

Managing Aphids in Greenhouses

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Aphids can be persistent and serious pests in the greenhouse. Because of their high reproductive capability and resistance to numerous insecticides, they can be difficult to control. Aphids are sucking insects that cause damage to greenhouse crops by causing curling and distortion of young, succulent plant growth. The mere presence of aphids, their shed skins, and honeydew can reduce the aesthetic quality and subsequent salability of various greenhouse crops. Unfortunately, aphids are frequently detected when plants are in flower, at or near the time of sale, when effective control is most difficult to achieve.

In general, aphids are small (less than 1/8 inch long), soft-bodied, pear shaped insects with long legs and antennae. There are many types (species) of aphids found in greenhouses. The two most common species include the green peach aphid, *Myzus persicae* and the melon or cotton aphid, *Aphis gossypii*. Other species that greenhouse growers may encounter include the gray cabbage aphid, pale green foxglove aphid, and the reddish-brown chrysanthemum aphid. Proper identification is important in order to select the most effective management option. Aphids are most commonly known for their “tailpipes” or cornicles at the tip of their abdomen. Cornicles can be used to effectively identify an aphid species.

Plants Attacked and Damage Aphids feed by inserting their stylet-like , sucking mouthparts directly into the phloem and removing plant sap. Young leaves may become stunted with curling and twisting when populations are high enough. A sugary plant sap or honeydew is excreted as aphids feed. Subsequently, the growth of black sooty mold fungi occurs often resulting in photosynthesis reduction.



Adult green peach aphid and nymph

(Photo by L. Lindquist, OARDC)



Green peach aphid on underside of chrysanthemum leaf

(Photo by L. Lindquist, OARDC)

Life Cycle and Biology Most types of aphids found in greenhouses do not mate. All aphids present are females which give birth to live nymphs (immature aphids). There is no egg stage; the young resemble adults. An adult female can live up to one month during which time she may give birth to 60-100 live nymphs. Migratory winged aphids may appear when the colony becomes overcrowded or when the food supply is limited.

Regular, weekly scouting of aphids is needed to detect aphids early before crops are in flower. Thorough coverage by insecticides and effective control is most difficult when plants are in flower. Also, numerous insecticides can cause spotting of the flowers. Yellow sticky cards will only attract winged aphids. Thus, focus on random plant selections of susceptible crops and cultivars to detect wingless nymphs. Look for whitish-cast skins and honeydew.

Control Biological (natural enemies) and chemical control options are available for control of aphids in greenhouses. However, aphids are difficult to control with insecticides for various reasons. Control failures may be due to poor spray techniques, inadequate coverage, or high pH in the spray tank. Green peach aphids are particularly resistant to organophosphates, carbamates, and synthetic pyrethroids. Different strains of aphids may also be resistant to different insecticides. Systemic products may be more effective since aphids ingest large quantities of plant sap. Thorough coverage of the underside of leaves is required for contact products. Two applications of contact sprays may be most effective.

Temperature and humidity may be manipulated in order to provide a more favorable environment for the introduction of natural enemies (predators, parasitoids, and pathogens). Familiarize yourself with IPM scouting techniques and develop a regular monitoring program before attempting biological control. Understand the specific environmental requirements of the natural enemy to be released. Most control failures result when natural enemies are released too late, at too low a rate, or at a time of the year when temperature or photoperiod may adversely affect the natural enemy.

For pesticide recommendations: Contact your County Extension Agent.