

Providing Leadership in Environmental Entomology

Department of Entomology, Soils, and Plant Sciences • 114 Long Hall • Clemson, SC 29634-0315 • Phone: 864-656-3111
email: dpento@clemson.edu

SCALE INSECTS

Scale insects are often mistaken for fungal disease because many cluster together, resembling a crusty or fuzzy mass that often oozes when rubbed. Scale gets its name from the protective fish scale-like covering produced by a tiny insect about the size of a pencil tip. Scale insects anchor to plant parts by their piercing-sucking mouthparts and feed on plant sap. Individual scales may look like oval or rod-shaped bumps, ranging in color from white, yellow, grey, brown to black. These insects can be a major problem on many of our evergreen and deciduous trees and shrubs and can occur on leaves, twigs, branches or trunks.

TWO TYPES OF SCALE INSECTS

Soft Scales secrete a thin, waxy layer over themselves, which cannot be separated from the insect's body. Because they consume large amounts of plant sap, soft scales excrete a sticky, sugary liquid called "honeydew" as a by-product of their feeding. Honeydew provides the perfect source for the growth of a black mold, called "sooty mold". Large patches of sooty mold that blacken leaves and stems are often what draws attention to a scale problem. Soft scales range from 1/8 to 1/2 inch in size.



Soft Scale on Banana Shrub

Armored Scales secrete a hard, lacquered covering over their bodies. This cover is not attached and can usually be separated from the scale's body. They typically are smaller than soft scale, ranging from 1/16 to 1/8 inch. Armored scale insects do not excrete honeydew and so do not support sooty mold growth.



**Armored Tea Scale on
underside of Camellia leaf**

Life Cycle

Though the biology differs for various scale species, understanding some general characteristics is helpful in controlling this insect. Immobile, legless females lay eggs under their bodies then die. Eggs hatch into tiny pinkish to yellow mobile immatures called "crawlers" that move around the plant seeking suitable sites to feed, secrete their scale covering, and mature to adulthood. Some species overwinter as eggs beneath the dead female's cover and hatch in the spring; others overwinter as fertilized females and resume feeding in the spring, when they lay eggs and die. Adult male scale insects are tiny and winged; do not feed; and live only a few hours. Females of many soft scale species

reproduce without mating. Armored scales are more likely to have several generations per year while most soft scales have only one.

Damage

Scale insects obtain food by sucking vital fluids from the host plant, causing yellowing and possibly stunted growth of the affected leaves or needles. A heavily infested plant will have extensive leaf yellowing, premature leaf drop, and possibly branch dieback. A plant weakened by a scale population is often more susceptible to damage by a secondary pest that may ultimately kill the plant.



Tea Scale Damage on upper side of Camellia leaf

Although sooty mold growth does not damage the plant, it looks unsightly and in large amounts can interfere with photosynthesis, slowing plant growth.



Cottony cushion scale

Prevention

The best defense against severe scale infestations is to monitor landscape plants weekly throughout the year, paying close attention to the undersides of leaves and stems for scale, and avoid over-fertilization. Insects often lay more eggs and survive better on plants that are lush from heavy doses of nitrogen.

Control of Sooty Mold

Sooty mold can be washed off, but not easily. It washes off and weathers away better following horticultural oil applications.

Chemical Control

Smothering scale insects by applications of horticultural oil is the easiest and often the most effective means of control. There are numerous types of oils, each with different temperature capabilities. There are some ultra light oils that can be used during the growing season, but it is critical to read the label carefully for guidelines on plant sensitivity and temperature restrictions. Most contact insecticides cannot penetrate the protective covering of the immobile scale nymphs and adults. Only the crawler stage is susceptible to contact insecticides. Systemic insecticides containing the active ingredient imadacloprid may provide control of soft scales, but is generally not effective for armored scales.

For other publications in our Entomology Insect Information Series visit our web site at <http://entweb.clemson.edu/cuentres/eiis/index.htm>

Prepared by Nancy Palisin, Ag Science Assistant and Carlin Munneryn, County Extension Agent, Georgetown County Extension Office, Clemson University.

This information is supplied with the understanding that no discrimination is intended and no endorsement by the Clemson University Cooperative Extension Service is implied. Brand names of pesticides are given as a convenience and are neither an endorsement nor guarantee of the product nor a suggestion that similar products are not effective. Use pesticides only according to the directions on the label. Follow all directions, precautions and restrictions that are listed. EIS/TO-23 (New 10/2004).