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Cottony Maple Scale: Biology and Control

Michigan State University

Cooperative Extension Service

Woody Ornamental Tips

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Woody Ornamental Tips

Cottony Maple Scale: biology and control

By Gary A. Dunn, Department of Entomology,
and M. Keith Kennedy*

Cottony maple scale (CMS), as its name implies, produces a conspicuous, white, cottony mass beneath its cover during early summer. These masses and the scale's large size ($\frac{1}{4}$ in) make it very easy to spot on the undersides of tree branches. Although trees are rarely killed, dieback of individual branches and a general decline in plant vigor will occur in only a few seasons.

Damage symptoms

Check for dieback of individual branches or yellowing of foliage in early summer, sooty mold on foliage in mid- to late summer, and the presence of white, cottony masses on branches in June.

Similar damage

Lecanium scale also may cause branch dieback and growth of sooty mold, but it does not produce cottony masses. Wood-boring insects, disease or a physiological problem may cause dieback or off-color foliage.

Hosts

Cottony maple scale prefers maple trees, especially silver maple, but it also attacks other deciduous trees and shrubs, including alder, apple, beech, black locust, boxelder, dogwood, elm, euonymus, honeylocust, linden, mulberry, oak, osage orange, peach, pear, plum, poplar, rose and sumac.

Identification

Crawlers are about 0.5 mm long ($\frac{1}{50}$ in), flat, oval and pale yellow. Adults are light to dark brown, 4-6 mm ($\frac{1}{4}$ in) long and oval or convex. A large, white,

cottony mass protrudes from beneath one end of the scale cover.

Life cycle

Cottony maple scale overwinters as immature females (nymphs) on twigs and branches. The females mature when plant growth resumes in the spring. They secrete conspicuous, white, cottony masses, beneath which they lay 500 or more eggs in late May and early June. The eggs hatch around July 1, and the tiny crawlers exit from beneath the female to migrate to the leaves. The crawlers settle on the leaf undersides, where they insert their threadlike mouthparts into plant tissue along the major leaf veins and begin sucking plant sap. The males mature in late August and early September, mate with the immature females and die. In late September, just before leaf drop, fertilized female nymphs migrate from leaves to twigs and branches to overwinter. Only one generation occurs each year.

Destructive stages

The crawlers feeding on the leaves during July and August secrete large amounts of a sticky substance called honeydew onto the lower leaves. A sooty mold (fungus) frequently develops on the honeydew-coated leaves and greatly reduces the amount of sunlight available to leaves for photosynthesis. The most serious damage, however, is done to the branches and twigs by the maturing nymphs in the spring. Large numbers of scale can cause a yellowing of foliage, followed by premature leaf drop and death of individual branches. In severe cases, stressed trees may die or be attacked by other insects and diseases.

Control

Whether you control cottony maple scale depends on its population and the number and size of infested trees. When scale numbers are low (fewer than five females/branch), chemical control is not necessary.

**Extension specialist, MSU, 1975-81.*

However, control may be advisable when scale are extremely abundant, especially on young trees. Mature trees often can tolerate high scale numbers for several years, after which time the scale population may begin to decline naturally. Frequently, mature trees may be too large or numerous to be treated effectively by the homeowner. If a commercial sprayer is not economically feasible, regularly water and fertilize infested trees to promote vigorous growth and to lessen the impact of the scale.

Biological—Many parasites and predators attack maple scale, including several species of ladybird beetles. Outbreaks often subside in two to three years because natural enemies control the scale. Unfortunately, the predators and parasites are extremely susceptible to many insecticides used in the urban environment and are often eliminated before they can

adequately control the scale. If this happens, you may need to control the scale with chemicals.

Non-chemical — For small trees that can be reached safely with a stepladder, hand remove the female scale from infested branches.

Chemical — The ideal time to control this scale is early July, when the crawlers become active. Apply a foliar spray of Sevin (carbaryl), malathion, diazinon or an all-purpose spray such as Isotox. Direct the spray at the leaf undersides where the crawlers settle. One application during the first 7 to 10 days of July should adequately control this insect, but foliar sprays later in July and even August also are effective. Dormant oils often provide excellent control of overwintering scale nymphs, but many maples, a common host of the scale, can be injured by oils—therefore, be cautious if you treat with oils.

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