



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

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

Lecture-12 Enemies of Silkworm:

1. **Pebrine:** caused by fungus *Nosema bombycis* and infect almost all the life stages of silkworms. Typical symptoms include paper like black spots on the larval body, laying of unfertilized and dead eggs, swollen abdomen and wrinkled larval skin. Transfer through transovarial transmission. Sterilization with formalin, mother moth examination for disease and use of disease-free egg karyotyping are protection measures.



2. **Flacherie:** Bacterial disease caused by *Bacillus bombysepticus*. Typical symptoms include semi hard excreta to flaccid skin and larvae stop feeding. Hygiene and proper incubation of eggs is required.
3. **Grasserie:** Viral disease, caused by NPV. All life stages can be infected and show body hardening and oozing. Sterilization and isolation of infected stage is required.
4. **Muscardine:** Various fungus like *Beauveria bassiana*, cause white Muscardine, *Spicaria prasina* cause green muscardine. Fungal outgrowth on all stages of life. Sterilization and isolation of infected stage is required.
5. **Uzi fly, *Exorista sorbillans* (Diptera):** The flies lay eggs on grown up larvae of silkworm and maggots on hatching eat away the body contents of caterpillar.

Management:

- Prevent fly's access to silkworms by mechanical means. Fly proof rooms. All crevices of the rooms should be closed to prevent maggots pupating in the soil.
 - Dusting of China clay @ 3g/ 100 on spinning larvae before mounting
 - Spray of Dimilin @ 1g/ 0.1 square meter
6. **Beetles:** The adults and grubs of *Dermestes cadaverinus* (Coleoptera) and other dermestid beetles are attracted to smell of the cocoons. They eat the cocoons, enclosed pupae and often the eggs of silkworms. The females lay eggs in the crevices, organic matter and wooden boards.

Management: Closure of cracks and crevices, Thorough cleaning of rearing rooms

7. **Ants:** The ants (Hymenoptera) attack silkworms in rearing trays.

Management:

- Legs of the rearing stands should be dipped in ant wells (water + kerosene)
 - Use of ash or kerosene at the handles of the mountages at the time of spinning
8. **Lizards, birds, rats and squirrels:** These feed on silkworms, Rearing rooms should be kept free from lizards, setting of traps for rat and squirrel control and Scaring of birds from the vicinity

