

Course Contents:

Brief account of integrated pest management. Concept of economic damage and the damage boundary. Economic injury level (EIL), Economic threshold (ET), dynamics of economic injury level, environmental EILs. Pest management history, insecticide era, evolution of pest management. The concept of Pest management: definition, strategies and tactics, kinds of pests (sub economic, occasional, percnial and severe) and likely management strategies. Management with natural enemies. Biological control, numerical and functional response of biocontrol agents; types of biological control agents and their working, practice of biological control (introduction, augmentation and conservation). Ecological management; definition, procedures of ecological management. Role of sanitation, tillage, water management, crop spacing, crop rotation, trap crop, inter cropping and host tolerance in ecological management. Chemical management: insecticides, classification according to application and chemical composition (Pyretheroids, carbamates, organophosphate, Neonicotinoids, insect growth regulators, fumigants). Types of insecticides formulation, good and bad effects of insecticides; Genetic control: Sterile insect techniques, methods of sterilization and utilization of specimens. Management with resistant plants, insect and host plant relationship, mechanisms of resistance, application in the integration programme.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Textbook:

1. Pedigo, L.P., 1991. Entomology and Pest Management. Maxwell MacMillan.

Additional Readings:

2. Richards, O.W. and Davies, R.J., 1977. *Imm's General Textbook of Entomology*. Vol-2
3. Metcalf, C.L. and Flint, W.P., 1962. *Destructive and Useful Insects*, McGraw-Hill.

4. De Bach P., 1964. Biological control of insect pests and weeds. Chapman and Hall, London (Latest edition).
5. Flint, M.L. and Gouveia, 2001. IPM in practice principles and methods of Integrated Pest Management.

UZO-518 Integrated Pest Management (Lab.)

Cr. (1)

Course Contents:

1. Surveillance and sampling techniques (any five for collection of insect pests).
2. Population estimation of insect pests using different methods.
3. Calculation of economic decision levels (EIL and ET).
4. Development of a pest management programme (using any important Pest of the area).
5. Collection, preservation and identification of insect pest.
6. Effect of insecticide on insect population in the field utilizing any pest and sampling techniques.
7. Effects of tillage and intercrop on insect population in the field.

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