

Details of course content in respect of Diploma in Plant Health Management (6 months duration) offered by NIPHM, Hyderabad

Plant health is dependent on several factors such as soil health, nutrient management, abiotic and biotic stresses and the ecological balance between pest and beneficial insects, which varies 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.

The Diploma in PHM aims to impart specialised skills, with hands on training in:

- Soil, nutrient and weed management
- Agro-ecosystem analysis based plant health management
- Ecological engineering for pest management.
- Rodent pest management
- Pesticide application technologies for ensuring safe and judicious use of pesticides
- Mass production of biocontrol agents & assessment of quality of microbial biopesticides,

This course is unique in the sense that it encompasses all the aspects of Plant Health Management in a capsule form. **The course is also offered in other specializations as mentioned below.**

Diploma in Plant Biosecurity

Plant biosecurity is an emerging area for the professionals involved in Agriculture, Horticulture, Forestry, Environment and in international trade. The constant increase in international trade of agricultural commodities has paved way for long distance movement of plant pests from their place of origin. The pests in the new ecosystems become invasive and cause extensive damage to the native flora and fauna. The threats posed by exotic and invasive species through international trade has resulted in efforts for harmonization of plant protection measures at global level through the efforts of international plant protection convention (IPPC). The diploma in plant biosecurity will enable the student to get acquainted with

- Past Pest incursion and its consequences
- Phytosanitary rules, regulations, agreements and conventions
- Pest Risk Analysis
- quarantine pests / regulated pests of concern to India
- Emergency Preparedness to combat introduced pests
- Promote safe trade by adopting systems approach
- Identification of pest free areas or areas of low pest prevalence to promote safe trade
- Phytosanitary measures.
- Export market access.

Diploma in Pesticide Management

A diploma programme of six months duration in Pesticide Management, covering the aspects of life cycle management of pesticides and related subjects is mooted for the Extension Officers. The objectives of the Diploma Programme is to develop expertise in Pesticide Formulation Analysis by classical volumetric methods & sophisticated instrumental methods of analysis, expertise in Pesticide Residue Analysis from various matrix of agricultural produce and environmental samples and expertise in Instrumental Analysis and Laboratory Management.

The course comprises the following topics/subjects in brief;

- Life cycle management of pesticides (cradle to grave),
- The legislation
- International Code of Conduct
- Registration procedures
- Introduction and practices of Plant Health Management
- Pesticide Application Technology
- Quality control
- Monitoring of Residues
- Laboratory Organisation and Management
- Agricultural economics
- Export and Import regulations for Pesticides
- The Marketing practices and others

Diploma in Vertebrate Pest Management and Structural Pest Management

Vertebrate pests constituting birds, wild animals and rodents cause damage to major crops at farm level and in storage in India. Among the various vertebrate pests, rodents are one of the major production constraints in agriculture and allied sectors apart from transmitting several diseases to the humans and live stock. Cereal crops and commercial crops like sugarcane, cocoa including oilseed crops like groundnut, coconut, oil palm etc. are most often damaged by rodents causing severe damage upto 20-30%. In addition to rodent pests, other vertebrate pests like wild boar, blue bulls and birds also pose a major challenge to crop production.

The course gives exposures on major vertebrate pests, especially rodents and principles of their integrated management. The course covers; Economic importance of vertebrate pests in agriculture, horticulture, public health, veterinary and storage sectors, Taxonomy, morphology and anatomy, behavioural adoptability and reproductive plasticity, preventive and curative methods of management of different vertebrate pests in particular the rodents.

Increased urbanization in the country had a tremendous pressure on civic infra structure systems including sewerage, drainage, solid waste management and consequently public health. The public health problems are compounded due to increasing interface between

human and pest populations, viz., rodents, mosquitoes, flies etc. Considering its importance, Urban Integrated Pest Management was given major focus and the course provides an opportunity to develop skills in pest management operations and prepares the participants for emergency preparedness to prevent the outbreak of communicable zoonotic diseases.

The course deals with biology and bionomics of major urban pests like mosquitoes, cockroaches, bedbugs, flies, termites and rodents etc.. Exposures were also given on integrated bird, weed management, pest management chemicals and their safe and judicious application in urban environs.

Diploma in Plant Health Engineering

The focus of the Diploma in Plant Health Engineering is to impart skills on 'Pesticide Application Technology', 'Safe & Judicious use of pesticides' and 'Post Harvest Management of Food Grains'. The course is practical oriented and covers importance of proper techniques of application, distribution and coverage, storage and irrigation management. It also highlights the principles of High Volume, Low Volume, and Ultra Low Volume Spraying techniques, as well as the salient features of the appliances and Spray Nozzles, their classification, selection and calibration. Operational aspects of Dusters/ Granule Applicators, Power Sources used in Plant Protection Machines, pumps & engines, maintenance procedures, etc are also covered. Important issues regarding Weed and Rodent control techniques, remote sensing and GIS applications in Agriculture, etc are also discussed by specialists in these areas.

The participants of this course develop skills in guiding the farmers in appropriate choice of pesticide application technology, storage methods, etc to be adopted to successfully manage the prevailing problems in their fields in scientific, safe & judicious manner.
