Applied Entomology

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Alamy A160PA

1. **Stem borer: *Chilo zonelus*: Lepidoptera)**

Distribution and status: India, Pakistan, Sri Lanka, Indonesia, Iraq, Japan, Uganda, Taiwan, Sudan, Nepal, Bangladesh and Thailand.

Host range: Maize, sorghum, sugarcane, bajra, rice, *Sorghum halepense*, finger millet, etc.

Damage symptoms: It infests the crop a month after sowing and the damage persists up to emergence of ear heads. Central shoot withering leading to "**dead heart**" is the typical damage symptom. Bore holes are visible on the stem near the nodes. Young larva crawls and feeds on tender folded leaves causing typical "**shot hole**" symptom. Affected parts of stem may show internally tunneling caterpillars.

The adult moth is medium in size and straw coloured. It lays about 300 scale-like flat oval eggs in batches on the under surface of leaf near the midrib. The incubation period is 2-5 days. The larva is yellowish brown with a brown head and the prothoracic shield measures about 25 mm long. The larval period is 28 - 50 days with seven instars. It pupates inside the stem and emerges in 7-10 days through the larvae's entry holesas as adult. The total life cycle is completed in 30 to 40 days.

Management

The stubbles should be ploughed up during winter and burnt to destroy the hibernating larvae.

Grow resistant cultivars like E 302, E 303, IS 2205, ICSV 700 Dead hearts should be pulled out and used as fodder or buried in manure pits.

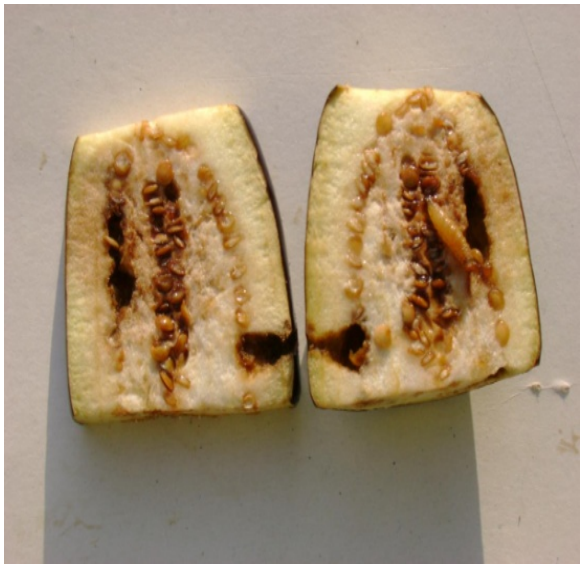
Sow lab lab or Dolichos as an intercrop in the ratio of 4:1 to minimise the stem borer damage. Set up light trap till midnight to attract and kill the stem borer moths.

Bio-control agents *viz.,Trichogramma chilonis* (egg parasitoids) *minutum*, *Bracon chinensis* and *Apanteles flavipes*, (larval parasitoids) should be encouraged.

Mix any one of the **following insecticides** with sand to make up the total quantity of 50 kg and apply in the leaf whorls. Phorate - 10 G 8 kg, carbofuran 3 G 17 kg, endosulfan 4D 25 kg or spray endosulfan 35 EC 750 ml (or) carbaryl 50 WP 1 kg (500 L spray fluid/ha).




JOWAR STEM BORER



Brinjal fruit borer


Batocera rufomaculata (De Geer)
malaeng.com


dreamstime.com

Dysdercus cingulatus

Dysdercus cingulatus is a species of true bug in the family Pyrrhocoridae, commonly known as the red cotton stainer. It is a serious pest of cotton crops, the adults and older nymphs feeding on the emerging bolls and the cotton seeds as they mature, transmitting cotton staining fungi as they do so

Dysdercus cingulatus grows to a length of 12 to 18 mm (0.47 to 0.71 in). It is mainly red but has a white collar and three black spots. It is closely related and very similar to *Dysdercus koenigii* but *D. cingulatus* is slightly larger and the femora have varying amounts of black while *D. koenigii* has completely red femora

Dysdercus cingulatus occurs in Sri Lanka, northeastern India, Bangladesh, Thailand, the Philippines, Sumatra, Borneo, Papua New Guinea and northern Australia.

As well as cotton (*Gossypium*), *Dysdercus cingulatus* feeds on a number of other crop plants including okra (*Abelmoschus esculentus*), muskmallow (*Abelmoschus moschatus*), hibiscus, white jute (*Corchorus capsularis*), citrus and maize (*Zea mays*). It also attacks trees including silk cotton tree (*Bombax ceiba*), kapok (*Ceiba pentandra*), teak (*Tectona grandis*) and the portia tree (*Thespesia populnea*).

Like other true bugs, *Dysdercus cingulatus* sucks fluids from its host plants. The only part of the cotton plant affected by this pest is the flower and the seed capsule or boll. As this develops, the insect thrusts its rostrum between the carpels and sucks fluids from the still soft seeds inside. Micro-organisms are admitted in the process and may make the boll contents rot or the lint become discoloured. Meanwhile, the seeds wither, the fibres may fail to expand and the boll may abort.[3] When the seeds of a host plant ripen and it becomes unsuitable, the adult insects migrate to new host plants of the same or different species. While away from their hosts, they feed on nectar and fruit of non-host plants, and can survive for several days without food. They seem fond of citrus fruits, but this may merely be because there are often citrus plantations in close proximity to cotton fields.

Thank You