

## Insect Management in Oriental Persimmon <sup>1</sup>

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Interest in oriental persimmon production has increased in recent years from both homeowners and commercial producers. Nursery stock of astringent and nonastringent varieties are readily available. The large shiny green leaves make the tree valuable in the landscape as an ornamental. Trees grow and fruit best in central and north Florida. Astringent varieties grow best in south Florida. See Miller, E. P and T. Crocker (1991, Oriental persimmons in Florida, SS-FRC-003) for information on the culture and management of persimmons.

### **Insect Pests**

The persimmon rootstock is native American persimmon and the scion is Japanese. A few insect pests that attack the rootstock are familiar, those on the scion are often new. Persimmon is a subtropical fruit, growing across a wide range of environments that can be very different from year to year. On the limits of the range and under extremes of temperature the plant will be stressed. Stress will change the persimmon's susceptibility to pests, particularly borers. Also, species of pests will be different in

different parts of the growing range: south Florida may have fruit flies as fruit pests, etc.

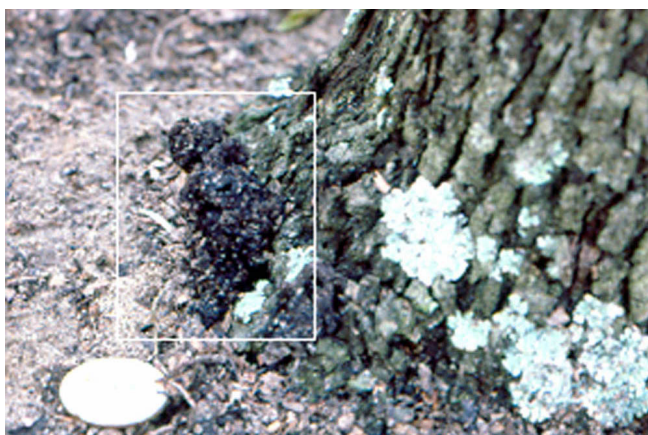
Generally, persimmon has relatively few insect pests. Scale, persimmon psylla, twig girdlers and borers attack the tree or leaves while plant and stink bugs may attack the fruit. Scales, predominantly white peach scale, attack the wood on the branches and trunk. Small infestations may be removed by pruning, larger infestations should be treated with a dormant or summer oil or with a conventional pesticide during the growing season targeted to the crawler stage of the scale. Two applications 7-14 days apart may be necessary to control large infestations. Small infestations may be removed by pruning.

Several species of wood-boring insects may attack the roots, trunk and branches of persimmon. Persimmon clearwing borer is a native pest of the American rootstock. The adult moth emerges in early spring and has one generation per year. Pupal cases left by emerging adults can be found at the base of the tree near the root crown (Figure 1).

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**Figure 1.** Persimmon borer pupal case protruding from the root.

The fungus, *Botryosphaeria dothidia* produces symptoms in many species of fruit trees termed gummosis. In persimmon, the fungus produces discoloration of the wood and deep, elongate scars in the bark. Metallic wood borers (Family Buprestidae), whose larvae are known as flatheaded borers, place their eggs along the scars. The larvae then enter the bark and girdle the scaffold limbs by feeding in the phloem or inner bark tissue. The combination of the fungus and the metallic wood borer damage may lead to severe losses of scaffold limbs. The adult metallic wood borers are present for most of the growing season and are difficult to manage. Control of borers is centered around good management practices. It is very important that healthy trees are used to initiate the orchard and maintained.

Persimmon psylla is the primary leaf pest and is found attacking newly forming leaves in spring. Infested leaves appear crinkled and malformed (Figure 2). The white powdery covered nymphs and black bodied adults are found feeding inside the mishapen leaves which makes control difficult. Psylla infestations stunt the growth of shoots on young trees. Control with conventional pesticides should be timed to the bloom stage.

Twig girdlers attack persimmon and a variety of tree species most notably hickory and pecan. During September and October the adult female deposits her eggs by piercing the bark below the buds on terminal twigs. After oviposition the female girdles the stem which may later fall to the ground. In so doing the beetle may transmit the wilt disease *Cephalosporium*



**Figure 2.** Central rolled leaf shows the damage from the persimmon psylla.

*diospyri*. Infested twigs should be gathered and destroyed.

Spring defoliators: Forest tent caterpillar will feed on new unfolding growth just after budbreak; scarab beetles, *Phyllophaga* spp., feed on leaves usually at night. Fall: fall webworms make large webs on several different tree species. These insects are generalist feeders that come into the orchard from surrounding hardwood trees.

Thrips reportedly attack fruit in the southern parts of Florida, Fuyu variety is especially susceptible.

Scales: Both soft and armored scale are pests. Soft species are: Indian wax, *Ceroplastes ceriferus*, Florida wax, *C. floridensis*, Brown soft scale, *C. hesperidium*, Acuminate scale, *Kilifia acuminata*, and European fruit leucanium, *Parthenoleucanium corni*. Armored scale species are *Hemiberlesia rapax*, Greedy scale and White peach scale, *Pseudaulacaspis pentagona*. All scale are controlled by the same method: monitor and when the eggs and crawlers (immatures) are present use oil or other insecticide in two applications about 10-14 days apart. Dormant oil will also control scale.

Stink bugs attack the fruit as it colors but the damage is confined to non-astringent cultivars. Off-white areas of the fruit just under the peel are indicative of attack from stink bugs.

Do not spray unless you have pests present, they were present last year or, as for example borers, you are fairly certain they will occur. Spraying may upset

the system. Pests like mites, leafminers and aphids often are induced by pesticide use which kills the natural enemies that usually hold them in check. Often the best strategy is to do nothing and let nature take its course.

### List of Pesticides Registered for Use on Persimmon

#### Ants:

- Amdro (ornamental)
- Insecta chlorpyrifos (non-bearing)
- Pyrenone Crop Spray

#### Aphids:

- Aza-Direct
- Bonide Rotenone/Pyrethrin
- Provado 1.6F
- Pyrellin
- Pyrenone Crop Spray
- Ringer-Aphid-Mite Attacker
- Safer Soap
- Talstar (non-bearing)

#### Beetles:

- Ferti-Lome Tree Borer Killer
- Pyrenone Crop Spray
- Whitmire PT 270 Dursban (dormant)

#### Caterpillars:

- Aza-Direct
- Biobit
- Bounce (non-bearing)
- Dipel 2X
- Javelin WG

- Pyrenone Crop Spray
- Ringer-Aphid-Mite Attacker
- Talstar (non-bearing)

#### Mites:

- Acme Lime - Sulfur Spray (non-bearing)
- Acramite
- Black Leaf Dormant Spray
- Bonide Rotenone/Pyrethrin
- Dimethoate 4F
- High Yield Dormant Spray
- Omite CR
- Pyrellin
- Ringer-Aphid-Mite Attacker

#### Scales:

- Black Leaf Dormant Spray
- High Yield Dormant Spray
- Orthorix (dormant)
- Provado 1.6F
- Ringer Soap
- Safer Soap
- Scalecide

#### Thrips:

- Bonide Rotenone/Pyrethrin
- Pyrellin
- Pyrenone Crop Spray

#### Whiteflies:

- Black Leaf Dormant Spray
- Bounce (non-bearing)

- High Yield Dormant Spray
- Provado 1.6F
- Pyrellin
- Pyrenone Crop Spray
- Ringer-Aphid-Mite Attacker