



TREES & SHRUBS

Stone Fruit Insects

no. 5.520

by W.S. Cranshaw and R.J. Zimmerman ¹

Quick Facts...

The most serious pest of stone fruit crops is the peach tree borer, which tunnels under the bark of the lower trunk.

Preventive insecticide sprays, timed for periods in summer when eggs are laid, provide good control of peach tree borer. There also are alternative cultural and biological controls.

Horticultural oils applied to stone fruits during the dormant season can be very useful for pest management of aphids and peach twig borer.

**Colorado
State**
University
Cooperative
Extension

Putting Knowledge to Work

© Colorado State University
Cooperative Extension. 3/02.
Revised 4/05.
www.ext.colostate.edu

Several insect pests attack stone fruit crops (peach, plum, cherry and apricot) in home plantings. The peach tree borer and leafcurling aphids can be serious problems in Colorado almost every year. Most other insect pests found on these plants typically do not occur in numbers damaging to home orchards and only occasionally require treatment to maintain plant health.

Peach Tree Borer

The peach tree borer (*Synanthedon exitiosa*) is the key pest of stone fruits grown in Colorado. The larvae tunnel into the base of trees, often just below the soil surface, and damage large areas of bark and cambium tissue so that trees are weakened and sometimes killed. Trees that grow poorly seem to be particularly susceptible to borers, but peach tree borer can attack even vigorously growing trees. Large droplets of ooze, mixed with chewed wood fragments, form at wound sites and are distinctive for peach tree borer injury. *Cytospora* cankers, produced by certain fungi, also are a common cause for production of ooze in stone fruits. Oozing associated with *Cytospora* produces clear gum and may be found on branches as well as the lower trunk area.

The peach tree borer larvae continue to feed and grow throughout the winter and early spring, as long as temperatures permit. They become full grown in late spring and form a pupal case made of chewed wood fragments. Within two weeks, the adult moths emerge as a type of “clearwing borer” moth that superficially resemble wasps.

After mating, female moths lay eggs on the bark, concentrating egg laying near existing wounds. Egg-laying activity may begin by mid-June and can continue into early September. After a brief period of feeding on the bark, the larvae tunnel into the tree, where they feed until the following spring.

Preventive sprays of insecticides, applied to coincide with periods when



Figure 1: Peach tree borer larva.

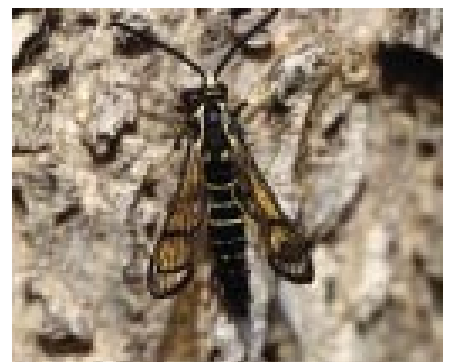


Figure 2: Peach tree borer adult male.

Common Disorders of Cherry

Leaves curled, undersides often with dark aphids:

Black cherry aphid

Upper surface of leaves chewed, often leaving main veins:

Pear slug

Leaves chewed and tent of webbing produced:

Eastern tent caterpillar, fall webworm

White powdery covering on leaves:

Powdery mildew

Small holes in leaves:

Coryneum (shothole) blight

Small red bumps on leaves (finger galls):

Eriophyid mites

Clear, amber ooze from bark:

Cytospora canker

Amber ooze mixed with sawdust, often near or below soil line:

Peach tree (crown) borer

Branch die-back:

Cytospora canker, peach tree (crown) borer

Small holes in bark of twigs, branches:

Shothole borers

Trees decline in vigor, leaves yellow or die with hot weather:

X-disease

Trees decline, root area shows decay:

Phytophthora root rot

Trees decline, pitting at graft:

Stem pitting virus

Tips of twigs die back, twigs tunneled:

Peach twig borer

Fruit damaged but not tunneled:

Bird damage

Fruit pit infested:

Cherry curculio

Fruit infested with white worms:

Western cherry fruit fly

Fruit swollen and hollow (chokecherry only):

Chokecherry gall midge

adults are laying eggs on the bark, are the standard control practice for peach tree borer. Certain formulations of carbaryl (Sevin), permethrin, and esfenvalerate are labeled for this purpose. These sprays are applied as drenching treatments to the lower trunk, usually beginning in late June or early July. One treatment usually is sufficient in lightly infested plantings. However, a second treatment, applied about one month later, may be needed in plantings where the peach tree borer is especially damaging and abundant. The use of pheromone traps baited with a lure made of the sex attractant of the female moth, can improve timing of sprays for peach tree borer control by indicating when adult moths are active.

Individual peach tree borers also can be killed manually in fall or early spring by digging them out of wounds or piercing them. This method, however, is rather tedious, and care should be taken not to further damage bark in the process.

Under some conditions insect parasitic nematodes can be used. These nematodes are applied as a drench to the lower trunk during periods in fall or spring when soil temperatures are at least 55 degrees F. The nematodes may then infect the borer larvae and kill them. Several garden catalogs and some nurseries sell these biological control agents. See 5.573, *Insect Control With Parasitic Nematodes*.

Aphids

Green peach aphid (*Myzus persicae*) and mealy plum aphid (*Hyalopterus arundinis*) commonly curl the new growth of stone fruit trees, sometimes seriously damaging the plant. Although leaves produced later, after the insect has left the plant, are healthy, the first flush of leaves may be so curled and distorted that they die or provide little food energy to the tree, reducing fruit production.

There are other aphids associated with stone fruit trees that do not cause such significant leaf-curling injuries. The black cherry aphids (*Myzus cerasi*) often build high populations on cherry leaves in late spring and produce abundant amounts of sticky honeydew. However, natural controls almost always can provide adequate control. There is no serious leaf distortion as with other aphids.

Aphids damaging to stone fruit trees spend the winter in the egg stage, near tree buds. Because of this habit, they can easily be controlled by use of horticultural oil sprays applied during periods when the trees are dormant (e.g., dormant oils). See fact sheet 5.569, *Insect Control: Horticultural Oils* for more information. After leaves emerge, there is no effective control for the leaf-curling species. In late spring, they leave the plant for their alternative summer hosts. Leaves produced after this will be normal. Aphids that do not curl leaves, such as the black cherry aphid, can be controlled by forceful hosing or by using several contact insecticides. (Note: Insecticidal soaps, useful for control of many aphid pests, should be used carefully on stone fruits because they may damage leaves, particularly those of cherry.)

Cherry Curculio/Plum Gouger

Two species of weevils or snout beetles damage stone fruits, particularly along the Front Range. The cherry curculio (*Tachypterellus consors* ssp. *cerasi*) attacks sour cherries and chokecherry. The plum gouger (*Anthonomus scutellaris*) is particularly common in the hard European plum varieties. Both insects spend the winter in the adult stage around the base of previously infested trees. In spring, about the time blossoming occurs, they move to the trees and feed on the buds and flowers. Later they feed on small fruit, producing puncture wounds. Wounded plums typically ooze sap. Eggs are laid in some of the fruit and the young beetle grubs develop on the pit of the fruit.



Figure 3: Leaf curling of peach.

Common Disorders of Peach

Leaves curled:

Green peach aphid

White powdery covering on leaves:

Powdery mildew

Small holes in leaves:

Coryneum (shothole) blight

Clear, amber ooze from bark:

Cytospora canker

Amber ooze mixed with sawdust, often near or below soil line:

Peach tree (crown) borer

Branches die-back:

Cytospora canker, peach tree (crown) borer

Small holes in bark of twigs, branches:

Shothole borers

Trees decline in vigor, leaves yellow:

X-disease

Leaves yellow with veins darker green:

Iron chlorosis

Tips of twigs die back, twigs tunneled:

Peach twig borer, Oriental fruit moth

Fruit blemished but not tunneled:

Coryneum blight, powdery mildew (rusty spot), San Jose scale, plant bug injury, flower thrips, hail injury, bird damage

Amber ooze from fruit (gummosis):

Cytospora, coryneum blight

Fruit tunneled:

Oriental fruit moth, peach twig borer

Maggots in fruit:

Walnut husk fly, fruit flies

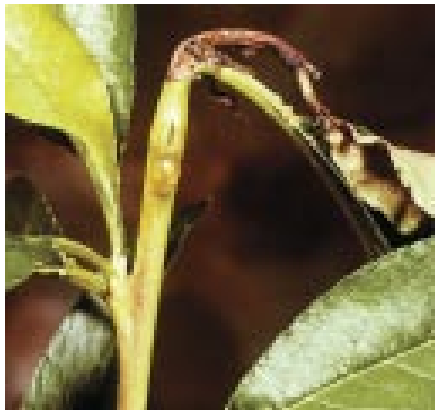


Figure 5: Twig dieback from peach twig borer tunneling.



Figure 6: Pear slug larva and characteristic feeding injury.

Effective controls have not been identified for these insects. They will often drop from plants when disturbed, so some beetles can be collected by shaking branches over a sheet during blossoming and fruit set. Fruit tree “cover sprays” applied before and after bloom should also control them.



Figure 4: Oozing from plum gouger feeding wound.

Western Cherry Fruit Fly

The western cherry fruit fly (*Rhagoletis cingulata*) is a serious pest of sweet cherries in the Durango area and does occur in some other locations on the West Slope. Damage is caused by the maggot-stage larvae that tunnel the fruit, making it susceptible to spoilage.

Winter is spent in the pupal stage around the base of cherry trees. The adult flies emerge in early summer, typically between late June and early July, and lay eggs on the fruit. There is only one generation per year.

Western cherry fruit flies can be trapped using yellow sticky boards. Although some control is possible by this trapping, sticky traps are best used to determine when flies are present so sprays can be timed appropriately. Sprays of standard home orchard insecticides such as carbaryl (Sevin) or diazinon can easily control this insect if applications are made during periods of adult fly activity.

Peach Twig Borer

The peach twig borer (*Anarsis lineatella*) can be an important pest of some stone fruits grown on the Western Slope, particularly peach. Larvae tunnel into terminal growth and later into fruit. Apricot and plum are occasional hosts. The peach twig borer spends the winter as a small caterpillar on the tree bark. They become active in early spring and tunnel into buds and young terminal growth. They transform to moths in May and lay eggs on twigs, small leaves and developing fruit. Initially, most feeding is done on twigs, with larvae tending to move to the fruit as the pits start to harden. A second generation occurs in early summer. Larvae then feed on the fruit, causing greater fruit injury.

Horticultural oils or lime sulfur applied in spring while trees are still dormant can kill the overwintering larvae. In most home orchards, this should provide sufficient control for the season. Sprays of insecticides during the growing season can provide some control but are difficult to time correctly, because larvae are protected within twigs or fruit much of the time.

Pear Slug (Pear Sawfly)

The pear slug (*Caliroa cerasi*) is a rather unusual insect that feeds on the upper leaf surface of sweet cherries, pears and several related plants. The larvae are slug-like but actually are the immature stage of a type of nonstinging wasp (sawfly). Feeding damage by pearslug larvae is highly characteristic in that injury is confined to areas between the main veins, on the upper leaf surface. This produces a lacy, skeletonized injury on infested leaves.

Pear slug larvae are easy to control with home-orchard insecticides, including insecticidal soaps. Larvae may also be washed off with a forceful jet of water. A light dusting of wood ashes on the leaves is another highly effective control.

Common Disorders of Plum

Leaves curled, undersides often with dark aphids:

Green peach aphid, mealy plum aphid

Upper surface of leaves chewed, often leaving main veins:

Pear slug

Leaves chewed, silken tent produced:

Eastern tent caterpillar, fall webworm

White powdery covering on leaves:

Powdery mildew

Small 'finger galls' on leaves:

Eriophyid mites

Clear, amber ooze from bark:

Cytospora canker

Amber ooze mixed with sawdust, often near soil line:

Peach tree (crown) borer

Branches die-back, trees decline in vigor:

Cytospora canker, peach tree

(crown) borer, X-disease,

San Jose scale

Small holes in bark of twigs, branches:

Shothole borers

Tips of twigs die back, twigs tunneled:

Peach twig borer

Fruit pit infested:

Plum gouger

Oozing from fruit (*gummosis*):

Plum gouger, cytospora canker

Shothole Borer

The shothole borer (*Scolytus rugulosus*) tunnels under the bark of branches and twigs, creating small exit holes in the bark. Shothole borers are considered to be secondary pests because they cannot generally attack vigorously growing trees. However, winter injury and damage by *Cytospora* canker often provide sites where shothole borers can attack.

Cultural practices are most important in shothole borer control. Prune and remove damaged wood to kill larvae developing in the wood. Proper irrigation and fertilization can prevent trees from becoming stressed and susceptible to shothole borers.

Occasionally, preventive insecticide sprays are useful to help manage outbreaks of shothole borer. Certain formulations of carbaryl (Sevin), permethrin and esfenvalerate can be used on branches to control borers in stone fruits. Apply them in late spring to coincide with periods when the adults emerge from the twigs in which they developed during the winter. A second generation of beetles emerges in midsummer.



Figure 7: Shothole borer exit holes.

“Catfacing Insects”

Several insects cause stone fruit to become distorted by their feeding, a condition known as a catfacing injury. Caterpillars of climbing cutworms, such as the speckled green fruitworm and the fruittree leafroller, may chew areas of young fruit that later appear as dimpled scabs on the fruit surface. Sucking “true bugs,” such as stink bugs, lygus bugs and boxelder bugs sometimes damage developing fruit by killing small patches of surface tissue.

Problems with catfacing insects are of little concern to home orchardists, because the fruit remains in generally good condition despite the scarring. Occasionally, more severe problems occur when orchards are next to alfalfa fields. Alfalfa is a good host plant for catfacing insects such as the lygus bugs, which can migrate to nearby crops in large numbers when alfalfa is cut. Since catfacing injuries are cosmetic and do not substantially affect flavor or nutritional quality of the fruit, treatment in home orchards is almost never needed.

¹W.S. Cranshaw, Colorado State University Cooperative Extension entomologist and professor, bioagricultural sciences and pest management; and R. J. Zimmerman, research associate, Rogers Mesa Experiment Station, Hotchkiss.

Colorado State University, U.S. Department of Agriculture, and Colorado counties cooperating. Cooperative Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.