



Pest Control No. TPC7

Spotted stalk borer, *Chilo partellus*

The spotted stalk borer is a pest in the coastal provinces of East Africa, Sudan, Malawi, India and Thailand. It is a pest of hot lowland areas and is seldom found above an altitude of 1500m.

Host

The spotted stalk borer is a pest of maize, sorghum, bulrush, millet, sugarcane and rice.

Symptoms

Young plants are killed by the larvae boring into the stem and killing the growing point. The leaves die and can be pulled out easily. In older plants the top part of the stem usually dies due to the boring of the caterpillars into the stem.

Description of pest

The mature caterpillar is 2.5cm long. It is a yellow-brown colour with four stripes down its back. It has a brown head.

Life cycle

The eggs are flattened, oval and scale-like and about 0.8mm long. Usually 50 to 100 eggs are laid on the underside of the leaf near the main vein. The larvae hatch after 7 to 10 days. The larvae crawl to the top of the plant where they eat through the stem. The larval development takes 28 to 35 days. It has four stripes down its back. Then the caterpillar pupates in a hole in the stem for 7 to 10 days. The moth emerges from the stem. It has a 20 to 30mm wingspan.

The male has pale brown forewings with dark brown scales forming a line on the tips of the wings. The hindwings are pale yellow. The female is much lighter than the male. The forewings are pale brown and the hindwings are almost white. The total life cycle takes about 29 to 33 days and there are at least 6 generations per year.

Prevention and control

Light traps: Light traps can provide useful information about the population of moths and therefore of caterpillars. Light traps help to predict if there is going to be an outbreak. A tripod made of wooden poles (bamboo) is constructed with a lantern (kerosene) hanging in the middle over a bowl of water. The lantern is a fire hazard so the tripod must be secure, and the lamp must be hung so that the wood does not catch fire.

Crop rotation: This separates the pest in space and time from its host plant. Pests life-cycles are interrupted by depriving them of their food source. It is best to rotate crops which have few common enemies.

Legumes: Growing a maize-cowpea mixture reduces the incidence of the maize stalk borer.

Field hygiene: After a severe outbreak, stubble should be ploughed into the soil or burnt to kill any remaining larvae.

Cow urine: Collect urine and stand for 2 weeks in sunlight. 1 part urine to 2 parts water is a general guideline for killing caterpillars but the farmer can experiment (care should be taken to not burn tender leaves with too high a concentration).

Plant preparations

Neem (*Azadirachta indica*): Native to India, *Azadirachta indica* is now distributed throughout SE Asia, East and sub-Saharan Africa. Fallen fruits are collected from underneath the trees. The flesh is removed from the seeds and any remaining shreds washed away. The seed is carefully dried in airy conditions (in sacks or baskets), to avoid formation of moulds. When needed, the seeds are shelled, finely grated, then soaked overnight in a cloth suspended in a barrel of water. There should be 25 to 50 g of powder per litre of water. This solution is then sprayed on infested plants.

Pyrethrum (*Chrysanthemum cinerariaefolium*): The white flowerheads possess insecticidal properties. Pyrethrum is most productive at altitudes of 1600 meters and ideally in semi-arid conditions where winters are cool. On richer soils the insecticidal properties are reduced.

Pick on a warm day when the flower are fully open. Then pile up into small heaps in the sun to warm through. Spread out to dry on thick mats in a shady area. If they are to be stored, they need to be kept in an air-tight container in the darkness. Light reduces the effectiveness of the flowers. Pyrethrum is a contact poison, it repels pests and acts as an antifeedant.

Pyrethrum liquid: Mix 1 to 1.5kg pyrethrum flowers with 3kg liquid soap and 100 litres water. Strain through a sieve or cloth and use immediately as a spray. The soap increases the effect of the pyrethrum four times.

Ryania (*Ryania speciosa*): The most useful parts of this plant are the roots and the stalks. Ryania acts as a contact and stomach poison. The effects of ryania seem slow but eating and breeding should soon stop. It has longer lasting properties than pyrethrum as it lasts in the field from 5 to 9 days.

Ryania powder: Grind dried ryania roots, stalks and leaves. Mix with just under half the amount of talc or clay. Sprinkle over plants one week after the moths start to emerge.

Ryania spray: Mix 30 to 40g of ryania powder with 7 to 8 litres of water and filter through a fine cloth. Spray every 10 to 14 days against the caterpillars.

Note: The timing of any kind of spray is crucial. Spray before the moths lay their eggs or spray caterpillars when they are at their most vulnerable, that is feeding at the base of the leaves.