

NOC: Integrated Pest Management (IPM) - Video course



NP-TEL

NPTEL

<http://nptel.ac.in>

Agriculture

COURSE OUTLINE

Week	Topics
1	Insects, their abundance and diversity in nature; insects as pests in agriculture, reasons for outbreaks causing crop loss; concept of pest status, types of pests; methods of sampling and surveillance of pests; decision levels of pest population (GEP, EIL, ETL etc.) based on crop economy; Principles of pest management, history/definition etc. IPM and its concepts.
2	Components of IPM: legal approach, ecological management, diverting pest population away from the crop.
3	Components of IPM (contd.): managing insects with resistant plants; history, mechanism of resistance and use of plants as resistant means in pest management. Pest management by modifying insect development and behavior; insect growth regulators like repellants, attractants, inhibitors etc.
4	Components of IPM (contd.): Sterile insect technique. Biological control; using predators, parasitoids and microbes. Botanical pest management.
5	Components of IPM (contd.): chemical means of pest management. Pest management through innovative approaches; biotechnological etc.
6	Integration of different IPM techniques; pros and cons. Adoption of IPM; pros and cons. Importance of AESA in pest management
7	Successful implementation of IPM in cereals (paddy), pulses (pigeon pea and Soybean) and commercial crops (cotton and sugarcane)
8	Successful implementation of IPM in oilseed (groundnut), vegetable crops (cabbage and tomato) and fruit crops (mango and grapes);

COURSE DETAIL

Week	Topic	Speaker
	Introduction to the Course	Dr. Prabhuraj A.
Week1	Basics of insect, Pest and its categories	
Lect1	Insect, abundance and diversity	Dr. Prabhuraj A.
Lect2	Insect classification based on economic importance	Dr. Prabhuraj A.
Lect3	Pest, causes for outbreaks and categories	Dr. Prabhuraj A.
Lect4	Pest, causes for outbreaks and categories, contd....	Dr. Prabhuraj A.
Lect5	Pest surveillance and methods of sampling	Dr. Prabhuraj A.
Week2	IPM, concepts and ecological components	
Lect1	Principles of Pest Management and History	Dr. Bheemanna
Lect2	IPM, Definition and Concepts	Dr. Bheemanna

Additional Reading:

- http://ipm.agmoocs.in/sites/default/files/Insect_abundance_diversity_lect1.pdf
- http://ipm.agmoocs.in/sites/default/files/Pest_reasons%20for%20outbreaks_lect2.pdf
- http://ipm.agmoocs.in/sites/default/files/Pest_categories_EIL_ETL_lect3.pdf
- http://ipm.agmoocs.in/sites/default/files/Pest_categories_lect4.pdf
- PRINCIPLES OF PEST MANAGEMENT HISTORICAL LANDMARKS IN IPM

Coordinators:

Prof. B.V. Patil

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Prof. M. Bheemanna

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Prof. Prabhuraj A (Instructor Incharge)

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Lect3	Ecological Methods of Pest Management Legal & Cultural	Dr. B. V. Patil
Lect4	Ecological Methods of Pest Management Cultural (Contd.)	Dr. B. V. Patil
Lect5	Ecological Methods of Pest Management Cultural (Contd.)	Dr. B. V. Patil
Lect6	Ecological Methods of Pest Management Physical	Dr. B. V. Patil
Lect7	Ecological Methods of Pest Management Mechanical	Dr. B. V. Patil
Week3	Host plant resistance and Biological components of IPM	
Lect1	Host Plant Resistance	Dr. Prabhuraj A
Lect2	Host Plant Resistance (Cont.)	Dr. Prabhuraj A
Lect3	Biological Control Predators	Dr. Prabhuraj A
Lect4	Biological Control Parasitoids	Dr. Prabhuraj A
Lect5	Biological Control Microbes: Fungi, Bacteria and Viruses	Dr. Prabhuraj A
Lect6	Biological Control Microbes: Entomopathogenic Nematodes	Dr. Prabhuraj A
Week4	Pest management through botanicals, behavioural modification and radiation technology	
Lect3	Pest management by modifying insect behaviour	Dr. Bheemanna
Lect4	Use of sex pheromones in pest management	Dr. Bheemanna
Lect5	Use of attractants and repellants in pest management	Dr. Bheemanna
Lect6	Pest management through radiation technology Principles	Dr. B. V. Patil
Lect7	Sterile Insect Technique case studies	Dr. B. V. Patil
Week5	Chemical component of IPM	
Lect1	Pest management through botanicals	Dr. Bheemanna
Lect2	Pest management through botanicals (contd..)	Dr. Bheemanna
Lect3	Chemical Control History and classification	Dr. B. V. Patil
Lect4	Mode of Action of different insecticide groups	Dr. B. V. Patil
Lect5	Chemical Control Considerations for Chemicals Integration	Dr. B. V. Patil
Lect6	Insecticide Resistance and Management	Dr. B. V. Patil
Lect7	Insecticide as component of IPM	Dr. B. V. Patil
Week6	Biotech approaches, AESA and IPM case studies in field crops and pulses	
Lect1	Biotechnological Approaches in IPM	Dr. Prabhuraj A.
Lect2	Agroecosystem Analysis	Dr. Bheemanna
Lect3	IPM in Paddy	Dr. B.V. Patil
Lect4	IPM in Paddy (Contd.)	Dr. B.V. Patil
Lect5	IPM in Pigeon pea	Dr. B.V. Patil
Lect6	IPM in Pigeon pea (Contd.)	Dr. B.V. Patil
Week7	IPM case studies in oilseed and commercial crops	
Lect1	IPM in Groundnut	Dr. B.V. Patil
Lect2	IPM in Mustard & Soyabean	Dr. B.V. Patil
Lect3	IPM in Cotton	Dr. Bheemanna
Lect4	IPM in Cotton (Contd.)	Dr. Bheemanna
Lect5	IPM in Sugarcane	Dr. Bheemanna
Lect6	IPM in Sugarcane (Contd.)	Dr. Bheemanna
Week8	IPM case studies in vegetable and fruit crops	Dr. Prabhuraj A.
Lect1	IPM in Tomato	Dr. Prabhuraj A.
Lect2	IPM in Cabbage	Dr. Prabhuraj A.
Lect3	IPM in Mango	Dr. Prabhuraj A.
Lect4	IPM in Grapes	Dr. Prabhuraj A.

