



# Stone Fruit IPM for Beginners

Developed by the Great Lakes Fruit Workers and funded by a working group grant from the North Central Integrated Pest Management Center



## Chapter 32

## Occasional pests

Julianna Wilson, Michigan State University, Department of Entomology

### Occasional pests

This factsheet describes several pests that are occasional problems in some years in some orchards.

### Foliar and surface-feeding beetles

**Rose chafer** (*Macrodactylus subspinosus* (F.))

**Japanese beetle** (*Popillia japonica* Newman)

### Hosts 🍑

Peach, but other stone fruit as well.

### Time of concern

Summer.

### Damage, symptoms and pest cycle

These beetles attack all tree fruits, particularly peaches and apples. Adults are the stage that cause damage when they feed on the fruit surface and leaves of deciduous fruit trees. The fruit may be partly peeled and gouged in irregular shallow patches or nearly devoured. The leaves are skeletonized. Damage is more severe in sandy locations, often occurring especially at orchard edges in proximity to grassy areas.

Rose chafer adults are slender, long-legged beetles, fawn-colored with a reddish brown head and thorax. The undersurface of their body is black.

Japanese beetle adults are metallic green or greenish bronze with reddish wing covers and several white spots near the tip of the abdomen and along the sides.

Larvae of both species are C-shaped grubs that live in soil in grassy areas and are not found on trees.

### IPM steps for beginners

Feeding damage from adults is sporadic and transient during summer. If needed, apply an insecticide when leaf damage or the insects feeding on foliage are noted in the trees; retreatment may be necessary as new adults arrive. Biological control of beetle grubs can sometimes be accomplished through applying milky spores of bacteria or nematode products to adjacent grassy areas.



Mike Haas, MSU

Rose chafer adults.



Peter McChes, MSU

Rose chafer damage on fruit.



A. Agnello, Cornell Univ.

Japanese beetle adult.



A. Agnello, Cornell Univ.

Leaves damaged by Japanese beetle adults.



## Thrips

*Frankliniella* spp.

### Hosts 🍊

Nectarine and other stone fruit.

### Time of concern

During bloom and again during fruit ripening.

### Damage, symptoms and pest cycle

Thrips attack nectarines and other stone fruits. Adults infest developing fruit during bloom and again as the fruit ripens. Larval and adult feeding at bloom through shuck fall causes scars on the fruit surface that expand as the fruit grows. Feeding near harvest can result in a silvering or russetting of the fruit surface. High thrips infestations feeding on terminal growth can cause distortion of leaves and excess branching.

Western flower thrips, *Frankliniella occidentalis* (Per-gande), and flower thrips, *Frankliniella tritici* (Fitch), are the two most common species and indistinguishable without a microscope. Adults are slender and yellowish with short antennae; the wings are long and narrow and held over the abdomen. Larvae are smaller and wingless, but otherwise resemble adults.

### IPM steps for beginners

Injury tends to be more severe in orchards located in proximity to greenhouses and under drought conditions. Insecticide sprays may be necessary at petal fall and close to harvest.



Rosenberger

Feeding by thrips has caused silvering or russetting on the fruit surface.



Yellowish larva

NRAES-75

## San Jose scale

*Quadraspidiotus perniciosus* (Comstock)

### Hosts 🍇 🍓 🍊

All stone fruit.

### Time of concern

Dormant stage and again in early summer when crawlers are active.

### Damage, symptoms and pest cycle

Scale infestations on the bark can be heavy and contribute to an overall decline in tree vigor, growth and productivity. Tree death is possible. Feeding on the fruit induces local red-to-purple discoloration around the feeding sites. Early-season fruit infestations may result in small, deformed fruit.

Adult males are minute, winged insects about 1 millimeter long and golden brown with a reddish tinge. Scales may be either disk-shaped (females) or oval (males), and are composed of concentric rings of gray-brown wax radiating from a tiny white knob. Nymphs (crawlers) are bright yellow and resemble spider mites.



J.A. Davidson, Univ. Md., College Pk. Bugwood.org

### IPM steps for beginners

Spray a delayed dormant oil when buds are showing green tissue but before pink bud. Insecticide applications may be made to control newly emerged crawlers in early summer. Use pheromone traps to monitor adult males. A degree-day developmental model can predict crawler emergence after petal fall or trap biofix.

## Lecanium scale (European fruit lecanium or brown apricot scale)

*Parthenolecanium corni* (Bouché)

### Hosts 🍑

Peach and other stone fruit.

### Time of concern

Dormant stage, and again in early summer when crawlers are active

### Damage, symptoms and pest cycle

This pest attacks all deciduous tree fruits, particularly peaches. Female scales cover the undersides of twigs and are most noticeable during the dormant season. Crawlers feed on the leaves throughout summer and into fall, covering the fruit with honeydew on which a sooty black fungus grows.

The adult female scale is nearly hemispherical and shiny brown with several ridges along the back. Nymphs (crawlers) are light colored.



NYAES



NYAES

### IPM steps for beginners

Spray a delayed dormant oil when buds are showing green tissue but before pink bud to prevent eggs from developing under the scale covers; apply an insecticide when crawler hatch is complete, five to six weeks after peach petal fall. However, soft scales (family Coccidae) are usually controlled by a complex of parasitic wasps; this can be facilitated by avoiding disruptive sprays of broad spectrum insecticides.

### Occasional pests