

OMNIVOROUS LOOPER ON AVOCADOS IN CALIFORNIA

The authors: J. Blair Bailey, Extension Entomologist, Department of Entomology, and Michael P. Hoffmann, Staff Research Associate, Department of Entomology, Riverside.



Adult (moth). Photo by Max Badgley.



Mature pupa. Photo by Max Badgley.



Mature eggs. Photo by Max Badgley.



Feeding damage on leaves. Photo by M.P. Hoffmann.



Half-grown larva (worm). Photo by Max Badgley.



Feeding damage on fruit. Photo by Max Badgley.

Division of Agricultural Sciences
UNIVERSITY OF CALIFORNIA

PRINTED JULY 1979

LEAFLET
21101

The omnivorous looper, *SabuJodes aegrotata* (Guenee), is also called inchworm or measuring worm. The name "looper" comes from the crawling or looping movement of the larvae. The larvae feed on at least 36 species of plants but avocado appears to be the only crop severely damaged. A severe outbreak of this pest on avocados was first reported in California in 1949, and sporadic severe outbreaks have occurred since then. Today, loopers can be found in many avocado groves, but generally in low numbers.

Description

The omnivorous looper goes through four stages of development: egg, larva (worm), pupa, and adult (moth).

Egg. Pale green, barrel-shaped eggs are laid in clusters of 3 to 80 on the undersides of leaves. In about 2 days the eggs turn rusty brown. Eggs are shiny, with a ring of tiny projections or tubercles around one end; they hatch in 8 to 9 days. Hatched eggs are transparent and easily distinguished from unhatched eggs.

Larva (caterpillar or worm). A newly-hatched larva is pale yellow and about 1/16 inch long. As it develops it goes through five growth stages, each larger than the previous one. Full-grown larvae are 2 to 2 1/4 inches long and 1/4 inch wide; they vary in color from yellow to pale green or pink, with yellow, brown, black or green stripes on 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 pro-legs near the rear end of its body. The entire larval period averages 6 weeks. Larvae may be found singly on the edge of a leaf or succulent twig (especially terminal growth shoots), or singly or in groups hiding between two leaves which they tie to-

gether. As with adult moths, larvae are most active at night.

Pupa. The pupa is 1 to 1 1/4 inches long and pearly 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 from 1 to 4 weeks. The pupa is usually found webbed between two leaves, or inside a rolled leaf folded and webbed together by a full-grown larva.

Adult. The wingspan is 1 1/2 to 2 inches. Wings are fawn-colored with a narrow black band running across the middle. Undersides of the wings and body are whitish. During the day, adults may be seen clinging to the undersides of leaves or in shady areas on the bark of trees. They are active only at night.

Life History

All stages of this insect may be found in low numbers in winter; as temperatures increase in spring, populations usually increase. The adult moths live 2 to 3 weeks and during this time they mate and the female lays 200 to 300 eggs. Eggs hatch in 8 to 9 days. Larvae feed on fruit and foliage for about 6 weeks, and then pupate from 2 to 4 weeks. Depending upon temperatures and humidity, the entire life cycle is from 9 to 11 weeks. Apparently, there are five generations per year.

Damage

Leaf damage is especially evident on terminal shoot growth, but is also seen on other parts of the tree. Leaf damage caused by larval feeding varies depending on whether it is caused by the 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 a midrib and larger veins. A full-grown larva can consume an entire leaf in 1 day. Mature avocado trees can tolerate considerable leaf damage without severe effects on growth or yield, but extensive feeding may reduce yield the following year.

Fruit damage can be caused by feeding of young or old larvae. If the fruit is young and a larva feeds on it, possibly only one area on it will be damaged. This damaged area may heal over, but the shape of the fruit may be distorted. When larger fruit are fed on, damage is usually only to the surface but such fruit may be downgraded because of its appearance.

Biological Control

Several tiny wasps parasitize eggs and larvae of this looper. One of these wasps, *Trichogramma* sp., may be purchased from commercial insectaries. The pupal stage of the looper is often parasitized by a fly about the size of the common housefly (the tiny dark-brown pupal case of this fly is often found alongside the larger looper pupal case). Certain beneficial disease organisms, such as viruses or fungi, frequently infect and kill looper larvae. These beneficial parasites and pathogens usually play an important role in holding looper infestations below severely damaging levels in California avocado groves.