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ENTO. 211 Insect Ecology and Principles of Integrated Pest Management 3(2+1)

Theory

Part-I

Insect Ecology: Introduction, Environment and its components. Effect of abiotic factors—temperature, moisture, humidity, rainfall, light, atmospheric pressure and air currents. Effect of biotic factors – food competition, natural and environmental resistance. Agroecosystem.

Part-II

Categories of insect pests. IPM: Introduction, history, importance, concept, principles and limitations of IPM. Economic decision levels. Survey, surveillance and forecasting of insect pests. Assessment of insect pest population. Tools/ methods of IPM: Cultural, mechanical, physical, legislative, host plant resistance, biological, and chemical control. Importance, hazards and limitations of chemical control. Classification, toxicity and formulations of insecticides. Insecticides Act 1968-Important provisions. Symptoms of poisoning, first aid and antidotes. Recent methods of pest control-repellents, antifeedants, hormones and pheromones, attractants, gamma radiation and genetic control.

Practical

Sampling techniques for estimation of insect population and damage. Monitoring of insect population through light and pheromone traps. Insecticides and their formulations. Pesticide appliances and their maintenance. Calculations on the doses of insecticides and application techniques. Safe use of pesticides. Identification of biocontrol agents. Mass production of NPV and fungi.

Lecture Schedule: Theory

S.N.	Topic	No. of lectures
1.	Insect Ecology: Introduction, Environment and its components.	2
2.	Effect of abiotic factors—temperature, moisture, humidity, rainfall, light, atmospheric pressure and air currents.	2
3.	Effect of biotic factors – food competition, natural and environmental resistance. Agroecosystem.	2
4.	IPM: Categories of pests. Introduction, history, importance, concept, principles and limitations of IPM.	3

5.	Economic decision levels.	2
6.	Survey, surveillance and forecasting of insect pests. Assessment of insect pest population.	3
7.	Tools/ methods of IPM: Cultural, mechanical, physical, legislative, host plant resistance, biological.	4

8.	Chemical control: Importance, hazards and limitations. Classification, toxicity and formulations of insecticides.	3
9.9.	Insecticides Act 1968-Important provisions.	3
10.	Application techniques of insecticides, symptoms of poisoning, first aid and antidotes.	4
11.	Recent methods of pest control- repellents, antifeedants, hormones and pheromones, attractants, gamma radiation and genetic control.	4

Lecture Schedule: Practical

S.N.	Topic	No. of lectures
1.	Sampling techniques for estimation of insect population and damage.	2
2.	Monitoring of insect population through light and pheromone traps	1
3.	Insecticides and their formulations.	2
4.	Pesticide appliances: Handling and their maintenance of small kitchen garden sprayer, hand compression sprayer, knapsack sprayer, foot sprayer, power sprayer, hand rotary duster, power duster	4
5.	Calculations on the doses of insecticides	1
6.	Application techniques of insecticides.	1
7.	Safe use of pesticides	1
8.	Identification of biocontrol agents	1
9.	Mass production of NPV and fungi	3

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