



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

ENT -321 Management of Beneficial Insects 2 (1+1)

Unit I

Lecture-1: Introduction to Entomology and Economic Entomology:

The word Entomology is derived from a Greek word “Entomon” and “logia”. If we look at the meaning of these two words, “Entomon” means insects while “logia” meaning the study. Keeping this in view, we can define entomology as the branch of zoology that deals with the scientific study of insects.

Entomology is a biological science dealing with a specific group of organisms, the insects. Insects constitute the **largest Class (Insecta or Hexapoda)** of the whole living organisms and about **72 per cent** of all living animals are insects with 9-15 lakh known species. Insects are omnipresent and each crop we cultivate is being attacked by at least a dozen of insect species called as pests. **Apart from the pest insects there are several productive and useful insects like honey bee, silkworm, lac, pollinators, scavengers and agent of biological control of insect-pests and weed.** Insects are considered as one of the leading constrain in increasing agricultural productivity. Hence it is important to understand about the insects, their biology, classification and management.

Agricultural Entomology is a branch of agriculture that deals with the study of insect of agricultural importance like pests, agent of biological control, pollinators and productive insects.

Insect Ecology: This branch of entomology deals with the relationships of insects with their environment. This branch focuses on the study and analysis of presence of insects in an ecosystem.

Insect Morphology: The study of insect body parts as well as their function is studied in this branch of entomology. This branch deals mostly with the external body parts of an insect.

Insect Pathology: The diseases that may harm or effect the health of insects is studied in this branch of entomology.

Insect Physiology: This branch of entomology deals with various functions and behavioral systems present inside the insect body.

Insect Taxonomy: As we know taxonomy is the naming and classification of organisms. So, insect taxonomy is the practice as well as theory of naming the insects. It is a continuous process as there are many unidentified insects still roaming on the planet earth.

Insect (Insecticide) Toxicology: This branch of entomology deals with how the insecticides and other chemical affect the insect's physiological functions.

Industrial Entomology: The branch of entomology deals with the study as well as rearing of insects for business or beneficial purposes. This includes honeybee or apiculture, sericulture, lac, bumblebees, butterflies, silkworms etc. This branch of entomology actually deals with benefit of mankind.

Medical and Veterinary Entomology: Insects not only harm humans, but also animals. This branch of entomology deals with the insects that harm not only humans but effect animals also. It deals everything about medical public health, and veterinary importance such as Malaria, Dengue etc.

Biological Control Entomology: This branch deals with using insects against harmful insects. In other words, friendly insects are used to cater harmful insects thus called as biological control insects.

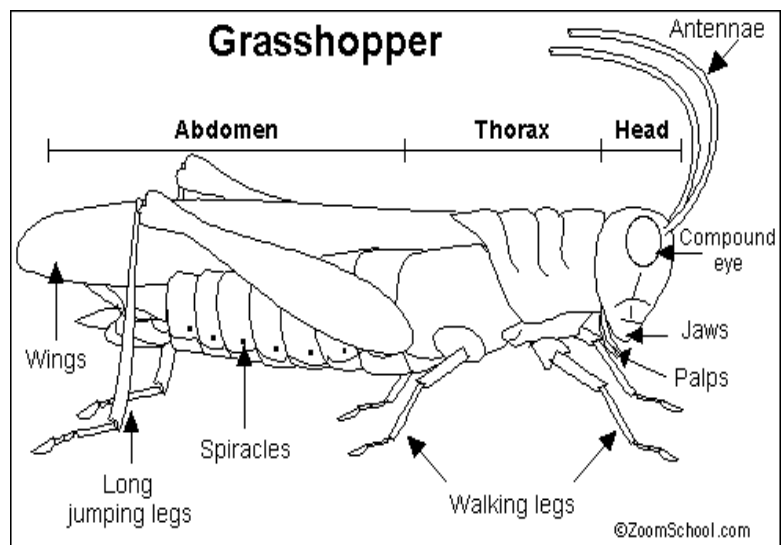
Post-Harvest Entomology: This branch of entomology deals with the study, practice and control of those insects that harm the stored commodities and products like stores wheat, rice etc.

Forensic Entomology: In this branch, the focus is on using the insects to determine or estimate the time, place of human health for legal purposes.

Forest Entomology: This branch of entomology deals with the trees and insects. In other words, in this branch, we study the impact of insects on forests and forest products and design solutions to safeguard trees from serious damage.

Crop Protection

Entomology: The branch of entomology that deals with the study of controlling insects from damaging the crops in the fields in called as crop protection entomology. **Sometimes, it is also called as agricultural entomology.**



Insects: insects are tracheate arthropods and characterized by having segmented legs, three segments of body and paired segmented appendages. The body divided into three parts namely head, thorax and abdomen. For locomotion, insect possess three pairs on legs and usually two pair of wings.

Economic Entomology: Economic entomology is a field of entomology, which involves the study of insects that benefit or harm humans, domestic animals, and crops. Insects that cause losses are termed as pests. Some species can cause indirect damage by spreading diseases and these are termed as vectors.