



**FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES**

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

### Lecture-5 Enemies of Bees and Their Management:

#### ➤ Various Predatory Enemies of Bees and Honey:

- Greater wax moth-*Galleria Mellonella*-the caterpillars make tunnels through near the midrib of a comb.
- Lesser wax moth-*Achroia grisella*-The damaging symptoms same as greater wax moth. The use of Para dichlorobenzene in stored combs gives protection against these moths.
- Tenebrionid beetle (*Platybolium alvearium*), African small hive beetle (*Aethina tumida*) The uses of Para dichlorobenzene are most effective against the above beetles.
- Predatory wasps like *Vespa orientalis* and *Vespa magnifera*, prey on the bees
- Ants attack colony resulting weakening of the bee colony.
- Birds- Number of predatory birds' prey upon the bees like-*Merops orientalis*, *Merops philippinus*.



➤ Honey is a sweet viscous liquid produced by honeybees mainly from the nectar of blossoms or from secretion.

➤ Death head moth use to attack on hive for honey and known as honey robber.

#### ➤ Diseases of honey bees

**Nosema disease:** Caused by fungus *Nosema apis*, disease attack during



winter season, cause dysentery in bees. use of 40% formalin is recommended.

**Amoebic Disease:** Caused by *Maipighamobea mellifica*. Infect Malpighian tubules. Use of glacial acetic acid is recommended.

**Acarine Disease:** Caused by *Acarapis woodi* and infect trachea and respiratory tracts. Use of safrol oil/ petrol or destruction of infected bees.

### **Brood Disease:**

- American foul brood: Bacteria, *Bacillus larvae*, Sunken capping of broods, start turning into chocolate in appearance. Dusting combs with sulphur powder. Larvae emits foul smell
- European foul brood: *Bacillus pluton*, symptoms are similar to American foul brood but without foul smell.
- Sac brood: Viral, larval skin becomes thick and liquid ooze out. Sanitation of bee hive.
- Stone brood: Fungus, *Aspergillus* sp. larvae becomes stony hard and breaks, fungus attack on elementary canal. Sterilization with formaldehyde is recommended.
- Chalk brood: fungus, *Pericystis apis*, fungus convert larvae in chalk, removal of cells, colony is only option.