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Chrysanthemum Aphid

Insect Pest of Chrysanthemum Plants

Chrysanthemum aphid, *Macrosiphoniella sanborni*, is an insect pest native to Asia that only feeds on chrysanthemum, *Tanacetum* × *grandiflorum*, plants grown in greenhouse production systems. This publication describes the biology, damage, and management of the chrysanthemum aphid.

Biology

Chrysanthemum aphid females are approximately 1/16 of an inch (1.5 millimeters) long, dark red to black, with black cornicles (tail pipes) that protrude from the end of the body (Figure 1). All chrysanthemum aphids in greenhouses are females. Each female produces four to eight live nymphs per day, which are also females. Nymphs are red with long legs and antennae, and short black cornicles (Figure 2). Nymphs mature into adult females that produce nymphs for the next generation.

Chrysanthemum aphid populations can increase rapidly within a short period of time, resulting in chrysanthemum plants being extensively infested with hundreds of aphids (Figure 3). When chrysanthemum plants are extensively infested with aphids, nymphs develop into winged females that move to noninfested chrysanthemum plants to start a new infestation.

Chrysanthemum aphids overwinter in greenhouses and feed throughout the winter if chrysanthemum plants are present. From spring through summer, chrysanthemum aphids may leave greenhouses in search of new plants to feed on. Chrysanthemum aphids can be introduced to other greenhouse facilities through the shipment of infested plants.

Figure 1. Chrysanthemum aphid adult (Photo: Raymond Cloyd).

Figure 2. Chrysanthemum aphid nymph (Photo: Raymond Cloyd).

Damage

Chrysanthemum aphids feed on new terminal growth (Figure 4). They also feed on the stems and leaf undersides (Figure 5), removing plant fluids with their mouthparts. During feeding, chrysanthemum aphids produce honeydew, a clear, sticky liquid that serves as a substrate for black sooty mold (Figure 6). Feeding results in stunted growth, and leaves may be covered with molted skins (Figure 7). Chrysanthemum aphids can transmit chrysanthemum vein mottle virus and chrysanthemum virus B.

Management

Managing chrysanthemum aphids below plant-damaging levels involves scouting chrysanthemum crops regularly, removing heavily infested chrysanthemum plants, applying insecticides during the growing season, and releasing biological control agents early in the crop production cycle.

Figures 3. Terminal growth of chrysanthemum plant extensively infested with chrysanthemum aphids (Photo: Raymond Cloyd).

Figure 4. Chrysanthemum aphids feeding on new terminal growth (Photo: Raymond Cloyd).

Figure 5. Chrysanthemum aphids feeding on underside of leaf (Photo: Raymond Cloyd).

Figure 6. Black sooty mold on leaf (Photo: Raymond Cloyd).

Figure 7. Lower leaves of chrysanthemum plant covered with molted skins (Photo: Raymond Cloyd).

Scouting

Chrysanthemum plants should be checked once per week to detect chrysanthemum aphids early in the growing season. Chrysanthemum cultivars susceptible to chrysanthemum aphids include 'Gigi™ Yellow', Gigi™ Orange', 'Gigi™ Coral', 'Cheryl™ Sparkling Yellow', 'Cheryl™ Frosty White', and 'Cheryl™ Spicy Orange'.

Physical Removal

Remove extensively infested chrysanthemum plants to prevent chrysanthemum aphids from spreading to noninfested plants. In addition, check plants near those extensively infested with chrysanthemum aphids because they may also be infested with chrysanthemum aphids.

Figure 8. Thorough coverage of chrysanthemum plants with complex plant architectures is difficult (Photo: Raymond Cloyd).

Insecticides

Insecticides can be applied to manage chrysanthemum aphids below plant-damaging levels, although thorough coverage of all plant parts, including terminal growth, leaf undersides, and stems is important. However, thorough coverage of plants with complex plant architectures (Figure 8) will be difficult. Use water-sensitive spray cards (Figure 9) to verify actual coverage of plants with insecticide spray applications. Repeat applications will be required because of the reproductive ability of chrysanthemum aphid females. Furthermore, thoroughly water all chrysanthemum plants to be treated and apply insecticides in the early morning or late evening so residues dry before plants are exposed to direct sunlight. Apply systemic insecticides as a liquid drench or as granules to the growing medium early in production before chrysanthemum aphids are noticed or established. Rotate insecticides with different modes of action across generations to delay the development of resistance.

Biological Control

There are no parasitoids commercially available for use against chrysanthemum aphids. However, green lacewing, *Chrysoperla rufilabris* or *Chrysoperla carnea*, larvae, which are predators of aphids, may be an option, although they must be released early in production to maintain chrysanthemum aphids below plant-damaging levels.

Figure 9. Water sensitive spray cards can be used to assess the coverage of plants with insecticide spray applications (Photo: Raymond Cloyd).

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