

Objective(s)

At the end of this course, the student will know insect and pest, its behavior, mode of action, symptoms etc. and proper control method for pest and disease management.

UNIT I

Overview and an introduction to Insect and Pest – Terminology, Insect morphology, categories and classification, Insect Ecology – Environment and its components, Biotic and abiotic factors of insect pest outbreaks in agro-eco systems

UNIT II

Insect biodiversity, Beneficial insects – parasites and predators, Pests of field crops, Nature and symptoms of insect and pest damages in important crops – leaf area damage

UNIT III

Introductory plant pathology – definitions and objectives of plant pathology, Plant disease epidemiology, Disease triangle and disease cycle, General principles of plant diseases management – avoidance, exclusion, protection, Important diseases of field crops

UNIT IV

Insect pest and plant disease control measures – Legal, cultural, physical, biological and chemical methods, Integrated Pest Management (IPM) and Integrated Disease Management (IDM) – Scope and recent practices

UNIT V

Insect and pest surveillance and forecasting Plant disease forecasting – remote sensing applications Plant quarantine – quarantine rules and regulations Remote sensing for weed-crop discriminations and mapping of weed infestations

Reference Book(s):

1. A Text book of Entomology – by R. Mathur, Campus books, 2002
2. Agrochemical and Pest Management – by T. V. Sathe, Daya, 2003
3. Basics of Entomology – by Gyan Deep Singh, Anmol, 2008
4. Applied Agricultural Entomology – by L. K. Jha, New Central Book Agency, Calcutta, 1987
5. Agricultural Pest of South Asia and Their Management – by A. S. Atwal and G. S. Dhaliwal, Kalyani Publ., 2002
6. Insect Migration: Tracking Resources through Space and Time – by V. A. Drake, A. G. Gatehouse, Cambridge University Press, 1995
7. A Textbook of Applied Entomology (Vol I: Concept in Pest Management) – K. P. Srivastava and G.S. Dhaliwal, Kalyani Publ., 2010

Practical(s):

1. Study of parts of important insect pest – types of wing, antennae, mouth parts, legs, etc.
2. Study of distribution patterns of insect
3. Study of behavior of insect and orientation (repellency, stimulation, deterancy)

4. Sampling techniques for the estimation of insect pest population and damage
5. Identification of pests, etiology, host-parasite relationship of important crop disease
6. Study of importance disease of field crops – field visit
7. Survey and collection of disease samples – disease album
8. Study of various agro-chemicals used for insect pest control
9. Study of various agro-chemicals used for plant disease control

PRJT 321 MINI PROJECT

3*(0+3)