

Lecture No. 6.

PEARL MILLET AND ITALIAN MILLET

1. Shoot fly, *Atherigona approximata*, Muscidae, Diptera

Symptom of damage: Dead hearts in young plants; corkscrew or chaffy grains in the upper portion and well-developed grains in the lower portion of earhead in mature crop.

Nature of damage: Maggot damages the growing point and causes 'dead heart'. It injures the leaf blades as well as the young shoots and tillers. It also infests the peduncle of earhead at the time of emergence from boot-leaf, preventing seed setting at advanced stage of crop growth.

Egg: Eggs are laid on the shoots near the soil surface.

Maggot: White cylindrical maggots.

Pupa: Puparium brown colour, pupates inside the stem. S

Adult: Greyish white fly.

2. Earhead midge, *Geromyia penniseti*, Cecidomyiidae, Diptera

Symptom of damage: Grainless glumes with white pupal case attached to the tip of the spikelet.

Nature of damage: Maggot attacks developing grains and feed on the ovaries. As a result of their feeding grain formation is affected and in case of heavy infestation entire head appear to be aborted.

Egg: Eggs are laid singly or in pairs in spikelets and may be found sticking to glumes.

Maggot: White cylindrical maggots.

Pupa: Puparium brown colour pupates inside the spikelet.

Adult: Light pink, fragile fly.

3. Leaf beetle, *Lema downsei*, Galerucidae, Coleoptera

Symptom of damage: Whitening and drying of leaves leading to burnt up appearance.

Nature of damage: Grub and adult scrape the green matter of leaves in rainfed crop causing whitening and ultimate drying.

Egg: Eggs laid singly on the leaf tissue.

Grub: Whitish with a black head, swollen humped body and has the habit of carrying its faecal matter dorsally.

Pupa: Pupation takes place inside the soil.

Adult: Straw coloured beetle.

4. Root grub, *Arthrodis* sp., Tenebrionidae, Coleoptera

Symptom of damage: Yellowing and gradual wilting of entire plants.

Nature of damage: Grubs feed on the roots of rainfed crop.

Adult: Black coloured shiny beetle.

5. Red hairy caterpillar, *Amsacta albistriga*, Arctiidae, Lepidoptera

6. Black hairy caterpillar, *Estigmene lactinea*, Arctiidae, Lepidoptera

7. Wingless grasshopper, *Neorthacris simulans*, Acrididae, Orthoptera