Short Course on Plant Protection Techniques - 2025

Objectives:

- Educate the early-career/entry-level plant protectionists of the state and cooperate sector institutions with novel techniques in plant protection and equip them with hands-on experiences of laboratory and field techniques needed for effective, rapid and accurate diagnosis of agriculturally-important pests.

Target group: Entry level plant protectionist of the state and cooperate sector institutions in Sri Lanka

Qualifications needed: Basic degree in biological sciences or Agriculture Diploma with minimum of five years of work experience

Course duration/Contact hours: Consists of five modules (60 hours of lectures, practicals and In class assessments).

Mode of delivery: In person (on ground)

Course content:

Module 1: Techniques in Entomology and Nematology

- Identification of key insect pests, symptoms of crop damages, beneficial insects
- Sampling techniques of insects
- Quantification of pest damage/crop loss assessment
- Curation and preservation of insects
- Techniques for insect behaviour studies
- Laboratory and field techniques in Plant Nematology

Module 2: Techniques in Plant Pathology and Microbiology

- Identification of plant diseases, causal organisms
- Isolation techniques of plant pathogens
- Culturing and maintaining of microorganisms
- Isolation and screening of beneficial microorganisms
- Inoculation techniques, proving pathogenicity

Module 3: Novel techniques in Plant Protection

Rapid identification kits of plant pathogens/microorganisms

- Introduction to molecular biological techniques useful in plant protection
- Applications of Polymerase Chain Reaction techniques in plant protection
- Applications of Nucleic acid hybridization techniques in plant protection
- Use of Artificial Intelligence, digital tools in plant protection
- Advanced toxicology in insecticides

Module 4: Techniques in pest and disease management

- Spraying techniques, calculations of pesticides, safe use of pesticides
- Disease assessment, use of field keys
- Systematic approach in Disease diagnosis
- Identification of weeds and techniques in weed management
- Biological control in plant protection
- Policies and regulations

Module 5: Data collection, analysis and interpretation

- Designing of experiments
- Data collection from research in Plant Pathology, Microbiology and allied disciplines
- Analysis of quantitative, qualitative data, Percentage data and interpretation of results
- Use of DNA databases as a plant protectionist