

Woody Ornamental IPM

Pine Needle Scale

The Pine needle scale, *Chionaspis pinifoliae* (Fitch) is a native insect and a serious pest of ornamental pines in Pennsylvania. It affects pines in landscapes, nurseries and Christmas tree plantations, and is spread by the wind, birds, mammals and the touching branches of trees. Heavy infestations, left untreated, can cause twig and branch dieback.



Plants Attacked

The most frequently damaged host plants are the mugo pine (*Pinus mugo*) and Scotch pine (*Pinus sylvestris*). Other pines affected to a lesser extent are Austrian pine (*Pinus nigra*), red pine (*Pinus resinosa*) and eastern white pine (*Pinus strobus*). It can also infest spruces (*Picea*), firs (*Abies*), Douglas-fir (*Pseudotsuga menziesii*) and cedars (*Cedrus*).



Settled crawler showing color change before producing white waxy covering



Newly hatched pine needle scale crawlers

Insect Identification

The adult scales are easily recognized by their white, oyster shell-shaped wax covers measuring 1/16" to 1/8" long when fully grown. The male have similar color markings but are usually smaller than the female. Both male and female have a yellowish spot, the exuvium, on one end. Pine needle scale eggs and newly hatched crawlers are bright red changing to pale yellow then tan once they start feeding.

Life History

- Over-winter** The reddish eggs over-winter beneath the female scale cover.
- Spring** The female lays approximately 40 eggs, beneath her scale covering, which hatch in mid to late May. (A second hatching occurs in July). The reddish nymphs crawl to a new site on the host plant or are blown or carried to a new host. The nymphs insert their mouthparts into the needle of the host plant and begin to feed.
- Summer** The nymph continues to feed and increase in size. The male molts and emerges as a winged adult. The female molts into a wingless nymph-like adult. The male mates with the female and then dies. The female continues to grow for a few weeks before laying her eggs.
- Fall** Second generation scales are found on the foliage

Damage Symptoms

The scale uses its piercing-sucking mouthparts to feed on juices from the needles of the host causing the needles to turn yellowish brown. Heavy infestations can give the plant a frosted appearance. Untreated infestations may result in sparse foliage and the eventual death of the tree.



Management Options

Biological	Several species of lady beetles (including the twice-stabbed lady beetle) and wasp parasitoids feed on the pine needle scale. If beneficial predators are present, the use of "predator friendly" insecticides such as insecticidal soap or horticultural oils should be used, and pest populations closely monitored.
Mechanical	: In nursery and Christmas tree farms, the removal of mature trees that act as infestation sources may prohibit the spread of the scale and reduce the need for spraying entire plantations.
Chemical	Horticultural oil, soap sprays and insecticide sprays have been effective if used after the eggs have hatched but before new white waxy coverings have begun to form.

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