

UC Pest Management Guidelines

AVOCADO OMNIVOROUS LOOPER

Scientific Name: *Sabulodes aegrotata*
(Reviewed: 7/01 updated: 7/01)



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DESCRIPTION OF THE PEST

Omnivorous loopers are common in many avocado groves, generally in low numbers, unless there has been an upset caused by broad-spectrum chemicals for the control of other pests, such as [greenhouse thrips](#). The omnivorous looper is also called an inchworm or measuring worm. The name "looper" comes from the crawling or looping movement of the larva as it extends its forelegs outward and then draws up the rear legs, creating [a loop](#). Larvae feed on at least 36 species of plants but avocado appears to be the only crop severely damaged.

All stages of this insect may be found in low numbers in winter. As temperatures increase in spring, populations increase. [Adult moths](#) live 2 to 3 weeks. Females lay 200 to 300 pale green, barrel-shaped eggs in clusters of 3 to 80 on the undersides of leaves. In about 2 days the eggs turn [rusty brown](#). Eggs have a ring of tiny projections or tubercles around one end and hatch in 8 to 9 days. [Hatched eggs](#) are transparent and easily distinguished from unhatched eggs.

Newly hatched larvae are pale yellow and about 0.06 inch (1.5 mm) long. [Full-grown larvae](#) are 2 to 2.5 inches (5-6.3 cm) long and 0.25 inch (6 mm) wide. Larvae vary in color from yellow to pale green or pink, with yellow, brown, black or green stripes on the sides and back; various dark markings are also present. The

head is gold-colored. In addition to the usual three pairs of legs near the head, this looper has two pairs of prolegs near the rear end of its body. The entire larval period averages 6 weeks.

Larvae may be found singly on leaf edges or on succulent twigs (especially terminal growth shoots), or in groups or singly between two leaves that are tied together with silk. As with adult moths, larvae are most active at night. It is uncommon to have both omnivorous looper and [amorbia larvae](#) on the tree at the same time although their generations do overlap (omnivorous looper has three to four generations per year and amorbia has four to five). One way of distinguishing the two species is that omnivorous looper larvae drop on a silken thread from leaves when disturbed while amorbia larvae do not.

[Pupae](#) are 1 to 1.25 inch (2.5-3.1 cm) long and white when first formed. As the adult moth inside develops, its antennae, eyes and wings turn brown and can be seen through the pupal case. The pupal stage lasts 1 to 4 weeks. Pupae are usually found between two webbed leaves, or inside leaves that were rolled by mature larvae. When adult moths emerge, they have a wingspan of about 1.75 to 2 inches (4.3-5 cm). Wings are fawn-colored with a narrow black band running across the middle. Undersides of the wings and body are white. Adult moths are nocturnal; during the day they hide on the undersides of leaves or in shady areas on the bark. Moths are strongly attracted to security lights or other bright light sources. Larval infestations are often concentrated near trees adjacent to light sources.

Depending upon temperatures and humidity, the entire life cycle takes 9 to 11 weeks. There are five generations per year in the warmer southern parts of California.

DAMAGE

Leaf damage is especially evident on terminal shoot growth; its appearance varies depending on whether it was caused by young or old larvae. Very young larvae feed only on the leaf surface, leaving a characteristic brown membrane. Older larvae eat all the way [through the leaf](#), often leaving only the midrib and larger veins. Full-grown larvae can consume an entire leaf in 1 day. Mature avocado trees can tolerate considerable leaf damage without severe effects on growth or yield. Extensive feeding may reduce yield the following year.

Fruit damage can be caused by young or old larvae. If [young fruit](#) is fed on, its shape becomes distorted. When larger fruit are fed on, the fruit surface is [scarred](#), which may cause it to be downgraded.

BIOLOGICAL CONTROL

Several tiny wasps parasitize eggs and larvae of this looper. One wasp, [Trichogramma platneri](#), is commercially available for purchase and release. The pupal stage of the looper is often parasitized by a [tachinid fly](#) about the size of the common housefly. The tiny, dark brown pupal cases of the fly are often found alongside the larger looper pupal case. [Granulosis virus](#) frequently infect and kill looper larvae when populations become large. An epidemic results and the population rapidly declines within 1 to 2 weeks. [Spiders](#) also feed on loopers and are most abundant in orchard that have not been sprayed with a pesticide or subject to a freeze.

CULTURAL CONTROL

Lepidopterous larvae, such as omnivorous looper, [orange tortrix](#), and amorbis, are collectively called "avocado worms." An ideal environment for these worms is densely canopied trees in orchards where large trees form a continuous canopy of foliage. Pruning individual trees to open the canopy to light or removal of every other tree in a thinning pattern can reduce the severity of an avocado worm infestation.

ORGANICALLY ACCEPTABLE METHODS

Biological controls, including the release of *Trichogramma platneri*, cultural controls, and sprays of *Bacillus thuringiensis*.

MONITORING and MANAGEMENT DECISIONS

Monitor larvae throughout spring and summer, particularly from May through July, at 7- to 10-day intervals. Pheromone traps are commercially available and are used primarily to identify periods of peak flight activity. Shortly after peak flights, begin looking for larvae in leaf rolls and in areas where fruit touch each other, mainly on the south and east quadrants of tree. Also check for evidence of parasitism. If 15 healthy larvae are found per hour of search, treatment may be necessary, depending on whether the orchard has a history of egg and larval parasite activity. With higher levels of larvae, watch for evidence of a viral disease. Often an epizootic of a nuclear polyhedrosis virus will occur and the population will crash within 2 weeks. Diseased larvae cease feeding, become lethargic, and eventually liquify and then dry up in their nests. Bt sprays are the least disruptive to beneficials.

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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