Stenographer Gr-II	-	Sri S.C.Rao
Senior Library Information Assistant	-	Sri S.Paramsivam
Accountant	-	Vacant
Caretaker	-	Sri B.V.Narasinga Rao
Head Clerk	-	Vacant
Store Supervisor	-	Sri U.S.Bagalore
Stenographer Gr.III	-	Sri C.Prabhakar
Upper Division Clerks (4)	-	Sri A.S.R.Reddy
	-	Sri Man Singh
	-	Sri J.S.R.C.Murthy
	-	Sri C.S.Kumar
Lower Division Clerks (6)	-	Sri G.T.Anil Kumar
	-	Sri M.J.Anthony
	-	Smt.K.Rani Vijaya Kumari
	-	Smt.S.Prameela Rani
	-	Smt.D.Bhanumathi
	-	Vacant
Electrician-cum-Pump Operator	-	Sri B.S.R.Varma

Daftary	-	Vacant
Peons (4)	-	Sri S.Raghu Ram
		Sri Anthony Francis
		Sri M.Narasiah
		Mohd.A.Razak
Laboratory Attendent	-	Sri Surender Kumar
Wardboy	-	Sri P.Raghu
Farash	-	Vacant
Sweepers (4)	-	Sri T.Eashwar
		Smt.P.Laxmi
		Smt.T.Shantamma
		Smt.E.Advamma
Chowkidars (8)	-	Sri. G.Kistiah
		Sri. Mohd. Saleem
		Sri K.Lakshamayya
		Sri N.Haridass
		Sri G.Eashwariah
		Sri D.Bheemaiah
		Sri J.Mallesh
		Sri D.Nagaiah
 Evaluation Division		
Assistant Agriculture Engineer	-	Sri V.P.Brasad
Mechanic	-	Sri B.Prabhakar
Laboratory Attendants (2)	-	Sri K.Swamy Dass
		Sri B.Hanumanth Rao

STATEMENT SHOWING THE DETAILS OF EXPENDITURE INCURRED DURING THE YEAR 2007-2008.

(Rs. in lakhs)

Name of the Scheme	Details of Sub-head	Budget allocation During the year 2007-2008	Actual Expenditure incurred during the year 2007-2008
NON-PLAN			
Training in Plant Protection			
	Salaries	176.42	157.31
	Wages	0.10	----
	Overtime Allowances	0.30	0.17
	Domestic Travel Expenses	8.00	7.49
	Office Expenses	12.00	11.86
	Material & Supply	4.50	4.50
	Minor Works	10.00	----
	Machinery & Equipment	3.50	3.47
	Medical Treatment	1.00	1.54
	Rent Rates & Taxes	---	----
	Publications (P)	---	----
	Motor Vehicle	---	----
	OAE(P)	---	----
	TOTAL	224.82	186.34
PLAN			
Training in Plant Protection			
	Salaries	---	----
	Wages	0.10	0.28
	Overtime Allowances	0.10	0.04
	Domestic Travel Expenses	0.50	0.46
	Office Expenses	28.00	28.43
	Material & Supply	2.00	2.00
	Minor Works	6.00	----
	Machinery & Equipment	1.81	1.80
	Medical Treatment	---	----
	Rent Rates & Taxes	0.18	0.02
	Publications (P)	7.00	7.00
	Motor Vehicle	---	----
	OAE(P)	12.00	9.70
	TOTAL	57.69	49.73
PLAN			
Capital Outlay			
	Major Works	---	----