Insect control, warm-season turf

Damage done by feeding beetles.

Learn to anticipate pest problems and spot situations conducive to pest outbreaks.

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■ Managing the numerous insect and mite pests found in landscape situations is a challenging and often frustrating task. Due to the variety of plant landscapes, many different species of insects and mites can be found. However, remember not every insect or mite is a potential problem.

Learn the common pests, and become familiar with common plant materials in your area. Next, learn about the insect and mite problems associated with these plants. Learn to recognize these pests and the damage they cause. While some plants are relatively pest free, others are pest prone and require a lot of maintenance to keep them healthy and pest free. Once the pests are identified, collect information on their lifecycle and identify environmental conditions which favor a rapid increase in numbers.

Sucking insects pests damage plants by removing sap from plant tissues. Symptoms of infestation:

- wilting plant tissues;
- curling or distortion of new growth;
- chlorotic spots or stippling of leaf surface;
- sticky substance or black fungal growth on upper leaf.

Common insects and mites causing this type of damage: aphids, scale insects, lace bugs, whiteflies and spider mites.

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Common warm-season pests

■ About 1¼ inches in length, **aphids** are soft-bodied insects that vary in color from green to yellow to black. Some are winged during certain times of the year. Generally, aphids can be recognized by their cornicles, a pair of tube-like structures projecting from the rear of their bodies. They are frequently found in large numbers, clustered together on the backs of leaves or on the stems of new growth.

Scale insects are very small, soft-bodied pests that secrete a protective covering over their bodies. These coverings vary in color from white to red to black. Some are flattened while others are more turtle-shaped. This covering protects the scale and makes control difficult. Scale insects are most easily controlled when insecticide applications are timed for egg hatch when the "crawler" stage of the scale is present.

Lace bugs get their name from the appearance of the area behind their head and the wing covers. The area forms a lacelike covering over the body of the insect. They are 1/8 to 1/4-inch long, and are partially transparent. Lace bug damage to the upper leaf surface appears as white to yellow chlorotic spots and the lower leaf surfaces will be cluttered with black spots and the old cast skins of immature lace bugs.

Whitefly adults resemble small gnats. They range in size from 1/16 to 1/10 inch and have four broad, delicate, milk-white wings. Immature whiteflies are found on the underside of leaves and resemble scale insects. They are oval, flattened and yellow to almost transparent. Whiteflies often occur in tremendous numbers and when they are disturbed, the air is filled with a white cloud of insects.

Spider mites: Often called "red spiders," these are most often found on the backs of leaves. They are so small they can barely be seen with the unaided eye. The adults are oval-shaped and have eight legs and no antennaae or wings. Expect rapid increase in spider mite populations during periods of hot, dry weather.

Chewing insect pests cause damage by consuming plant parts such as leaves and stems, or by burrowing in plant tissues to cause damage to the host plant. Symptoms of chewing insect pests include holes in leaves, silvering of leaf tissue, complete removal of leaf tissues, burrowing in or around stems, branches or trunks of plants. Common insects causing this type of damage include tent caterpillars, webworms, bagworms, shadetree borers, and other beetles.

Tent caterpillars are attractively-colored caterpillars that reach about 1½ inches in length. The have a few long hairs on their bodies, mostly along the sides. They are commonly seen in the early spring, closely associated with the webs or "tents" they construct in the crotch of small limbs on their host plant. This tent serves as a refuge for the larvae during the night and during rainy weather. They have only one generation per year.

Webworms are about one inch long when full grown and are pale yellow or green in color. There is a broad, dusky stripe running down the back, bordered on each side by a yellow stripe. They are covered with tufts of long whitish hairs. They are found inside unsightly webs at the terminal ends of branches on their host plants. There are three to four generations per year in the southern U.S.

Bagworms build and live in a 1- to 2-inch tough, tear-shaped portable silken case. These bags are the insect's most easily seen and identifiable feature. Outside, the silken texture of the bag is somewhat concealed with layers of leaf, twig and bark fragments. The bag has an opening at the larger end that allows the worm to partially crawl out to feed and make repairs to its bag.

Shadetree borers: Many insects boring or living in the wood of shade trees are the larval or grub stage of beetles. Most of these pests attack trees or shrubs that are already weakened or injured by transplant shock, drought, flooding, soil fills, mechanical damage or disease. These larvae or grubs are 1/4 to 2 inches long, yellowish white, legless with either a fleshy, rounded head area or a large flattened area behind the head. They are found burrowing or tunneling under the bark of infested trees.

Warm-season insect control strategies

Pest	Host plants	Control practices
Aphids	Many types of trees, shrubs, ground-covers, bedding plants.	Inspect plants often; watch for lady beetles and other beneficial insects associated with aphids. Aphids can be "washed" off with stong stream of water when populations are light, or beneficial insects are present. For chemical control, use a product registered for aphid control and labeled for use on the host plant. Follow label directions. Apply to ensure good coverage of new growth and undersides of leaves. Two to three applications may be needed to control larger numbers.
Scale insects **armored scales** **soft scales**	Many species of trees, shrubs and groundcovers.	When possible, use plant materials not prone to scale infestation. Inspect susceptible plants frequently for scale insects. Examine infested plants for lady beetles and other beneficial insect populations associated with scale insects. Prune out heavily infested plant parts when possible. Treat with horticultural oils during the dormant season or with conventional sprays in spring and summer when crawlers are actively moving on the plant. Cover both sides of leaves and all twigs and branches. Make two applications at 14-day intervals to control heavy scale infestations.
Lace bugs **azalea lace bug** **hawthorn lace bug**	Azalea, laurel, pyracantha, sycamore, hawthorn, quince, elm, apple, oaks.	Beginning in early spring, inspect susceptible plant every week for infestations. Wash light infestations off host plant with strong stream of water.Chemical control most effective during first generation inearly spring. If treatment is made in late summer or fall, repeat applications at 10-14 day intervals may be needed to maintain effective control.
Whitefly	Gardenia, crepe myrtle, ligustrum, azalea and many other woody ornamentals and trees.	Monitor susceptible plants weekly for developing infestations. Place yellow wooden panels coated with a sticky substance near host plants to monitor for whiteflies. When insecticides are needed for heavy whitefly populations, choose a product registered for whitefly control and labeled for use on the host plant. Apply product per label directions. Apply to ensure good coverage of the undersides of leaves. Often, 3-4 applications at 5-7 day intervals are needed to control heavy populations.
Tent caterpillars	Plum, peach, apple, hawthorn, oaks, sweet gum and other trees.	Inspect trees for egg masses during winter pruning; remove and destroy egg masses. Prune out webs when first noticed; destroy webs and crush caterpillars. Time insecticide applications for presence of feeding caterpillars. Treat foliage of infested trees with labeled insecticide. In environmentally sensitive areas, use a product containing *Bacillus thuringiensis* and apply per label directions.
Webworms	Oak, pecan, hickory, other ornamental trees and shrubs.	Inspect trees in early summer for webs. Prune out and destroy webs, crush insects. Time insecticide treatment for presence of feeding caterpillars in webbing. Treat foliage in webs.

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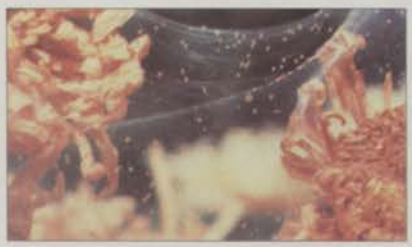
Pest	Host plants	Control practices
Bagworms	Cedars, maples, arborvitae, cypress, elms, pines, willows, sycamores and other broadleaf and coniferous trees and shrubs.	During winter, remove and destroy all bags. Treat infested plants when bags are still small, in May to early June. When worms are larger, two sprayings at 7- to 10-day intervals may be necessary for control. Select a product labeled for bagworm control and labeled for use on the nhost plant. In environmentally sensitive areas, use a product containing *Bacillusthuringiensis*.
Shadetree borers	Ash, birch, elm, maple, dogwood, fruit trees and many other trees and woody ornamentals.	To prevent borers, follow proper watering, fertilizing and pruning practices. Remove stress factors from infested trees when possible. Protect weak or stressed trees from infestation or reinfestation by use of products containing chlorpyrifos (Dursban) or lindane. Apply first application in April and subsequent applications in late May, mid-July and late August. Spray trunk and lower branches to point of runoff.
Beetles **elm leaf** **imported willow leaf beetle** **Japanese**	Many woody ornamentals and shade trees.	Inspect trees often. Apply insecticides when young larvae are present, or before large numbers of adults are present. Products containing *Bacillus thuringiensis tenebrio* or *San Diego* can be used in environmentally sensitive areas. Repeated insecticide applications may be needed to maintain control when beetles migrate in from surrounding areas.
Spider mites	Many woody ornamentals, trees and bedding plants.	Spider mites reproduce rapidly; inspect susceptible plants in earrly spring through fall. Several miticide applications at 5-7 day intervals may be needed to eliminate heavy mite populations. *Source: Dr. Sparks*

Aphids gather in clusters.

Lucust borers live under tree bark.

Tent catepillars appear in early spring.

Cushion scale are most vulnerable in the early "crawler" stage.



Spider mites are usually found on the underside of leaves.