



# Entomological Notes

Department of Entomology

## APHIDS ON ORNAMENTALS

Many species of aphids or plant lice occur on ornamental trees and shrubs in Pennsylvania. Certain species feed on foliage, others on twigs and branches, flowers or fruit, and some on roots. Aphids live on several distinct hosts, spending part of their seasonal development on one host and the remainder on another. They feed on both coniferous and deciduous plants. Effective control of aphids has been a problem to homeowners and landscape managers for years. Some of the more common aphids include the green peach aphid, melon aphid, tuliptree aphid, giant bark aphid, white pine aphid, and rose aphid.

### DESCRIPTION

Aphids constitute a large group of small, soft-bodied insects. They may measure up to six mm in total length. Aphids have piercing-sucking mouth parts that enable them to remove plant fluids from a host. Aphids generally can be recognized by their pear-like shape, a pair of cornicles (tube-like processes) at the posterior end of their body, and fairly long antennae (Fig. 1). The cornicles secrete a defensive fluid which warns aphids of predators and other enemies. Aphids vary in color from green, yellow, red, purple, brown, or black.

### LIFE HISTORY

The life history of many aphids is complex and unusual. Enormous populations of aphids can be built up in a short period of time. Although considerable variation occurs between species, a typical life history is described as follows. Aphids generally overwinter as fertilized eggs. With the approach of spring weather, the eggs hatch into nymphs which rapidly mature into wingless females. Each of these aphids is responsible for producing a large colony of aphids and is referred to as a "stem mother." Stem mothers produce female nymphs without mating (parthenogenetic reproduction). Successive wingless generations are produced until the aphid colony becomes overcrowded. When overcrowding occurs, a generation of winged females is produced that will migrate to other host plants. These winged females are referred to as spring migrants. Spring migrants continue to produce successive gen-

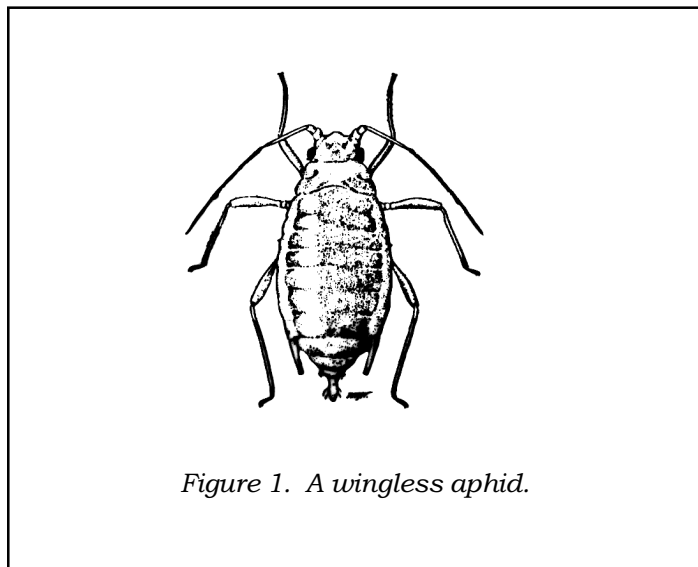


Figure 1. A wingless aphid.

erations until the end of the summer when winged males and females are produced. The winged females return to the spring host. They are sometimes referred to as fall migrants. These individuals produce females which mate with males of the previous generation. These mated females lay eggs that overwinter.

### DAMAGE

Aphids are common, persistent, and sometimes troublesome pests of ornamental plants. Most aphids cause damage to host plants by robbing them of plant fluid, by the toxic action of their salivary secretions injected during feeding, and by serving as vectors of viruses that are harmful to plants. Feeding by aphids can stunt plant growth, deform leaves and fruit, or cause galls on leaves, stems and even roots. Many aphids also excrete a sticky, sugar-containing substance from their anus known as "honeydew." This material will drop onto the leaves, twigs, and fruit of a plant. A black, sooty mold soon begins to grow on this sugar-rich substrate. This mold not only mars the appearance of the plant, but when abundant, will also reduce the food-making process of a plant known as photosynthesis. Honeydew is attractive to ants, flies, hornets, and yellowjackets. It can also mar cars, chairs, tables, or other objects that are beneath aphid-infested plants.

## MANAGEMENT

### **Non-Chemical**

In some cases, cultural practices such as proper pruning, fertilizing, and watering play an important role in preventing or suppressing an aphid infestation. When practical, try washing aphids off an affected host with a strong stream of water.

Beneficial insects play an important role in aphid control. Ladybird beetles (both adults and larvae), lacewings, some flower flies (larvae), and tiny parasitic wasps will use aphids as a source of nourishment for their development. Remember certain insecticide applications will destroy these beneficial insects as well as targeted pest species. This practice could leave trees and shrubs unprotected if pest populations should increase in the future.

### **Chemical**

The use of insecticides is often the only effective means of controlling an aphid infestation. A number of registered formulations of insecticides are available for aphid control. However, to avoid damaging valuable plants, apply the material only to plants that are specified on the label. Be sure to follow all insecticide label directions.

## WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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