

Spotted stem borer (*Chilo partellus* Swinhoe)

Biology

- Adult moths have pale yellow forewings with a few dark spots and white hind wings
- Egg clusters (white to dark-yellow) and young larvae are found greyish white in seedlings at leaf junction.
- The adult moth lays egg batches on the upper half of leaf blades
- During the vegetative stages deadhearts or dead tillers that can be easily pulled appear
- Presence of whiteheads during reproductive stage with emerging panicles being whitish and unfilled/empty



Fig 1. Moth of stem borer (IRRI Rice Knowledge Bank)



Fig 2. Stem borer's egg cluster and young larvae on leaf (A. Khashaveh)

Geographical Distribution

- Found in rain fed lowland and irrigated rice. In Kenya it has been reported in (Ahero, Bunyala, Kirinyaga, Kisumu, Kilifi, and Kwale Counties), Tanzania (Morogoro, Kilimanjaro, Arusha, Mbeya, Moshi) and Uganda (around lake Kioga, Buguri, butalenja and Iira districts).

Damage on rice crop

- Tiny holes on the nodes, base and stems of young plants
- In early damage, centre part of rice plant changes to yellow and the plant will start tillering.
- Presence of deadhearts or dead tillers at vegetative stages
- Fecal materials and larvae (5-25 mm, yellow to pale pink) inside the stems
- Whiteheads damage during grain filling with emerging panicles being whitish/unfilled or empty
- Use chemical control when 2-4% of plants are damaged



Fig 3. Symptoms on growing tips (IRRI Rice Knowledge Bank)



Fig 4. White head at harvest (IRRI Rice Knowledge Bank)

Management Strategies

1. Cultural Control

- Synchronized rice planting to escape stem borer
- Apply calcium silicate at 1000/ha to strengthen stem tissues
- Submerge eggs by keeping stem bases under water
- Destroy alternative host plants such as rice ratoon rice crop, volunteers, wild red rice on bund

Management Strategies

- Apply correct amounts of nitrogen in 3 splits at basal, tillering and panicle initiation
- Plant tolerant cultivars such as BW 196• SC213, Trenasse.
- Direct seed for the crop to escape attack
- Handpick and destroy egg masses in seedbed and transplants
- Cut and burn leaf-top to reduce carry-over of eggs from seedbed to field
- Harvest rice at ground level and remove or burn infested residue to kill overwintering larvae.
- Raise level of irrigation water to submerge eggs deposited on lower parts of plant
- Use sex pheromone (Selibate Cs, 40 g/ha/100 microtubes/ha) immediately after transplanting to disrupt mating of moths

2. Biological control

- Apply *Bacillus thuringiensis* based products to control young larvae

3. Chemical control:

- Spray diazinon (Diazinon granola at 15 kg/ha or Lambda-cyhalothrin 17.5g/l (Tata Umeme 2.5 EC, Duduthrin 1.75EC, Duduthrin super EC, Kingcode 5% EC, Pentagon 5% EC, Karate) or deltamethrin 25g/l (Decis 2.5 EC, Deraphon GR) or Acetamiprid (Twiga ace 20 SL at 8mls/20litrs). Apply once per season