

I. BORERS

1. **Shoot fly:** *Atherigona varia soccata*: Anthomyiidae: Diptera.

Symptom of attack: Dead hearts or drying of central shoots or production of profuse side tillers in main plants.

Nature of damage: The maggots bore into the shoot of young plants, a week after germination to about one month and as a result the central shoot dries up. If the plants are attacked at the initial stages the mother plant may produce profuse side tillers, but the tillers also may be attacked. The infestation often goes as high as 60%. The high yielding hybrid varieties are severely attacked. In South India, crop is damaged during October to December as also in summer.

Egg: Whitish eggs are laid singly on the under surface of the leaves which are about one week old.

Maggot: The maggots are yellow in colour migrate to the dorsal surface of the leaf, enter the space between the leaf sheath and the axis and make a clear cut through the tightly rolled sheaths and damages growing point. The growing points of the plant die and decay on which the maggots feed.

Pupa: Pupation takes place inside the stem itself.

Adult: The adult is a small dark fly. Female fly has whitish grey head and thorax, while the abdomen is yellowish with paired brown patches. Male is darker in colour.

2. **Stem borer:** *Chilo partellus*: Crambidae: Lepidoptera

Symptoms of attack: Presence of circular holes on the unfolded leaves and dead hearts in the early stages are the main symptoms. The boreholes may be visible in contrast to the dead heart caused by the stem borer. When grown up plants are attacked the symptoms will not be quite visible.

Nature of damage: The caterpillar bores into the stem and feeds on the central shoot. There may be more than one caterpillar in a single plant. In early stages, the caterpillars make circular holes on unfolded leaves and later central shoot dries up producing dead heart. Later it acts as an internode borer and is found till the time of harvest. Young cobs may also be attacked. Yield is affected much and the quality of the fodder is also reduced. The damage caused to the crop by this pest was estimated to range between 70 – 80%. Egg: Eggs are yellowish in colour, flat and oval, laid on the underside of the leaves, near the midrib.

Larva: The larva is pale white with black dots and brown head. The newly hatched caterpillars migrate to the top of the plant and enter the stem or it mines in the midrib or bores into the stem near the node and feeds upwards. The larvae remain dormant in winter and hibernate. A caterpillar is dirty white with a brown head and thorax. There are four longitudinal stripes on its dorsal surface.

Pupa: Pupation takes place inside the stem.

Adult: Moth is medium sized and straw coloured. Male has pale brown forewings provided with dark brown scales forming a dark area along the coastal margin. Hind