



## SCALE

### Host Plants and Description

Scale are pests of trees, shrubs, houseplants and greenhouse crops, and many different species exist, but they can be divided into three categories: armored, or covered scale, unarmored scale and mealybugs. Scale feed by sucking sap, and many types are mobile only during a short stage of their lives. The body or shell of the dead female protects the eggs. When they hatch, crawlers strike out for leaves, stems, needles or bark, where they congregate to feed. At this stage, the scale resemble a series of rounded or flattened bumps. Some species secrete sticky honeydew, on which a black, sooty mold develops. Depending on the species, scale insects produce one to several generations a year.

### Plant Damage/Symptoms

Scale-infested plants lack vigor and grow poorly; often foliage is yellowed. Look for female scales along the stems and leaf veins or undersurfaces. Severe infestations can cause plant death.

### Controls

Maintain plants in good health; healthy plants are much less likely to be attacked by scale or other pests. Use a small amount of alcohol or dilute dish detergent to wipe scale off of houseplants. Apply dormant oil in late winter to control scale on trees and shrubs. Dormant oil sprays will kill those insects overwintering as adults rather than eggs, but may burn the foliage of evergreen plants. Imidacloprid will control scale if drenched in the root zone several weeks before crawlers are active. Insecticidal soaps may also be used, but applications are effective only when scale insects are in the crawler stage, and soaps will also kill predator and parasitic insects. Other recommended insecticides include acephate but use this only as a last resort; it will only work when crawlers are active. Remember that insecticides are just as likely to kill off predator insects as the scale, and the scale populations will rebound faster than the predators. Acephate should not be used on crabapple, sugar maple, redbud, American elm, Lombardy poplar or cottonwood.

## SOME COMMON SCALE INSECTS

### **Cottony Maple Scale**

Favorite hosts are maples (especially silver), dogwood, honey locust, euonymus, and other woody plants. This scale is easy to identify by the popcorn-like egg sacs that appear on branches, along with the large quantities of honeydew that are produced. Dormant oil sprays in early spring may provide some control. Crawlers should be treated when they are active in mid July; look for them on the undersides of leaves when *Hydrangea arborescens* 'Grandiflora' is in full bloom. The Twice Stabbed Lady Beetle is an effective predator that gives good control if present in sufficient quantity.

### **Euonymus Scale**

Feeds on pachysandra and bittersweet as well as euonymus. Look for grayish-brown, pear-shaped, flattened females and white, conspicuous males on twigs and on foliage. Control when crawlers are present in early June, when Japanese Tree Lilac and Catalpa trees are in early bloom.

### **Lecanium Scale**

This scale is found on a wide range of trees, including maple, crabapple, hackberry, oak, walnut and others. These are a type of soft, or unarmored scale, and the body shape might be flattened, somewhat convex or hemispherical. They range in size from 1/12 to 1/2 inch and usually produce only one generation per year. Many of the Lecanium scale insects remain mobile, and move from leaves to twigs and branches in the fall. Small populations do not require control, but if control becomes necessary, do so at the crawler stage, when *Hydrangea arborescens* 'Grandiflora' is in full bloom. Repeat two weeks later.

### **Magnolia Scale**

Heavy infestations for several years can result in severe damage or death to the plant and need to be treated. Female magnolia scales are red-brown, 1/2" long, initially covered with a white waxy powder. Eggs are laid in August, with gray to red crawlers active in September. Look for them on the undersides of one to two-year twig growth. Crawlers are vulnerable to spray applications in late September.

### **Oystershell Scale**

A pest of a wide range of woody plants, these scales are found primarily on branches, and are shaped like tiny oyster shells. Symptoms of infestation include reduced vigor, yellow-speckled leaves, and sometimes death. Control at the crawler stage. For brown oystershell scale this is when Bridal Wreath Spirea is in full to late bloom. The brown race may produce a second generation: this can be treated when *Hydrangea arborescens* 'Grandiflora' flowers are turning from white to green. Gray oystershell scales produce only one generation a year. Treat them when Bridal Wreath Spirea has finished bloom.

**Pine Needle Scale**

This pest can be found on the needles of pine and spruce. They appear as white specks on the needles and can cause needle drop and dieback if they are present in large enough numbers. Spray crawlers as Bridal Wreath Spirea blooms. Second generation crawlers may be treated when *Hydrangea arborescens* 'Grandiflora' flowers are turning from white to green. Repeat the second application in 7 to 10 days.

**San Jose Scale**

Adult females are flat and circular and males are oblong-oval. The insects infest both fruit and bark. Host plants include maple, redbud, rose, crabapple, magnolia and many others. As with most scales, crawlers are the only susceptible stage. Crawlers are oval and golden-yellow in color, present when *Catalpa* and *Syringa reticulata* are in full to late bloom.

**Mealybug**

A common pest of houseplants, some species also attack woody plants such as apple, holly, maple, magnolia and others. Look for them on the underside of leaves and in bark crevices. Mealybugs are covered with a white, waxy substance, and they produce honeydew and large quantities of sooty mold. (See also handout on mealybugs.)