

HOME GROUNDS FACT SHEET



Cornell University
Cooperative Extension
Nassau County



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Whitefly

Adult whiteflies are small insects, about one sixteenth of an inch in length, with four powdery white wings. Where heavily infested plants are disturbed, one may notice a "cloud" of tiny white insects rising above it. The eggs, crawlers, scales and pupae are yellowish and found primarily on the undersides of leaves.

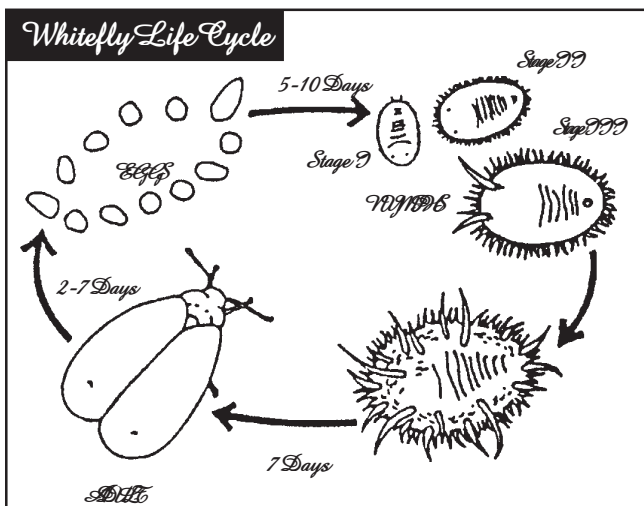
Injury

Whiteflies are sucking insects, feeding on plant sap. Weakened plants may exhibit symptoms of stunting or wilting and have large amounts of honeydew on them.

In New York State, the greenhouse whitefly is the most common species. It feeds on over 60 host plants. It usually does not survive our winters out-of-doors to cause new infestations.

Life Cycle

The whitefly has a complex life history. It undergoes five distinct stages of development. Eggs are laid on the undersides of the leaves. At first they are pale yellow, but turn gray before hatching in 5 to 7 days. The crawler is a small, translucent insect that is mobile; it actively searches for a feeding site. In a few days crawlers settle down and begin feeding, soon transforming to the sedentary scale stage. The scale is a highly modified sucking insect. Its outer covering thickens after it feeds, giving it added protection. Adult development (pupation) occurs within the scale cover. Four days later, adults emerge. The life cycle takes about 40 days, depending on temperature.



Integrated Pest Management (IPM)

Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

* A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. *insecticide*, *fungicide*, *herbicide*, etc.

Control

Learn to recognize this pest in all its stages. Do not purchase infested plants. Prevent whiteflies from entering growing areas.

Monitoring Adult Populations

Whiteflies have a natural attraction to the color yellow. If yellow cards are painted with a sticky material, whitefly adults will fly to them and become stuck. The cards should be attached to stakes or suspended a few inches above the tops of plants. This will allow you to get a good idea of the extent of infestation. This method works best in green houses. Cards and sticky material are readily available from greenhouse suppliers.

Biological Controls

Encarsia formosa is a specific parasite of the whitefly. It lays its eggs within the whitefly eggs and is most effective when temperatures are 70½ or above. They take one month to become established and should be released when whiteflies are first discovered. A dense whitefly population cannot be immediately controlled with these tiny wasps.

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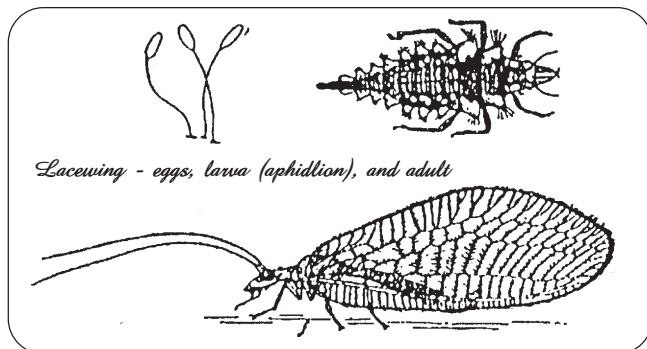
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Biological Controls - continued

Lacewings (many species in the family Chrysopidae) have net-like, delicate wings, long antennae and prominent eyes. The larvae are narrowly oval with two sickle-shaped mouth parts that pierce their prey and extract fluids. Lacewing larvae also eat aphids, leafhoppers, scales, mites and the eggs of butterflies and moths. Adults feed on flower nectar.



Lacewing - eggs, larva (aphidlion), and adult

Chemical Control

Whiteflies are difficult to control. Eggs are resistant to most insecticides, as are the scale and pupal stages. The crawler is quite susceptible to insecticides, especially contact materials, and the adults are also susceptible to fumigant and contact materials. All stages, however, can coexist. A single application of a particular insecticide only affects the susceptible stages present at the time of treatment or shortly thereafter. Other stages will survive and ultimately reproduce again, continuing the cycle. Therefore, when sprays are recommended, they are usually applied at 5-day intervals covering the 40 day period it takes for the completion of the life cycle. This means 8 sprays spaced 5 days apart. Missing even one application would allow the pest to continue to develop and possibly reinfest the area.

House Plants

Insecticidal soap can be used according to label directions. (see note A.) If you use the product indoors, be sure the formulation you select is approved for indoor use. It is especially important that good coverage of the undersides of the leaves is obtained or control will not be effective.

Ornamental (Outdoors)

Whitefly populations are not usually sufficiently damaging to make treatment necessary. If they are, use insecticidal soap in early June, mid-July and mid-August. Treat undersides of leaves. (see note A.)

Vegetables and Fruit:

Do not purchase whitefly-infested transplants; inspect carefully before purchasing. Apply insecticidal soap to the underside of the leaves as necessary. Follow label directions carefully. Wait one day before harvesting. (see note A.)

note A. Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

Prepared with assistance from Carolyn Klass, Senior Extension Associate-Cornell

Do not use a hose-end sprayer!

Hose-end sprayers do not dissolve, mix or apply pesticides accurately or evenly. The changing rates of water pressure, different hose diameters and water temperature provide variables that prevent accurate mixing and delivery. A hand-pump or powered tank sprayer, where the pesticide is pre-mixed to the proper dilution, allows for the application of a known mixture as per label instructions.

WHENEVER YOU USE A PESTICIDE,
ALWAYS READ THE LABEL AND FOLLOW
THE MANUFACTURER'S INSTRUCTIONS
AND RECOMMENDATIONS.

"This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office (631) 444-0340. Read the label before applying any pesticide. Cornell Cooperative Extension and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products is made or implied."