



## Pine Needle Scale

The pine needle scale is probably the most common armored scale found on conifers in the United States and Canada. The white, oyster shell shaped scales can completely cover needles, causing plant discoloration to needle and branch death.

### Plants Attacked

This pest prefers pines, especially Scotch and Mugho, but it can infest other pines, spruces, firs and Douglas-fir.

### Damage

Heavy infestations of pine needle scales remove considerable amounts of plant juices resulting in yellowed needles. From a distance, trees appear frosted or silvery. If heavy infestations are allowed to continue, twigs and branches may die.

### Description and Life Cycle

This scale settles on the needles of its host and forms white, oyster shell-shaped wax covers. These covers or armor are about 1/16 to 1/8-inch long when the scales are fully grown and there is a yellowish spot, the exuvium, on the small end. The male scales are usually smaller and more slender. This scale over winters as deep reddish colored eggs protected under the female's old armor. The eggs hatch in mid-May into tiny, flat nymphs called crawlers. These pink crawlers creep to new places on the tree in order to find suitable needles on which to feed. The crawlers are rather clumsy and they often fall from the trees and may be blown onto nearby trees. Once settled on a suitable needle, the crawler inserts its hair-like mouthparts, and begins to form the new armor. After a couple of weeks, the nymph molts under the armor and continues to increase in size for about three weeks. By this time male scales are smaller and more slender than the females. The males molt into a prepupa for a week before emerging as winged adults. The females, however, molt into wingless nymph-like adults. After mating, the females continue to grow for a couple of weeks before laying eggs under the armor. Females produce an average of 40 eggs.

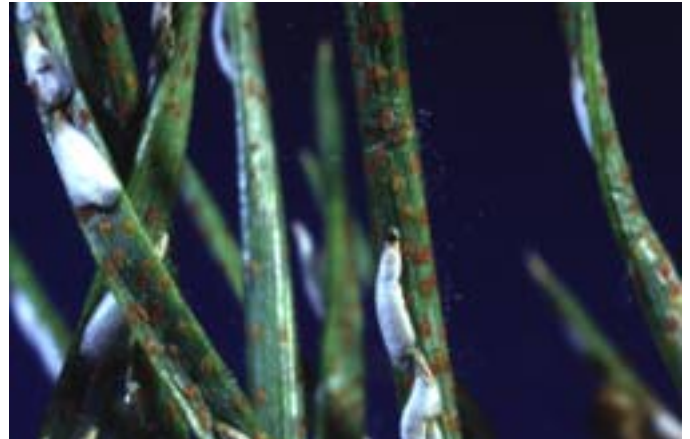
Two generations of this scale occur. The over wintering eggs hatch in mid-May and the summer produced eggs hatch in late July. Unfortunately, the eggs may hatch over a period of two to three weeks.

### Control Hints

This scale normally is spread by crawlers being blown from tree to tree. Spread is also more rapid when mature trees begin to touch branches. Scale crawlers may also be spread by birds or animals which roost or brush against trees with active crawlers. Early detection will prohibit spread and reduce the need for extensive spraying.

**Strategy 1: Biological Control** - The twice-stabbed lady beetle, a jet black beetle with two red spots and several parasitic wasps seem to control the pine needle scale in forest stands. However, these biological controls are often killed by the pesticides used for the control of other insect pests. Careful monitoring of predators and parasites as well as using pesticides with little effect on beneficials can allow biological control to be successful.

**Strategy 2: Chemical Control - Dormant Oil Sprays** - Since these scales over winter as eggs, dormant oil seems to have little effect. However, delayed dormant oil sprays applied at the time that the eggs are about to hatch in May has produced satisfactory reduction in scale populations.



**Strategy 3: Chemical Control- Crawler Sprays** - This is the time honored technique. Sprays will be needed in a series of two or three sprays at seven day intervals.

**Strategy 4: Chemical Control-Systemic Insecticides** - Systemic insecticides are very effective against young settled nymphs. Sprays should be applied after the crawlers have settled.

Information obtained through the Ohio State Extension Factsheet HYG-2053-95



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