



Pine needle scale

Chionaspis pinifoliae

Order Hemiptera, Family Diaspididae; armored scales
Native pest

Host plants: Mugo and Scotch pine are preferred, but other pines and spruce are frequently attacked.

Description: Adult female covers are white, elongate, and tapering at one end and are 2.5–3 mm long. The yellow cast skins of the first and second instar nymphs are narrow at the end. Male covers are smaller, white and rectangular. Eggs are red. Settled nymphs are flattened and yellow.

Life history: Eggs hatch in early May. Crawlers seek feeding sites on the previous year's foliage. Once they have inserted their mouth parts through a stoma, they remain at the site for the rest of their lives. Cast skins are retained and become part of the scale's cover. After mating, females begin to produce their white waxy covering as they deposit eggs; each female produces from 20 to 60 eggs. There are two generations a year. A related species, *C. heterophyllae*, is found only on pines.

Overwintering: Eggs under female scale covers.

Damage symptoms: Scales feeding causes needle chlorosis and premature needle drop. Heavy infestations can reduce the plants aesthetic value, and vitality.

Monitoring: Eggs of the first generation hatch when common lilac blooms in early May. Eggs of the second generation hatch when rose of Sharon first blooms in early July (Herm). Look for white scale covers in spring and lift the covers to see if eggs are present. Look for both active reddish crawlers. A hand lens is helpful to see eggs and crawlers. Always check scale covers for chewed, ragged holes from predators and round holes indicating parasitoid emergence.

Physical control: Prune and destroy heavily infested branches.

Chemical control: *General information.*

Conservation of beneficial insects: Use short duration, low residual insecticides, such as horticultural oil, insecticidal soap, and insect growth regulators (IGR).

Foliar applied broad spectrum insecticides, such as acephate, carbaryl, and pyrethroids: Use only when scale populations are high to rescue trees; beneficial insects will be also killed.

Dormant season oil treatments: Use for armored scales that overwinter as eggs under female covers (delayed dormant).

Summer oil treatments: Oil smothers exposed eggs, crawlers, and immature females.

Insect growth regulators (IGR), such as pyriproxifen: Use for crawlers as they disrupt molting.



Pine needle scale adult females. (193)

Photo: John Davidson



Pine needle scale adult females. (193)

Photo: John Davidson



Pine needle scale adult female with parasitoid emergence holes; note the parasitoid leaves circular emergence holes. (193)

Photo: Cliff Sadof



Pine needle scale (continued)

Soil applied systemic insecticides or trunk injections, such as imidacloprid: Not effective against armored scales, which feed at different sites than soft scales.

Biological control: Numerous species of parasitoids and predators attack pine needle scale.

Plant mortality risk: Moderate

Biorational pesticides: horticultural oil, insecticidal soap, pyriproxifen

Conventional pesticides: acephate, bifenthrin, carbaryl, chlorpyrifos (nursery only), cyfluthrin, deltamethrin, fluralinate, lambda-cyhalothrin, permethrin



Young pine needle scale nymphs. (W71)
Photo: Whitney Cranshaw



Parasitized pine needle scale female; notice irregular holes on covers made by a predaceous beetle. (195)
Photo: John Davidson



Pine needle scale cover of adult female turned over in late winter to show eggs. (194)
Photo: John Davidson



Parasitized pine needle scale. (W70)
Photo: Whitney Cranshaw



Pine needle scale nymphs. (W69)
Photo: Whitney Cranshaw