

Pacific Pests, Pathogens and Weeds - Online edition

Maize Asian corn borer (115)

Common Name

Asian corn borer

Scientific Name

Ostrinia furnacalis

Distribution

Asia, Europe, Oceania. It is recorded from Australia, Guam, Federated States of Micronesia, Northern Mariana Islands, Papua New Guinea, and Solomon Islands.

Hosts

Maize, including sweet corn, ginger and sorghum are the main hosts, but also found on capsicum and sugarcane, and more recently a pest of cotton. It is recorded on maize from Solomon Islands.

Symptoms & Life Cycle

Eggs are laid in groups at the base and underside of leaves. They hatch after 3-4 days and the caterpillars go through five stages. The caterpillars are pink-brown with spots on the back (Photo 1). In the early stages the caterpillars feed in the whirl of leaves, but as they grow they move to the tassel (the male flowers) and then into the ear, feeding on the silk (female flowers) and kernels. The late stages bore into the stalks to feed. After 3-4 weeks of feeding the caterpillars form pupae within the stems; this stage lasts 7-9 days before the moth emerges (Photo 2).

The female moth lays up to 1500 eggs. The female is pale yellow brown with irregular bands across the wings; the male is darker. The wingspan is 20-20 mm; females are slightly larger than males. The moth is a strong flyer.

Impact

This is an important pest, with caterpillars doing the damage. They bore holes into the stems and cobs, and feed on the silk as well as the kernels. The mature caterpillars commonly feed on the stalks. Frass is seen around the holes. The leaves may wilt above the entry holes.

Detection & inspection

Look for plants that are wilting. Look for small piles of frass on the stems or cobs. If there are entry holes, open the stem and cob (Photo 1) and look for the pink caterpillar with pink-brown spots on the back.



Photo 1. Caterpillar of the Asian corn borer, *Ostrinia furnacalis*, inside a maize cob. The caterpillars are pinkish-brown.



Photo 2. Adult, Asian corn borer, *Ostrinia furnacalis*.

Management

IPM strategies have been used to manage this pest, especially in the Philippines. However, they are complex, and better suited to commercial plantings. They involved scouting to check the number of caterpillars per plant, the use of a microbial pesticide, Bt or *Bacillus thuringiensis* subsp. *kurstaki*, release of predatory earwigs, the use of moderately resistant varieties, sanitation and chemical pesticides.

NATURAL ENEMIES

There are a number of natural enemies of *Ostrinia* of which the egg parasitoids, *Trichogramma* species, are reported to be the most efficient. Within the Pacific island countries, they are reported from Guam, Northern Mariana Islands and Papua New Guinea. *Trichogramma chilonis* is the most important parasitoid in Guam, but without other control measures it cannot keep the pest below economic threshold levels. No larval or pupal parasites have been found that help to control populations of the Asian corn borer.

CULTURAL CONTROL

Remove the tassels from 75% of the plants; this i) removes the caterpillars from the plants, and ii) takes away pollen that would otherwise have fed the caterpillars.

RESISTANT VARIETIES

Resistant varieties have been selected/bred in a number of countries, so check if they are available in your country.

CHEMICAL CONTROL

Synthetic insecticides are not recommended as they interfere with the parasitoids that control *Ostrinia furnacalis*.

Biopesticides. Neem (water extracts from seed kernels) has been used in trials in Papua New Guinea and found to be effective. The research there found that removing the tassels from 75% of the plants, release of *Trichogramma plasseyensis*, an endemic species, and one application of neem gave satisfactory control of *Ostrinia furnacalis*.

When using a pesticide (even a biopesticide), always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval. Recommendations will vary with the crop and system of cultivation. Expert advice on the most appropriate pesticide to use should always be sought from local agricultural authorities.

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Information from CABI (2012) *Ostrinia furnacalis* Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/38026/>); and *Ostrinia furnacalis*. Wikipedia. (https://en.wikipedia.org/wiki/Ostrinia_furnacalis); and from Insect Images (2018) Asian corn borer *Ostrinia furnacalis* Guenee. (<https://www.insectimages.org/browse/subthumb.cfm?sub=14436&order=131>). Photo 2 Alma Solis, Systematic Entomology Laboratory, ARS USDA, Bugwood.org.

Produced with support from the Australian Centre for International Agricultural Research under project PC/2010/090: *Strengthening integrated crop management research in the Pacific Islands in support of sustainable intensification of high-value crop production*, implemented by the University of Queensland and the Secretariat of the Pacific Community.

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