



TREES & SHRUBS

Aphids on Shade Trees and Ornamentals no. 5.511

by W.S. Cranshaw ¹

Quick Facts...

Aphids occur on almost all types of trees and shrubs. They usually do not damage plants and are controlled by natural enemies such as lady beetles.

Problems most commonly occur where aphids produce leaf curls, such as on ash, plum, honeysuckle and snowball viburnum.

Check for natural enemies before treating with insecticides.

Systemic insecticides are particularly effective when aphids have curled the leaves.

Contact insecticides and soaps are useful when aphids are exposed on leaves.

Dozens of species of aphids (plant lice) may be found on shade trees and woody ornamental plants in Colorado. Aphids are small insects, typically less than 1/8 inch, although some may be almost 1/4 inch long. Colors range from bright orange or red to dull gray. One common group, woolly aphids, produces an abundance of flossy, waxy threads that cover their bodies. Winged and wingless forms can be produced by all Colorado aphid species (Figure 1).

Aphids feed on plants by sucking plant sap from the leaves, twigs or stems. When abundant, aphids remove large quantities of sap, reducing plant growth and vigor. This injury is most common with stem- or trunk-infesting aphids, such as the woolly apple aphid and juniper aphid. Aphids feeding on developing leaves also can produce leaf curl injuries. This is most frequently observed on snowball viburnum, honeysuckle, plum and ash.

Most aphids excrete large quantities of a sweet, sticky substance called honeydew. At times, excessive honeydew dropping from trees can be an extreme nuisance. Also, sooty mold fungus may grow on the honeydew, producing a gray, unattractive covering of the leaves. Sooty mold is not damaging to the trees except when it covers leaves and temporarily reduces photosynthesis.

Ants often are attracted to honeydew and feed on it. Ants may even tend aphids and other honeydew-producing insects (certain scales, leafhoppers, treehoppers), protecting them from natural enemies such as lady beetles and lacewings. (See fact sheet 5.550, *Beneficial Insects and Other Arthropods*.) Often the presence of ants crawling up trees or on foliage indicates that large numbers of aphids or other honeydew producers also are on the plants.

Typical Aphid Life History

Most species of Colorado aphids overwinter as eggs on specific types of woody plants. Eggs hatch in the spring. The following spring and summer, forms of the aphid sometimes move from overwintering plants to other plant species. Summer aphids consist entirely of females that give birth to live young at a rate of one to 20 per day.

The newly hatched aphids can complete their development within one to two weeks, after which they begin to produce more aphids. Consequently, aphid populations may increase rapidly, with several generations occurring during the growing season. At the end of the summer, both male and female aphids are produced. They mate on the overwintering host plant, and females lay eggs.

Control

Many kinds of insects naturally prey upon aphids. Most common are various species of lady beetles (ladybugs), green lacewings, syrphid flies and small parasitic wasps. Under many conditions, these beneficial insects provide effective control of aphids. Before applying any insecticide, check the plants to

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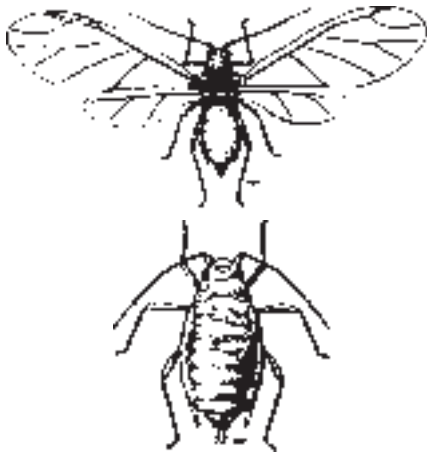


Figure 1: Adult aphids — winged and wingless.



Figure 2: Aphid eggs deposited on a leaf (enlarged).

Table 2: Insecticides for control of aphids on shade trees and ornamentals.

Soil-applied systemic insecticides
imidacloprid
disulfoton
Foliar-applied systemic insecticides
acephate
dimethoate
Contact foliar-applied insecticides
insecticidal soaps
malathion
esfenvalerate
Dormant season applications
horticultural oils

Always carefully read and follow all label instructions. Failure to do so can result in excessive exposure to people, pets and wildlife and leave damaging residue on plants.

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make sure these natural controls are not already reducing aphid numbers. Sometimes ants interfere with these natural controls. Excluding ants with sprays, sticky bands, etc., can allow biological controls to be effective.

When natural enemies are not abundant enough to provide aphid control, insecticides sometimes are needed to prevent plant injury. For most aphid problems, particularly those associated with leaf curls, insecticides that move systemically within the leaf or plant provide the best control. The most common systemic insecticide available to homeowners is Orthene (acephate). Cygon (dimethoate) also may be available as a spray for use on evergreens.

Some insecticides can be applied to the soil and taken up by the roots of the plants. These are called *systemic* insecticides. The most recent, Imidacloprid, is sold under the trade name Bayer Advanced Garden Tree & Shrub Killer Concentrate. (Merit is the trade name of imidacloprid used by professional tree care companies.) It is applied as a drench over the root zone. An older—and much more toxic—soil systemic insecticide that is still available for some ornamental plant uses is DiSyston (disulfoton). DiSyston is sold as granules or in plant food mixtures for soil application.

There are several insecticides effective for aphid control when sprayed on plants. Perhaps most effective are those with systemic activity that allows them to move through the plant. Acephate (Isotox, Orthene) is the most widely available systemic insecticide. Dimethoate (Cygon) is less commonly available and is mostly used for aphids on evergreens. Other insecticides used as sprays that have activity against aphids include insecticidal soaps (see fact sheet 5.547, *Insect Control with Soaps and Detergents*) malathion, and esfenvalerate.

Many of the aphids that curl leaves and produce problems in spring originate from eggs that remained on the plants during winter. Before bud break and egg hatch these eggs can be killed with sprays of horticultural oils (see fact sheet 5.569, *Insect and Mite Control: Spray Oils*). Such a use of oils is often described as a ‘dormant oil’ application, since it is applied before the plants produce new growth in spring.

On smaller trees aphids may be controlled by use of high pressure sprays of water. Hosing plants can also remove the sticky honeydew that aphids excrete.

Table 1: Some common species of aphids in Colorado.

Common name	Scientific name	Hosts
American walnut aphid	<i>Monellia caryae</i>	Walnut
Ash leafcurl aphid	<i>Prociphilus fraxinifolii</i>	Ash
Birch aphids	Various	Birch
Elm leaf aphid	<i>Tinocallis ulmifolii</i>	American elm
Giant conifer aphid	<i>Cinara</i> spp.	Conifers
Giant willow aphid	<i>Lachnus salignus</i>	Willow
Green peach aphid	<i>Myzus persicae</i>	Peach, plum
Honeysuckle witches' broom aphid*	<i>Hyadaphis tartaricae</i>	Honeysuckle
Leafcurl plum aphid	<i>Hyalopterus arundinis</i>	Plum
Oak aphids	<i>Tinocallis</i> sp.	Oak
Rose aphid	<i>Macrosiphum rosae</i>	Rose
Snowball aphid	<i>Neoceruraphis viburnicola</i>	Snowball viburnum
Woolly aphid (various)	<i>Adelges</i> spp., <i>Pineus</i> spp.	Conifers
Woolly apple aphid	<i>Eriosoma lanigerum</i>	Apple, elm

*Discussed in 5.546, *Honeysuckle Witches' Broom Aphid*.

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