



## Plant Health *News Letter*

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### From the Director General's Desk

Agricultural productivity is dependent on various factors such as climatic conditions, flow of ecosystem services and freedom from pests. The debilitating influence of pests can cause serious production losses to farmers, jeopardize exports of agricultural commodities, and have a significant impact on the environment and a nation's economy. The looming threat of climate change may further exacerbate the crop loss due to pests. Intensive use of ecosystems to enhance productivity can affect ecosystems through soil erosion, water depletion/contamination, biodiversity loss and disruption in flow of ecosystem services, which will have a bearing on plant health and biosecurity. Ensuring biosecurity is vital for the ongoing productivity, sustainability and quality of a country's agriculture, food security and agricultural industries.

Plant Health is impacted by several factors such as soil health, nutrient management, abiotic stresses, pest population and ecological balance between pests and beneficial insects. These factors vary from one agro-climatic region to another. In order to reduce crop losses due to pests, expertise is required in plant health management, the science and practice of understanding and overcoming biotic and abiotic factors that limit plants from achieving their full genetic potential as crops. NIPHM is mandated to build capacity of the agricultural extension functionaries/ staff of Directorate of Plant Protection, Quarantine and Storage/Scientists of SAUs and ICAR institutions on recent advances in plant protection.

I have immense pleasure in launching a Quarterly News Letter on Plant Health Management. Through this News Letter recent advancements in the field of Plant Health Management, Biosecurity and Incursion Management and Pesticide Management will be brought to the notice of readers. This issue being the maiden issue I wish to brief the readers about NIPHM and the capacity building programmes of the institute.

Central Plant Protection Training Institute (CPPTI) was established in 1966, and later renamed as National Plant Protection Training Institute (NPPTI), for Human Resource Development in plant protection technology. From mid 1980s the emphasis was shifted to crop-oriented integrated pest management. The institute was identified as a Regional Training Centre for Plant Protection by the FAO of the United Nations and as a Centre of Excellence for Training in Plant Protection Technology under the World Bank aided NAEP-III. NPPTI was converted into an autonomous body viz. National Institute of Plant Health Management (NIPHM) in the year 2008 to meet the emerging training needs in environmentally sustainable plant health management with focus on biosecurity and incursion management, and to function as a policy support centre.

NIPHM has 4 major divisions viz. a) Plant Health Management, b) Plant Quarantine and Policy, c) Pesticide Management and d)



Dr. K. Satyagopal, IAS, Director General - NIPHM

Information and Communication Technology (ICT). NIPHM specializes in Plant Health Engineering and Rodent Pest Management apart from the core disciplines of entomology, pathology and agronomy.

#### **A brief outline of the capacity building programmes of NIPHM**

##### **Post Graduate Diploma in Plant Health Management (PGDPHM)**

The aim of the course is to develop a committed and competent cadre of agricultural professionals to promote environmentally sustainable plant health and biosecurity management in India and neighbourhood. On completion of the course, participants will have developed

- skills for conducting participatory action research, which empowers the farmers to take informed decisions by adopting discovery based learning.
- competence in Agro-ecosystem analysis which relies on experiential learning.
- knowledge to promote safe and judicious use of pesticides through adoption of appropriate engineering systems.
- expertise in pesticide formulation/residue analysis.
- expertise in ecological and ethological approaches of integrated rodent pest management.
- understanding of Biosecurity Management & Sanitary and Phytosanitary issues.
- skills in pest surveillance and disease diagnostics.



**Agro-ecosystem analysis (AESA) based Plant Health Management :**

Globally IPM practices underwent several improvements and over the years Agro-ecosystem analysis (AESA) based plant health management has gained universal recognition and acceptance. AESA based plant health management recognizes the intricate interdependence among various components of an ecosystem viz: edaphic, abiotic and biotic components of an ecosystem and the significance of natural flow of ecosystem services in plant health management. NIPHM is promoting AESA based plant health management which enlists farmers participation in decision making based on experiential learning through farmers fields schools.

**Biosecurity Management:** India's geographic location and its shared borders do not provide natural protection from exotic threats. The current national quarantine system also does not prevent the introduction of pests, diseases and weeds that can harm agricultural industries, the environment and native Agro-ecosystems. NIPHM is offering capacity building programmes to strengthen Biosecurity in the country and the region.

**Biocontrol agents and biopesticides:** Skills are imparted in Mass Production Techniques for commercially viable biocontrol agents and biopesticides and monitoring protocols for quality assurance.

**Pesticide Chemistry:** Aims at developing expertise in pesticide formulation/residue analysis using conventional as well as modern instrumental methods of analysis. The trainees will also be exposed to good Laboratory practices and NABL accreditation procedure.

**Vertebrate/Rodent Pest Management:** Provides indepth analysis of integrated rodent pest management (RPM) that is woven around the ecology and ethology of rodents in diverse Agro-ecosystems. Some of the programmes cater to the requirement of RPM in urban areas, to prevent spread of dreaded zoonotic diseases such as plague, leptospirosis, scrubtyphus etc.

**Plant Health Engineering:** Focuses on appropriate engineering systems for pesticides application, calibration of the appliances for proper delivery regime, safe judicious and efficacious use of pesticides.

**Integrated Weed Management:** Emphasizes the need for synergistic use of complementary control management practices and develops skills in proper identification of weeds.

**Training Programmes for Private/Public sectors/NGOs :**

Exclusive programmes in AESA based plant health management, M.Br. Fumigation, Production protocol for biocontrol agents and bio-pesticides, Pesticide Application Techniques, Urban Integrated Pest Management and industry specific tailor made programmes are offered to the private sector/ NGOs and public sector undertakings. I hope that the agricultural extension functionaries of Government, scientists of various institutions and stakeholders from NGOs/ private and public sector will take advantage of the capacity building programmes offered by NIPHM.

  
(K. Satyagopal)  
Director General

**New Initiatives****Post Graduate Diploma Program in Plant Health Management (PGDPHM)**

NIPHM aims to develop committed cadre of plant protection professionals to promote environmentally sustainable plant health and biosecurity in India and neighboring countries. The erstwhile 10 months Post Graduate Diploma Course (PGDC) has been revamped to include Plant Biosecurity and Agro-Eco-System-Analysis (AESA) based pest management approach in addition to vertebrate pest management, pesticide management and pesticide application technology. The duration of the course increased to 12 months from the existing 10 months. The first batch of this course started from July 2011 with a total of 22 participants from Agriculture University, State Department of Agriculture/Horticulture, and fresh Graduates.



Trainees organizing AESA based PHM in paddy crop

**Building the capacity of youngsters for the sustainable agricultural programmes**

Inauguration of PGDPHM programme by Dr. K Satyagopal, IAS & DG NIPHM



**Village adoption Program for AESA based PHM in vegetables**

Dr. V. Markandeya and Dr. Satish K. Sain

NIPHM has adopted village Devuni Yerravalli in Chevella Mandal of Ranga Reddy District to encourage farmers to follow Agro-ecosystem analysis (AESA) based plant health management (PHM) for sustainable agriculture. Base line study was carried out to collect the information on existing crop production practices, crop production problems as well as for making the advisory practice plan from a total of 35 selected farmers. The major source of family livelihoods for the villagers is agriculture. 30.5% farmers are uneducated while remaining 69.5% are educated (28% primary, 36% Secondary, 24% higher secondary and 4% graduate level). Average family size in the village is 3.4 persons (range 2-16 persons/family). The average size of landholding is 7.26 acre with 4.51 and 2.7 acres of rain fed and irrigated respectively. Vegetables are the most preferred crops (97.2%) followed by cereals (22.2%) and fruits (16.6%). Most of the farmers purchase raised nursery of vegetable crops (77.8%). Only 22.2 % farmers are raising nursery that is with the old and flatbed method. However, they lack in technical know-how. 97.2% farmers are using pesticides and apply the pesticide spray just by seeing the insect damage/its presence in the field. Soil testing for nutrient health was not followed respondents expected



FFS program on soil health management

information about new varieties, new technologies, help to solve diseases and pests problems and safe pesticide applications advice from NIPHM experts.

As part of advisory program, farmers were trained by NIPHM for collection of soil sample and submission of samples for analysis by the state soil testing laboratory. Based on soil nutrient availability status, a farmer's advisory meeting cum workshop was organized in the village and they were suggested to follow the good soil health management practices as well as balanced use of fertilizers.

NIPHM experts are visiting the village periodically and conducting Farmers Field School programme (FFS) every week. Farmers were provided FFS kit including notebook, writing materials, pest identification lenses, and bags. Do's & Don'ts for field preparation, varietal selection, nursery raising, fertilizer application, irrigation, weed control, proper use of chemical pesticides and how to maintain the crop ecosystem were explained to the farmers. Also, FFS was organized for identification and management of insect pests in tomato and cabbage. Farmers were also advised on the control of carrot fly through cultural, mechanical, botanicals and bio-control agents.

*AESA based PHM in an adopted village Conserving Agro Ecosystem for better quality and healthy crop production*



Farmers being advised for disease and pest management

**Village adoption Program for Rodent Pest Management**

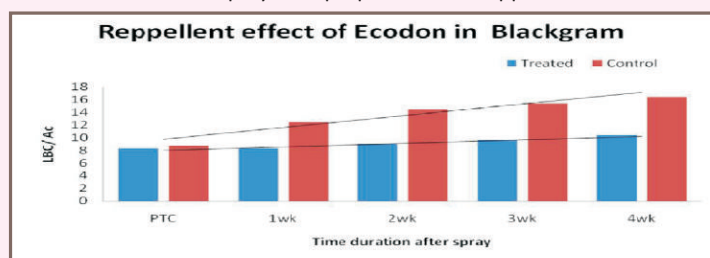
Dr. A.M.K. Mohan Rao and Dr. N. Srinivasa Rao

Lankala Koderu, one of the villages of West Godavari District, is adopted by NIPHM for reducing the rodent pest problems. The village is located between geographical coordinates of 160520" north 810680" east. This is a known endemic area for rodent problem. The soils are heavy black alluvial type completely with canal irrigation. The existing cropping pattern is rice-rice-pulse. Among the total cultivable area, rice occupies major (84.3%) followed by perennial coconut plantations (6.6%) and fish tanks (9.1%). The base line survey of the village showed that, 66.7% of farmers are literate. The average landholding size is 3.42 acre. Most of the farmers know about the rodent problem in crops, but only 37% of them know the role of rodents in transmitting diseases to humans. Though, all the farmers practicing cultural control of rodents only few of them (23%) know about the rodenticides and their safe application. Under village adoption program, several rodent pest management activities including technology validation, farmer field school and rodent control campaign are being organized.

**Castor based rodent repellent:** The efficacy of herbal repellent, ecodon was evaluated in blackgram fields using ecodon and water



Ecodon spray fluid preparation and application





@1:50 ratio as field bunds spray at a width of 2-3 ft. The pre and post rodent infestation rates recorded at weekly intervals from the blackgram fields and non treated fields showed that the treatment reduced rodent incidence and increased yield to a tune of 30kg per acre.

**Community Trap Barrier System (TBS):** A trap barrier of 30 x 30 m erected around the early sown paddy nursery for protecting the nursery from rats. The system lures and drives the native rodent population from the surrounding fields into the traps laid in the barrier. The nurseries, which are raised latter in the season around the trap barrier escaped with minimum rodent damage due to reduced populations. About 12 rats were trapped into the TBS and the halo protection of the TBS on surrounding nurseries was significant upto a distance of 100 m.

#### Halo protection effect of TBS

Distance from TBS (m)	Rodent Infestation (LBC/Ac)	% nursery damage
25	4.25+0.85	1.33+0.34
50	5.75+0.63	1.15+0.39
75	6.25+0.95	1.38+0.32
100	6.75+0.48	2.05+0.40
150	14.5+0.96	8.70+1.26
200	15.0+0.71	9.25+1.13
Control	14.75+0.75	9.43+0.89
+ Sem		

**Rodent Control Campaign:** A participatory Rodent control campaign was organized in the village with department of agriculture during Kharif season at early tillering stage. Orientation program was organized for the farmers before organizing the campaign and wide publicity was also given. Farmers themselves prepared the poison baits with 0.005% bromadiolone. The bait packets were distributed and farmers were taught about how to place them in the rodent burrows.



Trap barrier system around the paddy nursery

FFS on rodent pest management: FFS programme with more emphasis on rodent pest management was taken up during Kharif 2011. Stakeholders were identified and baseline data was collected as pre-seasonal activity. Cultural practices like trimming of bunds, removal of weeds and maintenance of smaller bunds were advocated to the farmers for rodent pest management.



Rodent control campaign: Preparation and distribution of poison baits

### Theme Article

#### Rodent Pests in Agricultural Crops : Reducing the Problem with Ease

Dr. A.M.K. Mohan Rao

Under traditional farming systems, rodents generally cause losses in production of paddy and wheat to the tune of 5–10% per annum. In certain areas the losses has risen dramatically over the last few decades, most noticeably in places where cropping frequency has increased. Today, it is not unusual for farmers to report chronic yield losses of 20–30% per annum, rising to 50% or even total crop loss in certain seasons. In Asia, a loss of 5% of rice production amounts to approximately 30 million tones, enough rice to feed 180 million people for 12 months. The assessment of impacts of rodents on pre- and post-harvest operations shows that the rodents play a significant role in food security and poverty alleviation programs for the rural poor.

**Rodent Outbreaks:** Annual losses caused by rodents are episodic outbreaks that cause famine-like conditions and are well documented in North Eastern India preceding gregarious flowering of species of bamboo. Periodic outbreaks are reported in Andhra Pradesh following flash floods or cyclones in delta regions. For example, the 1996 cyclone was followed by an outbreak of rodent populations in 1997, lead to 29% standing crop damage at early tillering and affected 4.3 million farmers. The deficit rainfall in



Farmers showing rodent damage in paddy crop



Rodent damage in black gram crop



Godavari catchment areas in 2009 resulted in a loss of 1.72 lakh tonnes paddy due to rodent pests during kharif, 2010.

Lack of Cauvery river flooding at tail end areas of the river also resulted in rodent outbreak during 1994 in Tamil Nadu and Karaikal area of Puduchery. Similarly impact of three year dry spell in Western Gujarat (Saurashtra) followed by heavy rains made rodent outbreak in Saurashtra area of Gujarat during 1990-91 causing colossal losses to wheat upto 21%, groundnut upto 52%, gram (25%) and cotton (23%). During July 2011, serious rodent outbreak was reported in Madhepura district of Bihar in paddy and wheat crops. The reasons attributed include individual approach of farming community with symptomatic treatments, using acute rodenticide – zinc phosphide without pre baiting, establishment of Lesser bandicoot after 2008 floods while replacing Soft furred field rats all along Kosi river and favourable cropping pattern i.e., rice – wheat – green gram/maize all through the year making continual availability of food to rodents.

**Impact of added irrigation facilities:** In India, major changes in agricultural systems have increased the rodent problem in recent decades. For example, the Indira Gandhi Canal brought more cultivable land under irrigation, but there was a concomitant increase in rodent impacts on crops because the irrigation canals provided access routes for the lesser bandicoot rat to move into areas where it had never been previously recorded. This species then replaced desert rodents as the dominant rodent species.

**Zoonotic diseases:** Another important impact is the influence of rodent-borne diseases on the health of farm animals and humans. The prevalence of rodent zoonoses is increasing and is likely to be an important impetus for rodent management in irrigated agro-ecosystems in the future. The extreme flooding leads to outbreaks of Leptospirosis and the classical example is outbreaks of Leptospirosis in Mumbai linked to monsoon flooding in last 3 years. The heavy rain fall in South Gujarat State resulted in more Leptospirosis cases in November, 2010 due to rodent vector populations in sugarcane crop.

**Long Term measures needed for Rodent Pest Management:** Rodents are perennial pests whether at field conditions or at urban situations. Long term measures are needed for preventing rodent damage to crop fields and also zoonotic diseases in the country. The following measures can be considered for integrating various tactics for effective rodent pest management:

- **Survey of rodent infestation:** Periodic survey for rodent pest problem could be undertaken in rodent endemic areas for initiating appropriate remedial measures through awareness creation measures among the farming community. The field extension functionaries may undertake survey, surveillance of rodent pests in rice and wheat crops at periodic intervals.

### Sensitisation Programme on “Approved Uses of Pesticides”

During the month of July’2011, two one day orientation programmes on “Approved Uses of Pesticides” were organized at NIPHM for the stakeholders including Professors, Scientists and the officials from department of Agriculture, Agricultural Universities, ICAR Institutes and the state Governments from Kerala, Karnataka, Maharashtra, Orissa and Tamil Nadu. As a part of continuing campaign on Approved Use of Pesticides this program was organized for the cause of safe and judicious use of pesticides, sustainable environment and to give the people pesticide residue free agricultural produce.

- **Capacity building among extension functionaries:** Most of the extension functionaries have any training in rodent pest management, except in IPM programs, wherein small chunk of portion is covered for rodent management. Hence there exists need for capacity building in rodent pest management among them. Refresher training may be given to senior officers.
- **Farmers’ Field Schools (FFS):** On pilot basis FFS exclusively on rodent pest management may be considered in the endemic areas while seeking funds from appropriate sources. The farming community may be exposed to skill oriented practices of integrated rodent management. Before undertaking the FFS, concerned officers may undergo training at NIPHM, Hyderabad
- **Integrated Rodent Management Practices:** The following integrated rodent management measures could be considered:
  - Environmental Manipulation:** Larger field bunds are major reason for higher rodent carrying capacity. Further, fish tanks also afford good breeding ground for the rodent pests. Periodic harrowing or burrow destruction on larger bunds and maintaining smaller bund size deprives rodents burrowing and hence as far as possible smaller bunds should be maintained. The bunds should be trimmed at early tillering stage of rice crop to prevent rodent harbouring. Removal of weeds also makes the immigrating rodents to avoid making burrows in the fields.
  - Role of predators:** Barn owls are major natural predators for field rodents. Hence, bird perches should be used for attracting owl perching in the nights to facilitate hunting the colonising rats. The perches should be used at only tillering stage of the crops for tackling immigrating rodents to prevent granivorous birds from causing damage to the panicles.
  - Physical methods:** Burrow digging and smoking rodent burrows may be resorted, particularly in the lien period.
  - Chemical repellents:** The castor based repellent available in the market may be used to repel the rodents from the fields and to prevent them making burrows inside the fields. The repellent should be sprayed on field bunds and it should be ensured that the repellent is not washed out with rain or any flow of water.
  - Use of rodenticides:** Generally, rodenticides are used for mass scale rodent control campaigns. Application of rodenticides and environmental manipulation should be considered as complimentary to each other rather than alternative approaches.
  - Coordination with neighbouring districts:** Close coordination is needed with neighbouring districts to monitor the rodent incidence to facilitate appropriate planning to prevent recurrence and spreading of the menace.
  - Crop management:** The rodent incidence would be less during summer period, when crop is not available in the fields. However, in the areas where pulses are grown, the incidence would be more and be carried into the kharif season. Hence future rodent pest management strategies should be based on the cropping system.



Participants actively discussing the issues on “Approved Uses of Pesticides” along with Dr. K Satyagopal, IAS & DG NIPHM



## Capacity Building

**Training on AESA based PHM in vegetables**

National level Trainers Training on “Agro-ecosystem analysis (AESA) based plant health management (PHM) in vegetable” was organized from June 01 to 30, 2011 at NIPHM. 15 agriculture, scientific and technical officers from State Agriculture & Horticulture Departments, SAUs in Andhra Pradesh, Himachal



Trainees learning disease identification



Trainees of the AESA based PHM in vegetables along with the Director General, NIPHM

Pradesh, Jammu & Kashmir, and Tamil Nadu states including the newly joined staff from NIPHM have actively participated in this programme. The trainees were provided technical know-how and hands on practicals on AESA based PHM including latest and advanced vegetable production and protection technologies.

**Apex level training on rodent control**

Apex training on Rodent Control was organized from 21st -23rd June, 2011 to State level plant protection in-charges of different states and organizations to plan, implement rodent control campaigns and monitor rodent incidence in crop fields. 12 extension officers representing Department of Agriculture /Horticulture from Andhra Pradesh, Karnataka, Assam, Manipur, Lakshadweep, Haryana and Nagaland participated in the training program. The participants were briefed on basic principles of rodent pest management and reviewed the rodent situation in their respective States. The current practices of rodent management were also reviewed and explained about various components of National Plan on Rodent Pest Management. The proposals already submitted for financial assistance for organizing rodent control campaigns under National Plan by concerned states were reviewed and finalized.



Participants of the training

**Certificate course on Urban Integrated Pest Management (UIPM)**

Certificate course on UIPM was organized for 10 professionals of Structural Pest Management Industry. The aspects covered include biology and management of mosquitoes, termites, flies, cockroaches, rodents, stored insect pests besides exposures on pesticide toxicity, safe and judicious use, application techniques, food safety and software applications for Structural Pest Management industry.



Trainees participatory learning and visit to storage godowns



Participants of the training

**Certificate course on Urban Integrated Pest Management to Medical officers**

A Certificate course was organized from 27.6.2011 to 02.7.2011 for Medical Officers from 7 Municipal Corporations of Tamil Nadu. The course contents include the urban pest problems arising out of vectors for zoonotic diseases, their biology and management. Experts from the institute, National Centre for Disease Control (Ministry of Health and Family Welfare), Indian Institute of Chemical Technology, Hyderabad, Institute of Preventive Medicine, Hyderabad and Chest Hospital, Hyderabad have dealt topics on etiology of human diseases like Malaria, Dengue, Rabies, H1N1, Leptospirosis, plague etc. their vectors and management.



### Training on FFS Methodology

Recognizing the need to involve farmers in technology development and transfer, Trainers Training program on “Farmers Field School (FFS) methodology” for the national level agriculture extension officers was organized from July 8 to 15, 2011. A total of eight agriculture, scientific and technical officers from DPPQS, State Agriculture Departments and SAUs including Jharkhand, Rajasthan, Gujarat, Karnataka, Tamil Nadu, Andhra Pradesh and Himachal Pradesh states were trained on organizing FFS program on various crops. The trainees were trained for principals and methodology of FFS, and conducting FFS in rice, cotton, fruit crops and vegetables so that the developed technologies can be further evaluated and adopted quickly through participatory extension methodology.



FFS discussion in the field

### Refresher Training on Rodent Pest Management



Rodent symptom identification in field and bait preparation

Refresher Trainers Training on Rodent Pest Management was organized for middle level extension functionaries from 2 to 8 August 2011. 33 participants from Tamil Nadu Agricultural University, Andhra Pradesh, Karnataka, Tamil Nadu, Punjab, and Bihar were trained on several basic aspects of rodent pest management including diagnosis of rodent species, rodent damage/infestation measurement, ecology and ethology of the rodent pests with more exposure to field situation. The participants actively exchanged their views and learned basic knowledge on rodent pest management, planning and organizing rodent control campaigns and related activities including designing time budget and course content for the Farmers trainer training programs. The week wise identified activities of FFS on Rodent Pest management were also thoroughly briefed to them.

### Training on Pest Surveillance

A Trainer Training on Pest Surveillance was organized from August 2 to 9, 2011. 15 agriculture scientific and technical officers from State Agriculture Departments and SAUs from Punjab, Jammu & Kashmir, Haryana, Himachal Pradesh, Assam, Sikkim and Karnataka actively participated in this programme. Trainees were provided technical information through lectures and hands on practicals on principles and methodology of pest surveillance and surveillance methodologies in cereals, vegetables and horticultural crops etc. The emphasis was on plant quarantine and biosecurity issues in India with an insight on ISPM on Pest Surveillance.



Trainees along with the Director, PQP

### Pesticides Application Technology

Two training courses on the “Pesticides Application Technology” were conducted, one from 1 to 8 June 2011 and the other from 2 to 9 August 2011. 9 & 15 participants participated during the first and second course. Various topics on principles of pesticide application techniques, types of spraying equipment and the practical's, classification and selection of the nozzles, calibration of the sprayers, pesticide formulation and their properties, rodent control techniques, weed control techniques, remote sensing and GIS

applications in Agriculture covered. Trainees also visited Hayathnagar Research Farm (CRIDA). The air assisted orchard sprayer and other farm implements were demonstrated in the field. Farm pond structures were also shown to them. Modifications for a cono weeder to a motorized cono weeder are in progress. A trolley mounted boom sprayer developed by the institute attracted the trainees from various institutes. Proposal to patent and manufacturing is in process

### Training programmes in PHM in different crops for Tobacco Board officials

Two Training programme on PHM in different crops for Tobacco Board officials was organized from 17 to 24 August and 17 to 24 September 2011. A total of 40 participants from Tobacco Board officials from Karnataka and Andhra Pradesh were provided thorough training on tobacco crop diversification and well as about the package of practices with special emphasis on plant health management for diversifying crops.





### Training on Integrated Weed Management in major field crops

National Trainers Training program on "Integrated Weed Management in Major Field Crops" was organized from 18 to 25 August at NIPHM. 18 trainees from 10 states including Andhra Pradesh, Maharashtra, Madhya Pradesh, Uttar Pradesh, Karnataka, West Bengal, Tamil Nadu, Orissa, Haryana and Chhattisgarh have participated. The program focused on hands-on-practical's on IWM in different crops like paddy, wheat, sorghum, maize, vegetables, oilseeds, pulses, cotton, and pearl millet and also emphasized on weeds of quarantine significance in India, weed management equipments, safer use of herbicides and issues on herbicide resistance and climatic changes challenges in weed management.



Training participants

### Training on AESA based PHM in rice

AESA based PHM in rice crop program is being organized from August 10 to 08 November, 2011. Nine senior level agriculture, scientific and technical officers from State Agriculture & Horticulture Departments, SAUs in Andhra Pradesh, Assam, and Tamil Nadu states are being trained under this program. The trainees are being provided class room lectures & information and hands on practical as well as field experience through AESA field practical, and FFS methodologies.



Farmers showing Rice AESA chart

### Visits/ Field days

101, final year students of B. Sc. Ag from Agricultural College and Research Institute, Madurai, TNAU visited NIPHM on 29 August 2011. Dr. N Sathyanaraya along with Dr. Satish K Sain and GA Girish explained about the NIPHM and its activities and showed the campus and activities to the



Students interacting the NIPHM Officials including Director, PQP

students. Students showed interest in PGDPHM and Dual Degree programmes and the activities being run by NIPHM.

### Forthcoming Events

- Plant Health Management in Different crops for Tobacco board: September 27 October 11, 2011
- Trainings of Farmer Trainers in Rodent Pest Management at Tenali, Guntur Dist; Vijayawada, Krishna Dist; Eluru, West Godavari Dist and Karimnagar, Karimnagar Dist., Andhra Pradesh, 26-30 September, 2011
- Training of Farmer Trainers in Rodent Pest Management at Bhavanisagar, Erode Dist, Tamil Nadu 10-14 October, 2011. Training of Farmer Trainers in Rodent Pest Management in Tamil Nadu: First week of October, 2011
- Training of Farmer Trainers in Rodent Pest Management in Lakshadweep 17-21 October, 2011
- Refresher Training in Rodent Pest Management at AAU, Jorhat, Assam from 13-19 October, 2011 & at SKUAT, Jammu from 12-18 October, 2011 and at UAS, Bangalore from 28 November- 4 December, 2011
- Certificate Course on Urban Integrated Pest Management: 01-15 November, 2011
- Certificate Course on Urban Integrated Pest Management: 01-15 November, 2011
- Refresher Course on Rodent Pest management: 07 - 13 December, 2011
- Plant Health Management in Different crops for Tobacco board: October 10-24, 2011
- Pest Surveillance: November 11-19, 2011
- FFS methodologies: November 11-18, 2011
- AESA based PHM in oilseeds/pulses: 14 November 2011 to 13 January, 2012
- Analysis of microbial biopesticides: December 14-23, 2011
- Pesticide Formulation Analysis (PFA) for Quality Control: 20 September to 8 December 2011 .
- Refresher Course on Pesticide Formulation Analysis: 04- 24 January 2012

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