

UC Pest Management Guidelines

AVOCADO

AMORBIA (Western Avocado Leafroller)

Scientific Name: *Amorbia cuneana*

(Reviewed: 7/01, updated: 7/01)



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DESCRIPTION OF THE PEST

Most avocado groves in California have populations of amorbia. Occasionally, amorbia populations increase dramatically and cause severe fruit damage. Although the insect appears to prefer avocado as a host plant, it is also found in citrus.

Adult female moths lay light green, [oval-shaped eggs](#), overlapping and shinglelike, in flat masses of 5 to 100. Eggs are generally laid on upper leaf surfaces close to the midrib. As larvae develop within eggs, the egg mass darkens, signaling that larvae will soon emerge, usually 13 to 15 days from the time eggs are laid. Hatched egg masses appear as whitish patches on leaves.

[Newly hatched larvae](#) are yellowish green and gradually turn darker green as they reach maturity. Amorbia larvae roll and tie leaves together with silken web. This forms a shelter or nest in which the larva feeds on leaves and fruit and is protected from most pesticide applications. Sometimes, larvae spin silk between fruits that touch each other. If disturbed, larvae wiggle violently and fall to the ground. As the larvae develop, they go through five stages (instars), each larger than the previous stage. Full-grown larvae are 0.75 inch (1.8 cm) to slightly over 1 inch (2.5 cm) long.

Occasionally, a similar but less important avocado worm pest, the orange tortrix (*Argyrotaenia citrana*), may also be found in the grove. [Orange tortrix larvae](#) can be distinguished from amorbia by their size and color pattern: full-grown tortrix larvae will not be over 0.6 inch long (1.5 cm), and will not have amorbia's [short dark horizontal line](#) on the thorax just behind the head and above the first pair of legs.

Larvae pupate in leaf rolls and form pale green pupae that are 0.5 to 0.75 inch (1.2-1.8 cm) long. [Pupae](#) gradually turn tan and at maturity become brown. The pupal stage lasts about 17 days before adult moths emerge.

[Adult moths](#) are bell shaped and have a wingspan of about 1 inch (2.5 cm). Though considerable color variation occurs with both sexes, the forewings of a typical female are rusty tan, while those of the slightly smaller male are tan, with a triangular dark mark midway on the outer margin of the wings. Adults are active only at night. Female moths lay 400 to 500 eggs during 2 to 3 weeks.

DAMAGE

Young amorbia larvae typically feed only on the surface of avocado leaves, leaving a thin brown membrane or skeleton of leaf veins. Mature larvae consume the whole leaf, either starting at the leaf edge or in the center (as does the omnivorous looper). Often young larvae bind new terminal leaves together and feed within them. As terminals develop and unfold, feeding damage is revealed. Mature avocado trees can tolerate considerable leaf damage by amorbia larvae without severe effects on tree growth or fruit yield.

Fruit damage occurs where larvae web leaves against fruit, or where webs are made between touching fruit. In these protected sites larvae feed on fruit skin and cause [scarring](#), which, if severe enough, causes downgrading or culling. White sugary exudates are often seen near feeding damage.

BIOLOGICAL CONTROL

The egg, larval, and pupal stages of amorbia are generally heavily parasitized by a variety of beneficial insects. One of the most effective parasites of amorbia eggs is the tiny wasp, [Trichogramma platneri](#). Amorbia egg masses that appear black have probably been parasitized by this beneficial wasp. These wasps are commercially available for release in orchards. A [tachinid fly](#), which is similar in appearance to the common housefly, as well as several parasitic wasps, attack the larvae. Small brown pupal cases of tachinid flies are often found near the larger parasitized amorbia pupal cases. Beneficial parasites play a major role in keeping amorbia populations below economically damaging levels in most California avocado groves. A naturally occurring nuclear polyhedrosis virus can also control larvae but causes epidemics only when larval populations are high.

ORGANICALLY ACCEPTABLE METHODS

Biological control, including the release of *Trichogramma* parasites, and sprays of *Bacillus thuringiensis*.

MONITORING and MANAGEMENT DECISIONS

Monitor larvae in late spring by looking for webbing and leaf rolls in young foliage and feeding damage on young and mature fruit located on the outside of the canopy. There are no established thresholds for spray control. Monitor parasites several times to determine if their populations are increasing. If they are, the amorbia population will decrease. Spraying with malathion, methomyl, or carbaryl often leads to outbreaks of other pests and is not recommended.

TREATMENT

Pesticide (commercial name)	Amount/Acre	P.H.I.+ (days)
A. TRICHOGRAMMA PLATNERI PARASITES#		0
COMMENTS: Make at least 2 releases a week apart during the period of		

peak egg laying (as determined by pheromone traps and visual inspection). Place parasite egg cards on at least 4 trees/acre for a total minimum release of 100,000 parasites/acre/season.

B.BACILLUS THURINGIENSIS#

(various products)

Label rates 0

COMMENTS: Restricted entry interval: 4 hours. Effective when used to control early instars of the worm.

+ Preharvest interval. Do not apply within this many days of harvest.

Acceptable for use on organically grown produce.

PRECAUTIONS

PUBLICATION



UC IPM Pest Management Guidelines: Avocado

UC ANR Publication 3436

Insects and Mites

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