

Diagnosing Tree, Palm and Shrub Problems: Olive Shootworm (*Palpita persimilis*) on Ligustrum (*Ligustrum japonicum*)

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Ligustrum japonicum is commonly planted in road medians and on commercial and residential properties. It is grown as a hedge or small multi-trunked tree. The plant is pruned frequently and typical tree height is about 12 feet tall.

Field Situation

Ligustrum has several problems. *Cercospora* leaf spot frequently infects it but in many cases does not necessitate its treatment. *Botryosphaeria* is a disease for which there is no treatment and often requires the removal of parts of the affected plant. A less frequent problem is caterpillar infested plants.

Several field visits were made at two sites with many frequently pruned *Ligustrum*. The chewed leaves and abundant frass on many plants indicated caterpillar damage. Several small white moths were seen flying from one of the plant. Caterpillars were collected and sent to the University of Florida Insect Identification Laboratory, Gainesville, and to FDACS Division of Plant Industry, Gainesville.

Insect Identification and Distribution

Adults were reared from the caterpillars and were identified as the olive shootworm (*Palpita persimilis*). Thus, August of 2015, was the first confirmation of this pest in Lee County. In Florida, the initial detection of *P. persimilis* occurred in July 2012 on *Ligustrum* trees in Sumter County. Other Florida counties having recorded their presence include Broward, Collier, Hillsborough, Miami-Dade, Monroe, Osceola and Pinellas.

Insect Description

Female moths deposit up to 200 eggs on the underside of leaves. The larvae are green with a pale yellow head and grow to a length of about 4/5 inch. The adult is a moth that has almost entirely white wings.

Life Cycle

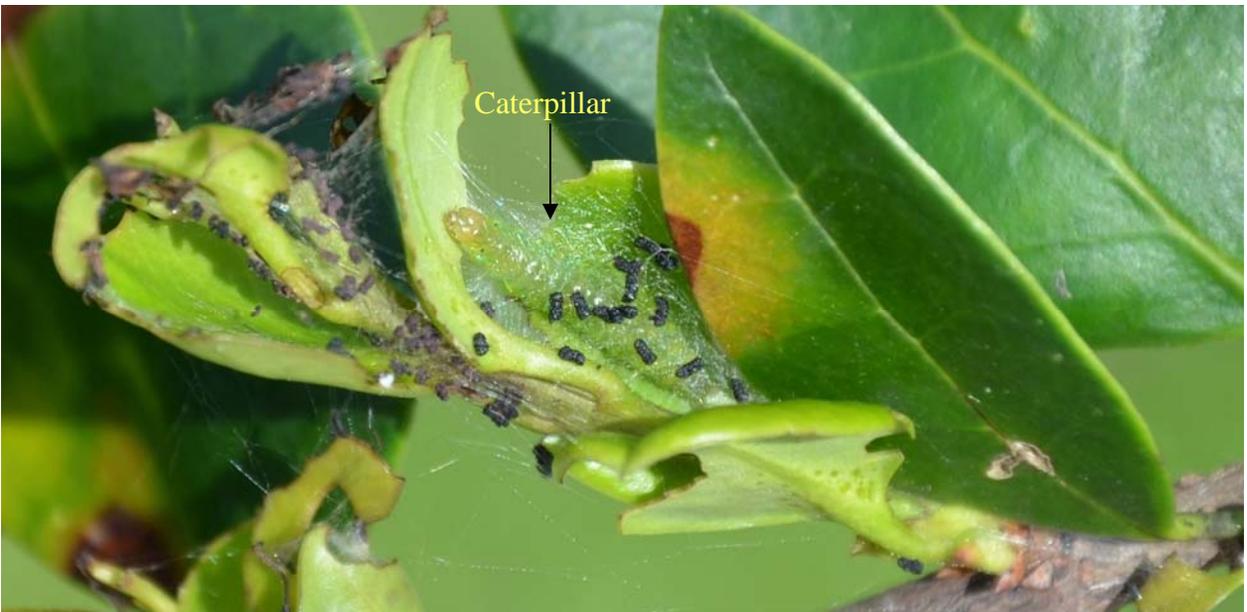
The number of days until egg hatch depends on temperature, ranging from 8 to 15 days. The larval stage lasts 30 to 45 days. Pupation usually occurs in crevices in the bark and last 10 to 20 days. Total generation time is 50 days in spring and 65 to 80 days in winter. High precipitation and humidity favor population growth. There may be five or six generations per year.

Feeding Habit

Younger larvae consume buds and tender leaves, and older caterpillars may eat older and harder leaves. The feeding causes leafless stems with tip diebacks. Furthermore, they build shapeless frass-laden nests by rolling and tying together stripped and skeletonized leaves with silk. Adults are active by day as well as by night. But being reclusive, they hide under and between the leaves of the host plant and are difficult to detect.



Damaged Ligustrum foliage and stems caused by olive shootworm caterpillars.



Olive shootworm caterpillar and frass.



Damage and frass



Juvenile caterpillar

Lyle Buss



Adult moth

Lyle Buss

Management

The caterpillars can be controlled by various insecticides. The Mode of Action classification number provides information for the selections and rotations of insecticides and acaricides. Selecting products with different modes of actions help to manage or prevent pesticide resistance by the targeted insect. Selection should be made outside a numbered group. For example, 1A and 1B are in the same numbered group and so another numbered pesticide group is required for proper insecticidal rotation. *Bacillus thuringiensis*, a microbial insecticide, is a bacterium that kills only Lepidopteran larvae. It has no toxicity toward beneficial insects.

Table 1. Some commonly used insecticides for the control of caterpillars and other ornamental insects.

Active Ingredient (Common name)	Mode of Action	Trade Names	Targeted Insects
Acephate	1B	Orthene	Broad Spectrum but particularly for aphids, caterpillars, leaf miners, thrips
<i>Bacillus thuringiensis</i>	11A	Able, Agree, Dipel, Thuricide, Javelin	Caterpillars
Bifenthrin	3A	Attain, Talstar, OnyxPro	Broad Spectrum
Carbaryl	1A	Bayer Advanced brands, Sevin, carbaryl	Broad spectrum
Malathion	1B	Malathion	Broad spectrum
Permethrin	3A	Astro, Bayer Advanced, Garden Safe, Sunniland and Spectracide brands	Broad spectrums including ants, aphids, beetles, bugs, caterpillars, mealybugs, sawflies, scales, thrips,
Pyrethrin	3A	Bonide and Natria brands	Broad spectrum
Spinosad	5	Conserve	Caterpillars, thrips

References

Hayden, J. and L. Buss. 2013. EENY-556. [Olive Shootworm, *Palpita persimilis*](#). UF/IFAS, Gainesville, Florida

Price, J., E. McCord, and C. Nagle. 2012. ENY-843. [Management of Insect and Mite Resistance in Ornamental Crops](#). UF/IFAS, Gainesville, Florida

Ornamental Plant Insects

[Bagworms on Palms](#)

[Braconid Wasps](#)

[Chili Thrips](#)

[Chili Thrips 2](#)

[Croton Scale Power Point](#)

[Erythrina Gall Wasp Power Point](#)

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[Snowbush Caterpillars](#)

[Tiki Hut Caterpillar](#)

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All pictures taken by Stephen H. Brown, except where indicated.

This fact sheet was reviewed by Lyle Buss, Entomologist, University of Florida; Doug Caldwell, Collier County Extension; Catharine Mannion, Tropical REC, Homestead; Peggy Cruz, Lee County Extension.

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