

Cooperative Extension

Omnivorous Leafroller (*Platynota stultana*)

The University of Arizona \$ College of Agriculture \$ Tucson, Arizona 85721 (part of the publication "Citrus Arthropod Pest Management in Arizona")

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DESCRIPTION AND LIFE HISTORY: The omnivorous leafroller feeds on a wide variety of fruit and ornamental trees, and many agricultural and horticultural crops. This small moth was observed infesting citrus in Tulare County, California as early as 1930. By 1950, it had reached pest status throughout Southern California. In 1953, some untreated groves suffered 70 to 80% fruit abortion due to heavy omnivorous leafroller infestations. In Arizona, the omnivorous leafroller is common, but is usually of economic importance on seedling citrus in nurseries.

The adult moth has a 2 to 2.5 cm wing span. The wings are of a fawn or rusty-brown color, and possess a prominent light spot on the coastal margins near the middle of the forewings, as well as other irregularly placed spots. The longevity of the adult is about ten days.

Egg laying begins in the spring, usually in February or March. Eggs are deposited on new foliage in clusters or masses with the individual eggs overlapping each other. Usually all the eggs laid by a single female on any one night comprise a single mass. Each female will lay from 100 to 600 eggs within a five-day period. The eggs are then covered by a clear adhesive material. These eggs are flat, elliptical in shape, somewhat transparent or greenish in color, and measure 1 x 65 mm. The eggs will hatch in 5 to 9 days depending on temperature.



Figure 39. The omnivorous leafroller feeds within rolled leaves and is a frequent pest in citrus nurseries.

There are five larval instars. Each larva positions itself along the midrib of the leaf and encloses itself by rolling the edge of the leaf over with the aid of silken threads. The larva feed within the rolled leaf and when most of the leaf is consumed will move to another leaf. The duration of the larval stage is 13 to 50 days depending on temperature. Pupation takes place within a rolled leaf. The pupal stage requires 4 to 9 days. In field observations in Arizona, it appears that there is a continuous population and this could involve about six generations per year.

DAMAGE: The omnivorous leafroller is a frequent pest of citrus nurseries in Arizona, but rarely reach damaging levels on mature trees. Spring insecticide application targeting thrips probably prevent omnivorous leafroller from becoming troublesome on bearing trees. However, in instances where large leafroller populations have occurred on mature trees, damage can stress trees causing them to drop fruit. Additionally, they will tie leaves to the fruit and feed on the rind, particularly under the button,

This document and others on citrus insect pests can be found at <http://cals.arizona.edu/crops/citrus/insects/citrusinsect.html>

causing scarring. Damage to young trees can retard growth.

MONITORING: Monitoring the omnivorous leafroller should be conducted from spring until fall. Trees should be inspected for rolled leaves which are indicative of omnivorous leaf roller. Although there are no economic thresholds for omnivorous leafroller, populations should not be allowed to become high on nursery trees.

CONTROLS

Cultural: There are no cultural practices that are commonly used to specifically impact omnivorous leafroller.

Biological: There are a number of predators and parasitoids that prey on omnivorous leafrollers, but they usually do not occur in sufficient number provide adequate control.

•**Predators.** Reduviidae, *Nabis* spp., and *Orius* spp. have all been noted preying on omnivorous leafroller in Arizona.

•**Parasitoids.** Parasitoids reported attacking omnivorous leafroller in Arizona include: *Apanteles* spp., *Goniozus platynotae*, *Meteorus dimidiatus*, *Angitia ferrugineliae*, and *Cremastus* sp.

Commonly used Chemicals:

•**Chlorpyrifos.** 28 day PHI at rates exceeding 3 lbs-ai per acre or 14 days PHI for rates of 3 lbs-ai per acre or less. Chlorpyrifos (LORSBAN) is an organophosphate that has demonstrated efficacy towards omnivorous leafroller. Chlorpyrifos is applied at an average rate of 4 to 6 lb-ai per acre. It is toxic to bees and should not be applied during daylight hours during bloom. Additionally, chlorpyrifos is toxic to predatory insects and mites, and parasitoids and will disrupt biological control. Do not apply more than 10 lbs-ai per acre per season. The restricted entry interval for chlorpyrifos is 1 day.

•**Methomyl.** 1 day PHI. Methomyl (LANNATE) is an oxime carbamate that is applied at rates of 0.45 to 0.9 lbs-ai per acre. Methomyl is a restricted use material. It kills beneficial insects, such as mites. Do not apply more than 2.7 lbs-ai per acre per crop. Do not make more than 4 applications per crop. The restricted entry interval for methomyl is 3 days.