Scale insects
By Scott Hininger
University of Wyoming
Cooperative Extension Service
Horticulture & Ag Profitability for N.E. Wyoming

7/26/2011

One plant pest I have been receiving calls on this year are scales. Scale insects are often inconspicuous pests of many evergreen and deciduous plants. They can occur on leaves, twigs, branches or trunks. Their small size and general lack of mobility make them difficult to notice by the casual observer. Scales derive their name from the shell-like, protective covering they form over themselves. Scale insects are broken into two categories:

Soft Scales—generally secrete an attached, thin, waxy layer over themselves. The soft covering they secrete cannot be separated from the scale's body. Soft scales typically move between branches and leaves during their lifecycle. They also produce honeydew, the stickiness and associated black sooty mold that grows on the honeydew can be an annoyance if cars, patio furniture, decks, etc., are underneath scale-infested trees.

Armored (Hard) Scales—use shed skins and wax that is unattached to their body to form their hard, shell-like cover. These covers can be separated from the scale's body. Hard scales typically do not move to leaves during their lifecycle and do not produce honeydew.

Immature scales, upon hatching from eggs, are soft-bodied, mobile and are termed "crawlers." These crawlers seek suitable sites in which to feed, secrete their protective shell, and mature to adulthood. The immobile, "shell stage" of scales are adult females; males are small, fly-like and infrequently seen.

Pine Needle Scale appears White, oval-elongate scales, 2.5–3 mm long the hosts include Pine, spruce, fir, hemlock and Douglas fir.

Pine Tortoise Scale, adult females are reddish-brown, wrinkled, helmet-shaped, and occur in clusters on twigs. The host plants include Scotch, Austrian and other pines.

Spruce Bud Scale, appears as globular, reddish-brown, adult females are found at the base of new growth, often in clusters of three to eight individuals. They closely resemble the buds of their host, which include particularly spruces.

Fletcher Scale, appears round, brown scales on twigs, at needle bases. The host includes yew, arborvitae, and juniper.

Oystershell Scale, appears as a purplish-gray, about 3 mm long, and shaped like tiny oystershells. The hosts include lilac, ash, cotoneaster, willow and many other deciduous trees and shrubs and are found on the branches not the leaves.

Lecanium Scales, the females are initially flattened and brown in appearance, as they mature, they become hardened and round. There is a wide variety of trees and shrubs affected by this insect.

Scale insects cause damage by removing vital plant fluids from their hosts using their sucking mouth parts. Leaf and needle stunting and yellowing, twig and branch dieback as well as plant death are possible depending on population levels. In some instances, scales weaken plants making them susceptible to damage from secondary pests or environmental extremes, which may ultimately kill the plant. Generally, the symptoms look like the tree is not receiving enough water.

Adult scales are generally not affected by insecticides. However, because the crawlers have not secreted their protective cover, they are very vulnerable to insecticides. In addition treatment of scales in their overwintering phase by applying horticultural oils, insecticide soap, is affective. These oils smother the scales. Oils should be applied in spring before plant bud break (March-April) however, fall can be effective and some summer treatments are available. There are temperature and host restrictions for applying these oils, so read all labels carefully. Thorough coverage is essential for achieving good control.

Try to maintain healthy, vigorous plants through proper watering, fertilization and pruning (including removing scale-infested branches), this will often increase a plant's ability to withstand pest pressure. Once scales begin adversely affecting plant health, management measures should be taken.