

APHIDS

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Aphids are incidental pests that seldom do meaningful damage to peaches in most of the Southeast. Aphids injure peach primarily by feeding on succulent vegetative growth. Black peach aphids can stunt or even kill young trees. In most of the region, years lapse between outbreaks of this severity.

Aphids are important vectors of plant viruses in many other crops. Only one important peach virus present in North America is aphid vectored. Plum pox virus, a devastating pathogen that limits stone fruit production in many areas of the world, had until recently been excluded from North America. Plum pox virus-infected orchards were discovered in Adams County, Pennsylvania, in 1999 and on Ontario's Niagara Peninsula in 2001. Infected budwood is the most important means of plum pox virus transmittal. Aphids, the virus' natural vectors, are responsible for local movement of the pathogen within or to adjacent orchards. Migratory aphid species, such as green peach aphid, are felt to pose a greater vector potential than aphids that colonize peach. The presence of plum pox virus in North America has greatly heightened interest in the aphid fauna of peach. Peach aphid complexes in North America, particularly the Southeast, are poorly understood and studied. The black peach aphid, the green peach aphid, and the rusty plum aphid are among the more common aphids in southeastern peaches.

DESCRIPTIONS

Generically, aphids (Figure 1) are small, tear-drop shaped, soft-bodied insects with long antennae. They seldom exceed 1/10 inch (2.5 mm) in length. Most have a pair of tubules or cornicles resembling tail pipes near the rear of the abdomen. Aphids typically live in colonies and reproduce very rapidly. Nymphs, immature aphids, resemble adults but are smaller and lack wings. Winged and wingless adults occur.

Black peach aphid adults, *Brachycaudus persicae* (Passerini), are shiny black and about 1/12 inch (2 mm) long. Nymphs are reddish-brown in color. In the Southeast, black peach aphid is seldom damaging, but it has considerable pest potential. Black peach aphid forms colonies on the foliage. However, much of its pest potential is attributable to year-round, root-infesting colonies. It can stunt or, in worst-case scenarios, kill young trees. Black peach aphid occurs throughout the eastern United States. Its severity as a peach pest increases from south to north, being more often cited as damaging to peach in Middle Atlantic production areas. Peach and plum are among its preferred hosts.

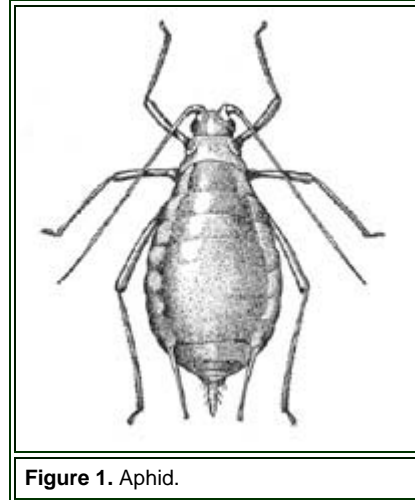




Figure 2. Green peach aphids with lacewing larvae predator.

Green peach aphid, *Myzus persicae* (Sulzer) (Figure 2), is found worldwide on a great variety of host plants. Green peach aphids are small, about 1/12 inch (1.8-2.3 mm) long, light to dark green or pink in color, with red eyes. Wingless forms are usually yellowish-green during the summer, but may be pinkish-red in the early spring and fall. Winged forms are generally brown with a yellowish abdomen bearing an irregular dark blotch. Green peach aphid is frequently migratory, moving from host to host. In the Southeast, green peach aphid is insignificant as a direct pest of peach. However, it is an abundant, cosmopolitan, migratory aphid with documented potential as a plum pox vector in other areas of the world. In most cropping systems, insecticidal control of migratory aphids to mitigate spread of

plant viruses has been ineffective. In some instances, the irritation of sub-lethal insecticide exposure seems to make migratory aphids more active, which can increase their vector potential.

Rusty plum aphid, *Hysteroneura setariae* (Thomas), occurs throughout eastern North America. It is often abundant in the Southeast, but it is seldom damaging to peach. It feeds on peach, plum, cherry, and various small grains. Rusty plum aphids are rusty brown in color with white markings at the base of the antennae, on the legs, and on the abdomen. It is about 1/15 inch (1.7 mm) long.

PLANT INJURY

Aphids suck plant juices from leaves, blossoms, and twigs. Heavy infestations can cause leaf curl and stunted terminal growth. When aphids are abundant, leaves frequently become coated with a sticky excretory product called honeydew. Honeydew often supports the growth of a black sooty mold, which can coat leaves and reduce photosynthesis.

Aphids are generally most important in early spring, when they feed on developing buds, opening blooms, and young fruit. Heavy infestations can slow tree growth and reduce fruit set. Typically, less damage occurs as the season progresses. The black peach aphid also attacks the roots of peach trees. Root-infesting forms are present throughout the year. Black peach aphid is most damaging to nursery stock and newly set trees. Older trees apparently suffer little injury from root feeding.

SEASONAL HISTORY AND HABITS

In the Southeast and other warm areas, green peach aphid seldom produces sexual forms; the aphids overwinter as nymphs and adults on a variety of host plants. Continuous reproduction by unmated females may occur. There are numerous generations per year.

In cooler areas of the United States, green peach aphids overwinter as eggs on peach in the axils or on twigs. The eggs hatch in early spring, and emerging nymphs begin feeding at once on opening buds, unfolding blossoms, and tender twigs. Nymphs develop into wingless female adults that give birth to living young without mating. The young are likewise all females that reproduce without mating. Succeeding generations are produced in the same manner. After two or three generations, winged females are produced that migrate to summer food plants, including many vegetables and ornamental plants. At the onset of cold weather, winged migrants move back to peach, and sexual forms, males and females, are produced. These mate, and overwintering eggs are laid.

The life history of the rusty plum aphid is similar to that of the green peach aphid.

The black peach aphid's wingless form lives throughout the year on peach roots. Feeding may continue through the winter. In late winter and early spring, individuals migrate to new growth above-ground. They

start new colonies on twigs or shoots, and increase rapidly. Like other aphids, their reproduction is parthenogenic, with unmated females giving birth to living young. After several generations, winged forms are produced, probably in response to overcrowding. Winged adults migrate to other trees or plants. Above-ground, black peach aphids usually disappear by mid-summer. There are numerous generations of black peach aphids per year.

CONTROL

In the Southeast, aphids of peach are commonly controlled by insecticide applications aimed at other insects. They are seldom of economic importance in commercial orchards. However, aphids are easily detected and a watch should be maintained. If aphid infestations develop, they should be controlled before they become abundant enough to cause leaf curl or honeydew buildup. Above-ground forms of the black peach aphid should be controlled when first detected. They are much easier to control than root-infesting forms. This is especially important on first-year peach trees.