

SYCAMORE SCALE

Integrated Pest Management for Home Gardeners

Sycamore scale, *Stomacoccus platani*, occurs only on sycamore. It is considered the most important insect pest of sycamore trees in California. Both native and introduced sycamores and plane trees (*Platanus* spp.) are affected.

IDENTIFICATION

The sycamore scale is so tiny, about $\frac{1}{16}$ inch long, that many people fail to recognize it as an insect and mistake it for a disease symptom. To detect this pest, examine the yellowish to brown dots (Fig. 1) on the undersides of leaves with a hand lens. A tiny scale will be present in the center of the spot. Scales are yellow to brown at maturity. Females can be recognized by the cottony white tufts that emerge from beneath

the body and protrude from bark cracks and crevices. The orangish yellow eggs are laid within these cottony tufts; each female produces from 50 to 100 eggs. When the eggs hatch, the young crawlers are also orangish yellow in color.

LIFE CYCLE

Sycamore scale overwinters on woody parts of the sycamore tree in bark fissures and beneath bark plates (Fig. 2). In late winter, eggs are laid and the immature scales, known as crawlers, move to leaf buds as they begin to open in spring. As leaves expand, young scale nymphs settle at feeding sites on the undersides of leaves. After completing feeding, most mature



Figure 1. Spotted, distorted leaves caused by sycamore scale infestation.

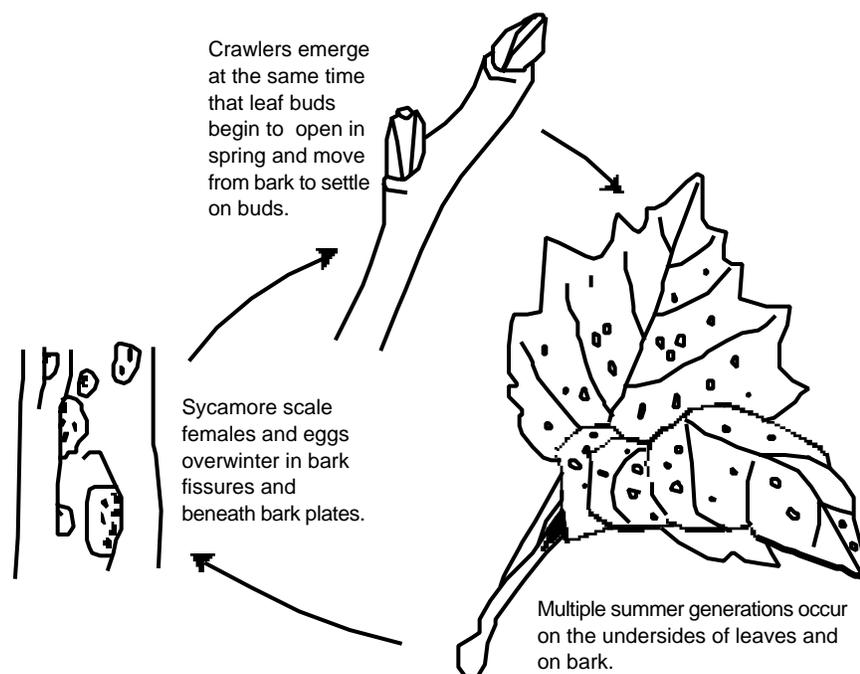


Figure 2. Life cycle of sycamore scale.

scales return to the trunk and limbs of the tree and produce eggs to begin the next generation; some females and eggs, however, occur on leaves in summer. There are several generations each year.

DAMAGE

Leaves infested by this pest develop yellow spots where each scale is feeding. These spots gradually turn brown as the affected tissue dies. Young infested leaves are often distorted and smaller than healthy leaves and drop prematurely. Premature leaf drop, however, may also be caused by sycamore anthracnose, a plant disease caused by the fungus *Apiognomonina veneta*. Anthracnose can be distinguished from sycamore scale by leaf symptoms; it causes a browning along the leaf veins, often including large portions of leaves, not the circular spots that are characteristic of a sycamore scale infestation.

In addition to the effect on the tree's leaves, sycamore scale also feeds on the bark and causes the surface of infested twigs and branches to develop a rough texture. The impact of this bark feeding on the tree's overall health has not been studied.

MANAGEMENT

Sycamore scale damage is most obvious during late spring when leaves may be severely spotted. Treatments are not recommended at this time because it is difficult to thoroughly spray the undersides of leaves where scales feed. In addition, the lower leaf surface of native *Platanus racemosa* has dense mats of tiny hairs that protect the scales from the spray.

Biological Control

Two species of lady beetles, the twicestabbed lady beetle, *Chilocorus orbus* (=stigma), and *Exochomus quadripustulatus*, are commonly found under bark plates of trees feeding on sycamore scales. These small black beetles have two red spots or four yellow to orange spots, respectively, on their backs.

For more information contact the University of California Cooperative Extension or agricultural commissioner's office in your county. See your phone book for addresses and phone numbers.

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To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned.

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Monitoring

If sycamore scale was a problem the previous spring or summer, monitor regularly for sycamore bud break beginning in late December. Inspect terminals about once each week to determine the occurrence of bud break. Bud break is when the green tissue of swelling buds becomes clearly visible in gaps between the opening or splitting bud scales—the dark, hard, bud coverings. Bud break, which varies from year-to-year and among locations, occurs when local conditions become favorable for the resumption of tree growth. These same conditions trigger the emergence of sycamore scale crawlers, the stage most susceptible to insecticides.

If the pest history of the trees is uncertain (it is unknown whether sycamore scale was a problem during the previous spring and summer), also look for sycamore scale eggs and crawlers to determine the need for treatment. Examine the woody areas of the tree and look for tiny masses of white, cottony wax in the cracks of bark and under bark plates. The orangish yellow eggs are laid within these masses and can be seen with the use of a hand lens (20X). Both eggs and crawlers can be seen as yellow spots within the white, cottony material.

Chemical Control

If scales are abundant and damage cannot be tolerated, apply 1% horticultural oil or insecticidal soap at bud break

(i.e., just as the buds begin to open). If bud break is missed, application can be made during early leafing-out (before leaves are fully expanded), but this may be less effective because of poorer coverage when foliage is present. When bud break occurs, the crawlers are present in their highest density and can be sprayed before the foliage will interfere with coverage. Thoroughly spray branch tips and use a high-pressure sprayer to reach scales under the bark plates on trunks and large limbs. Malathion can also be used at this time but it is more likely to cause secondary outbreaks of other pests in the landscape. Avoid the use of diazinon in landscapes and gardens because of problems from its runoff in urban surface water and contamination of municipal waste water.

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Johnson, W. T., and H. H. Lyon. 1985. *Insects that Feed on Trees and Shrubs: An Illustrated Practical Guide*. Ithaca: Cornell Univ. Press.

Svihra, P., C. S. Koehler, and C. Fouche. 1994. *Sycamore Scale Treatments Most Effective at Bud Break*. HortScript #1. Univ. Calif. Coop. Ext., Marin Co.

WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

Do not place containers containing pesticide in the trash nor pour pesticides down sink or toilet. Either use the pesticide according to the label or take unwanted pesticides to a Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Hazardous Waste Collection site nearest you. Dispose of empty containers by following label directions. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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