



Pest Control No. TPC5

African armyworm, *Spodoptera exempta*

The African armyworm is widespread throughout Africa, Asia and Western Australia. It is not a serious pest except in outbreak years. Outbreaks often follow late rains in the hot season.

Host plants

African armyworms cause damage to cotton, barley, oats, wheat, maize, millets, sorghum, soyabean, sugar cane, grasses, citrus plants, beans, okra, cabbage, cucumbers, marrows, potatoes and tomatoes.

Symptoms

Caterpillars feed on the leaves of cereals and grasses, leaving holes. The adult caterpillars drop to the ground if disturbed.

Description of pest

The caterpillar develops from grey-green with white-yellow stripes down its back when small, to black with thin blue lines down the middle of the back and yellow-green lines outside the blue lines when fully grown. The caterpillar measures 2 to 3cm long.

Life cycle

10 to 300 eggs are laid by an adult female moth, on the leaves. The eggs are white and become dark brown just before hatching. Depending on temperature the eggs hatch after 2 to 5 days.

The caterpillar is grey-green at first, becoming black with green undersides when fully grown. The head is black with a characteristic V mark. As described above the caterpillar has coloured markings on its back. The caterpillars crowd together, often moving in the same direction, in search of food, hence the name 'armyworm'. The caterpillar stage of its life lasts 14 to 32 days. The caterpillar buries itself in the ground to pupate. It builds a cocoon of silk and stays in it for 7 to 21 days. It then emerges as a grey-brown night-flying moth with pale hindwings and a small oval white mark on the forewings. The wingspan is roughly 28mm.

An outbreak is more likely to occur if crops have been sprayed with high quantities of nitrogen as this causes green, sappy growth which is very attractive to armyworm caterpillars.

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.

Beneficial insects: Many animals, birds and insects prey on the African armyworm at different stages of its life cycle. These natural enemies should be encouraged by maintaining natural surroundings with plenty of breeding places for them, including trees and shrubs. Night birds and bats feed on the African armyworm moths, and lacewings, wasps, parasitic wasps and spiders eat the caterpillars.

Areas of natural habitat: Avoid burning and overgrazing of grasslands which are the natural habitat and food store of the caterpillars. Burning often causes outbreaks because as soon as temperatures rise, eggs are laid in large quantities on the fresh new grass. Also if their natural habitat and food is unavailable they will attack other crops.

Traps: The construction of traps is most useful for tree nurseries and seed beds. A trench about 60cm wide and 45cm deep is dug along the boundaries of the field or garden. The armyworms and other marching caterpillars fall into the trench and cannot crawl out. They can be killed by rolling a log of wood over them. They can also be killed by filling the trench with straw or similarly flammable material and setting alight.

Plant preparations

Neem (*Azadirachta indica*): 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 mould. When needed, the seeds are shelled, finely grated, then soaked overnight in a cloth suspended in a barrel of water. There should be 2 to 50g 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 above 1600 meters and ideally in semi-arid conditions where winters are cool. On richer soils the insecticidal properties are reduced.

Pick the flowers on a warm day when the flowers are fully open. Then pile up into small heaps in the sun to warm through. Then 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 dark. Light reduces the effectiveness of the flowers.

Pyrethrum powder: Grind flowers to a dust. Use pure or mix with a carrier like talc or lime. Sprinkle over infested plants.

Pyrethrum liquid: Mix 20g pyrethrum powder with 10 litres water. Soap can be added to make the substance more effective but it is not vital. Apply immediately as a spray.

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