



UConn Home & Garden Education Center



Aphids

Aphids can be serious and persistent pests in the home landscape and gardens. They are difficult to control due to their high reproductive capability and resistance to many different insecticides. Aphids are sucking insects that can cause curling and distortion of tender young growth. The presence of aphids, their white shed skins, and honeydew can reduce the aesthetic quality of a wide range of crops and ornamental plants.

Aphids are small (less than 1/8" long), soft-bodied, pear-shaped insects with long legs and antennae. Cornicles, tailpipe-like protrusions that exude droplets of a quick-hardening defensive fluid, can be seen at the rear of their abdomen. The presence of cornicles distinguishes aphids from all other insects.

Some of the most common species found include the green peach aphid (*Myzus persicae*), the melon or cotton aphid (*Aphis gossypii*) and the foxglove aphid (*Aulacorthum solani*) and the honeysuckle aphid (*Hyadaphis tataricae*). Potato aphids (*Macrosiphum euphorbiae*) may occasionally occur along with the gray cabbage aphid (*Brevicoryne brassicae*), the bright yellow-orange oleander aphid (*Aphis nerii*), and the reddish-brown chrysanthemum aphid (*Macrosiphoniella sanborni*). Tulip bulb aphids (*Dysaphis tulipae*) can infect many different bulbs in storage. Some aphids may even be found on plant roots (*Pemphigus species*).



Honeysuckle aphid



Oleander aphid

Life Cycle

Most types of aphids do not mate and the females give birth to live nymphs. There is no egg stage. An adult female may live for up to one month during which time she may give birth to 60 to 100 live nymphs. The nymphs will molt several times (up to 4) before reaching the adult stage. If the weather is warm it can take as little as 8 days for the newborn nymph to become a reproducing adult. They do not pupate and therefore their metamorphosis is considered incomplete. As aphids molt, their whitish cast skins may be mistaken for whiteflies.

Migratory winged aphids may appear when the colony becomes overcrowded or when the food supply is depleted so they can find a new food source. Some aphid species produce sexual forms that mate and produce eggs that may overwinter in the hardy egg stage.

Feeding Damage

Aphids feed by inserting their stylet-like, sucking mouthparts directly into the phloem and removing plant sap. When high aphid populations develop, plants may become stunted with curling and twisting of the young leaves. As aphids feed, a sugar-rich, high-pressure liquid, known as "honeydew", is excreted out of the anus. Honeydew promotes the growth of black sooty mold of the Ascomycete fungi which can then reduce photosynthesis. Sooty mold can be washed off with water or insecticidal soap.

As an example of a symbiotic relationship, ants are often associated with aphid-infested plants. As they “farm” the honeydew, the ants ward off predators and parasites to protect their food source and may even take aphids into the ant’s chambers for protection or the eggs to overwinter.

Aphids may feed singly but are most often found feeding in dense groups on leaves, stems, and flower buds and don’t move rapidly when disturbed. These large populations can turn leaves yellow and stunt the growth of a plant. Leaves may also curl and some species may cause galls to form.

Real damage may be done to plants by the viruses that the aphids can transmit from plant to plant on certain ornamental plants and vegetables such as squash, cucumber, pumpkin, melon, bean, potato, lettuce, beet, chard, and bok choy. Viruses, such as the Cucumber mosaic virus, will have similar effects as aphid feeding in the form of yellowed, mottled, curling leaves and stunted growth. The viruses are hard to control as they can be transmitted by the aphid in just a few minutes of feeding.

There are a few aphid species that attack other plant tissues than leaves and shoots. The lettuce root aphid is a soil dweller that attacks lettuce roots in spring and summer causing wilt and occasionally death. This same species often moves to poplar trees in the fall where it overwinters in the egg stage and produces leaf galls in spring. The woolly apple aphid infests woody parts of apple roots and limbs, often near pruning wounds, and can cause overall tree decline if roots are infested for several years. Heavy infestations of crown and root aphids on carrots may weaken tops, causing them to tear off when carrots are harvested.

Controls

Mechanical

- Aphids may cause unsightly damage to a plant they rarely kill a mature plant.
- Look under leaves where they may hide. Prune off infested areas and destroy.
- Aphid-infested weeds are frequently a source of recurring aphid problems. Inspect and remove weeds promptly.
- The use of excessive nitrogen promotes lush growth that is favorable to aphid development.
- A strong spray of water may dislodge feeding aphids and they rarely find their way back to the affected plant. Do this early in the day to allow the plant to dry off during the heat of the day to avoid fungal issues.
- Most aphids thrive in temperatures in the 65-80°F range so that rising temperatures in the summer will help control the populations although they may reappear in September and October.

Biological



There are various species of parasitic wasps that lay their eggs inside aphids causing the skin of the parasitized aphid to turn crusty and golden brown and mummify. Asian lady beetle adults and larvae feed on the aphids. The lady beetle larvae (left-hand image) are unusual looking and may themselves be mistaken for a harmful insect. Other beneficial predators of the aphid include lacewing larvae, soldier beetles, and syrphid fly larvae.



Chemical

If the populations are very high insecticidal soaps, horticultural oil and Neem oil may be used. These products kill by smothering the aphid and will only target the aphids that are present at the time of spraying so multiple applications may be required. Apply these materials with a high volume of water, usually a 1 to 2% oil solution in water, and target the underside of leaves as well as the top. These materials will also kill some natural enemies that are present on the plant and hit by the spray but they leave no toxic residue that will kill natural enemies that migrate in after the spraying. Contact insecticides will have difficulty in reaching aphids that are residing inside of curled leaves.

Formulations that combine insecticidal soaps with pyrethrins may have a stronger effect and will break down quickly, leaving little residue to affect beneficial insects that may appear later. Systemic pesticides are non-target and will kill all insects that visit a plant especially if it is in bloom and should be avoided. Also, these products may take several weeks to move through the plant from the roots and the aphids may well be gone by that time.

Despite good cultural practices, pests and diseases at times may appear. Chemical control should be used only after all other methods have failed.

For pesticide information please call UConn Home and Garden Education Center weekdays, in Connecticut call toll free 877-486-6271. Out of state call 860-486-6271. UConn Home and Garden Education Center, 2019

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, the Dean of the College, Cooperative Extension System, University of Connecticut, Storrs. The Connecticut Cooperative Extension System is an equal opportunity employer and program provider. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, Stop Code 9410, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964.