

Managing Aphids on Cool Season or Winter Crops

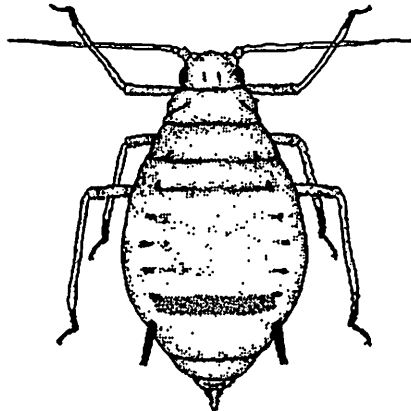
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Many growers are growing cool crops because of the steady market demand. In addition, these crops require cool growing conditions which may save on fuel costs. However, during this time of year, many of the common greenhouse insects, such as aphids, will not reproduce as rapidly as when temperatures and daylength increase in the spring. All too frequently, aphids will remain undetected on the lower leaves until the populations explode when the plants are in bud and ready for sale.

Damage

Aphids feed by inserting their stylet-like mouth parts directly into the phloem and removing plant sap. Plants may become stunted with curling and twisting of the younger foliage. As aphids feed, large quantities of sticky honeydew is excreted which promote the growth of sooty molds. Their whitish cast skins detract from the appearance of many ornamentals. Aphids may transmit certain viruses in the greenhouse. However, aphid transmission of viruses is much less common than the thrips transmitted impatiens necrotic spot virus.

In recent years, vegetatively propagated petunias have become infected with viruses such as alfalfa mosaic virus or potato virus Y that have the potential to be transmitted by aphids. Promptly rogue diseased plants and monitor aphid populations closely. Minimize the potential for disease spread by obtaining virus-indexed plants and not carrying over stock plants.

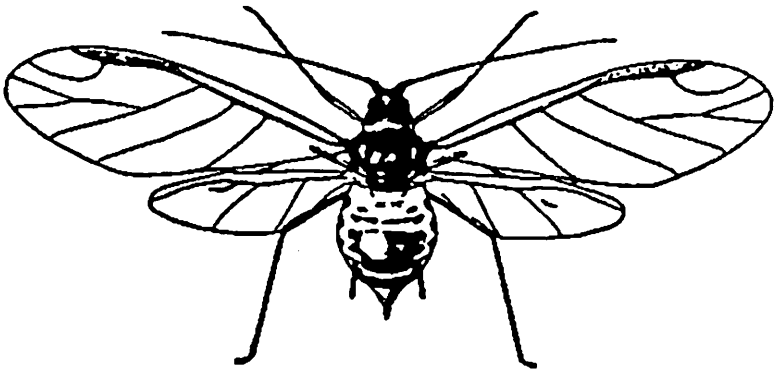


Monitoring

A weekly scouting program is essential to detect aphids early before crops are in flower. Randomly spot check several plants in each bench and the hanging baskets above the bench. If ground covers are growing beneath the bench, be sure to spot check those plants, too. Inspect the young growing tips and buds of aphid-prone plants such as anemone, calceolaria, cineraria, columbine, dianthus, English ivy, Easter lily, freesia, myrtle, nasturtium, primrose, snapdragons, sweet peas, viola and many overwintered herbaceous perennials. Keep records of which cultivars are most susceptible to aphids. Look for honeydew and cast skins. If possible, gently tap the foliage over a white sheet of paper to look for aphids, mites and thrips larvae.

Both the green peach aphid and the melon aphid are the most troublesome to growers. Because melon aphids are less likely to form winged adults than green peach aphids, growers may only see them on a few isolated plants. Herbaceous perennials overwintered in cold frames may be the source of a later aphid problem. Be sure to inspect and remove weeds under the benches to prevent reinfestation of your crops.

Yellow sticky cards will only attract winged adults and should not be relied upon to detect an aphid infestation at this time of year. When adults are detected on your cards, intensify your monitoring efforts until you detect aphids on plants in your greenhouse.



Chemical Management

Aphids are difficult to control with insecticides for a number of reasons. Control failures may be due to poor spray tech-

niques, inadequate coverage or a high pH of the spray tank mixture. Thorough coverage is needed to contact aphids on the lower leaves. Different strains or biotypes may occur in a given area. Tag infested plants to serve as indicator plants in order to closely monitor the effectiveness of materials in your greenhouse. Among green peach aphid populations, multiple resistance has been reported to organophosphates, carbamates, and pyrethroid insecticides. Winged forms of melon aphids are two to three times more resistant to organophosphate pesticides than wingless forms.

Systemic materials may be more effective because aphids tend to ingest large quantities of plant sap. Two applications of wet sprays five to seven days apart tend to be more effective than one treatment. There are over 25 different materials registered for aphid control. Select an insecticide from a particular chemical class for one to two generations before rotating to a material in another class. Some New England growers have mentioned good results when using Orthene, Thiodan, Nicotine or Marathon 1 G. Consult the *1997-1998 New England Greenhouse Floricultural Recommendations* for further information.

References

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