

Soft Scale Insects

Solution Sheet

The Problem

Scale insects (Hemiptera) are common, sap-sucking pests in greenhouses, nurseries, and landscapes. They spread easily through plant material and are classified into two groups: armored and soft scales.

Soft scale are small ($<1/8''$) insects that use hair-like mouthparts to extract sap via the phloem from leaves and branches. These insects can secrete a waxy covering, protecting them from adverse environmental conditions as well as insecticide applications, which makes control a challenge. They excrete 'honeydew', a sweet, sticky substance that attracts ants and is commonly colonized by sooty mold fungi.

What to Look For

Light infestations are hard to detect, but heavy ones can cause yellow spotting, leaf shine, chlorosis, stunting, dieback, defoliation, and black sooty mold on leaves and stems. Soft scales are typically larger and appear dome shaped, covered with a waxy substance. Fertilized females will feed and eventually lay eggs that hatch into tiny crawlers. The crawlers will find a suitable feeding site, but unlike armored scales, female soft scales are mobile in every life stage until they begin to produce eggs. Common soft scales include magnolia scale, Fletcher scale, calico scale, tuliptree scale, croton scale, lecanium scales, brown soft scale, tortoise scale, striped pine scale, cottony scales, wax scales, Kermes oak scale and European elm scale.



Fig. 1. Calico scale has a waxy body coating that shields them from predators and pesticides.

The Solution

Scale insects are excellent opportunists and are more likely to become an issue on stressed plants. This is especially true when plants are relocated via shipping or transplanted into a landscape. This emphasizes the importance of early and routine scouting of plants for scales. Scales are most active in early spring and continue through summer except for more tropical areas where crawlers can be found all year long.

Highly susceptible plants should be monitored closely. When it comes to effective control, early detection followed by isolation of infested plants is crucial. Scale outbreaks require immediate treatment with an effective insecticide to minimize further damage and eliminate the potential for spread to healthy plants.

For optimum control, insecticides should be applied preventatively or when crawlers are active. Timing of application is especially important for contact insecticides. It is always important to positively identify all insect pests including scales, especially when using biological controls, as there are some scale parasitoids that are species specific.

Table 1. Products available for scale insect control. Efficacy varies with each species of scale insect. All products perform better on foliage-feeding scale. It is important to understand the life cycle and number of generations of the target scale for best timing of application. Best results are obtained by targeting crawlers.

Solution	IRAC Group	REI	Rate/100 Gallons	Application Intervals
Talstar Select (RUP)	3	12 hr	Foliar and bark control: 10-20 fl oz	Treat trunks, stems and twigs in addition to plant foliage. Use with oil or spreader-sticker to improve coverage and penetration through the scale wax. Not a neonicotinoid, but toxic to many natural enemies.
Merit 2F®	4A	12 hr	Drench: 0.2 fl oz (6 mL) per inch of trunk diameter (DBH) or per foot of shrub height	For trees larger than 15" DBH: 0.1 to 0.4 fl oz (3 to 12 mL) per inch of trunk diameter (DBH). Review Bee Box.
OR				
Safari®	4A	12 hr	Foliar: 4-8 oz. oz. Soil: 1.25-5.0 level teaspoons per inch of trunk diameter at breast height (DBH) Basal/Trunk: 12-24 oz	See label for detailed list of scale insects controlled, and site of use. Speed of control will be dependent on tree size, tree health, environmental conditions and how actively pests are feeding. Review Bee Box.
The following products are neonicotinoid free, with less impact on beneficial insects, parasitoids, and natural enemies.				
Altus®	4D	4 hr ²	Foliar 14 fl. oz.	Apply to crawlers or drench early as a preventative; 28 + days. For smaller trees and shrubs
Kontos®	23	None	Drench 3.4 fl. oz.	Apply to crawlers or drench early as a preventative; 28 + days. For smaller trees and shrubs
Aria®	29	12 hr	Foliar 2.1-4.3 oz.	Apply to crawlers or drench early as a preventative; 28 + days. For smaller trees and shrubs
Distance	7C	12 hr	Foliar 8-12 fl. oz.	Highly effective IGR. Check label for list of contraindicated plant species.
Talus® 70DF	16	12 hr	Foliar 12 oz.	Insect growth regulator (IGR) Do not exceed 2 applications per crop per growing season
Ultra-Pure® Oil	UNM	4 hr	Foliar 1 gal.	Re-apply every 2 to 3 weeks as necessary



Brown scale is a common soft scale pest of many plants. Note the different life stages, including the smallest 'crawler' stage.

ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS

Environmental Science U.S. Inc., 5000 CentreGreen Way, Suite 400, Cary, NC 27513. For additional product information, call toll-free 1-800-331-2867. www.envu.com. Please verify state registration of these products in your state before selling, using or distributing. Not all products are registered in all states. Envu, the Envu logo, and product logos are trademarks owned by Environmental Science U.S. LLC or one of its affiliates. Other trademarks are the property of their respective owners. ©2025 Environmental Science U.S. LLC.