Calico Scale (*Eulecanium cerasorum*)
Order: Hemiptera; Family Coccidae
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Hosts

This soft scale feeds on crabapple, sweetgum, star magnolia, honey locust, maple, dogwood, elm, oak, pear, redbud, tulip tree, all stone fruit trees, and many other species of trees.

Identification

Adult female scales have distinctive white and black coloration, and turn dark brown with age. Females are approximately 6-8 mm. Crawlers are pinkish-white in color. Nymphs are flattened and gray in color. They cover themselves with a waxy cuticle, which protects them from pesticide applications.

Biology

During the spring females swell, and they lay eggs during May. They produce large deposits of honeydew, a sugary fecal liquid, because they remove sap and other sugary fluids from the tree. Honeydew can give the plant a shiny appearance, and is frequently colonized by sooty mold fungus. Heavy infestation can result in premature leaf drop, stunt in growth, branch dieback, and plant death.

Females turn brown and die right before the crawlers hatch from the eggs around 519—902 (676 peak) GDD_{50}. The plant phenological indicator, *Syringa pubescens* ssp. *patula* 'Miss Kim' in full bloom, maybe used to also indicate crawler activity on host trees. Crawlers settle near the veins of foliage and begin to feed until they move back to twigs or sheltered areas on the bark during mid-September to over-winter as nymphs. Calico scale has one generation per year.

Management Strategies

Chemical control is an effective method of management for this scale. Applications should target crawlers when they are active, and before they settle down on the plant. A non-chemical method of control is hand scraping the females off of tree branches. Possible products available for use may be found in the following table.

Common name	Product name (for professionals)	Product name (for homeowners)
Abamectin	Abacide 2, Avid 0.15EFC	
Acetamiprid	Tristar 70 WSP Insecticide	OrthoMax Flower, Fruit and Vegetable Insect Killer
Buprofezin Pyriproxifen	Talus 40SC Insect Growth Regulator Distance Insect Growth Regulator	
Dinotefuran	Safari 20SG	Green Light Tree & Shrub Insect Control with Safari
Horticultural oil	Pure Green Horticultural Oil	Bonide All Seasons Spray Oil
Insecticidal soap	M-Pede	Bonide Malathion Insect Control
Carbaryl	Sevin	Sevin
Pyrethroids	Talstar, Scimitar	Products with active ingredients ending in "-thrin"

The above products are most effective against active crawlers or recently settled crawlers. Applications of horticultural oil, insecticidal soap, and IGRs against second instars were less effective than the broad spectrum insecticides, carbaryl or bifenthrin (Talstar) in some trials. Broad spectrum insecticides unfortunately have a greater impact on natural enemies found in the landscape or nurseries.

Sources:

Davidson, J.A., Raupp, M.J. (2009). Managing Insects and Mites on Woody Plants: an IPM Approach. Tree Care Industry Association.

Fulcher, A., Bowers, H. (July 2011). Calico Scale. University of Tennessee Department of Plant Sciences.

Hoover, G.A. (2011). Woody Ornamental Insect, Mite, and Disease Management. Pennsylvania State University College of Agricultural Sciences.

Hubbard, J.L., and D.A. Potter. 2006. Managing Calico Scale (Hemiptera: Coccidae) Infestations on Landscape Trees. Arboriculture & Urban Forestry 32(4): 138-147

Images from: US National Collection Scale Insects Photographs, USDA-ARS.bugwood.org;