

UCSU 20/6.22/5.514
c.2

SERVICE
RECEIVED
MAY 24 1990
IN ACTION
COLORADO STATE LIBRARY
State Publications Library

Pine needle scale:

characteristics and control on evergreens

Whitney S. Cranshaw and David A. Leatherman¹

no. 5.514

COLORADO STATE UNIVERSITY COOPERATIVE EXTENSION

COLORADO STATE PUBLICATIONS LIBRARY local
UCSU20/6.22/5.514 c.2
Cranshaw, Whitney/Pine needle scale : ch
3 1799 00013 2993

Quick Facts

- Pine needle scale attacks spruce, pine and fir trees in Colorado.
- It overwinters in the egg stage.
- The insect hatches in the spring and quickly attaches itself to the tree's needles.
- Good control of pine needle scale can be obtained by applying an insecticide just prior to hatching and then 1-2 more times at 7- to 10-day intervals.
- Proper timing is important if insecticide applications are to be successful.

Pine needle scale can be a serious pest of spruce, pine and fir in Colorado. When numerous, the scale insects cause the needles to turn yellow by withdrawing the plant juices. By the time the needles begin to show evidence of injury, it is often too late to prevent them from dying. Since the trees are not able to replace the damaged needles for several years this needle loss can result in a decline in the vigor of the tree. Consequently, it is advisable to check trees periodically to discover any signs of developing infestation.

Description and Life Cycle

The adult (mother) pine needle scale is about one-eighth inch (.3 millimeters) long, greyish-white and found attached to the needles of evergreens (Fig. 1). This insect passes the winter in the form of tiny, purplish eggs under the old mother scale.

The average hatching date in Colorado is about June 1. This will vary with altitude and climate, however.

The newly hatched scales are called "crawlers." Crawlers are minute in size and resemble tiny aphids. They can be best seen with aid of a magnifying glass. The crawlers move about for a short time and then settle down and insert their beaks into the needles. They stay in this location throughout their lives.

Soon after attaching themselves to a needle, they begin to secrete a waxy covering and start to transform into adult scales. The insects cannot be well controlled with insecticides once this protective covering has been produced. The insect becomes fully grown in July or August.

At higher elevations there is only one generation a year. A second generation of crawlers may occur in August at lower elevations.

Certain conifers, such as bristlecone pine, naturally produce small resinous masses on the needles that resemble pine needle scale. These masses can be easily distinguished from pine needle scale upon close inspection, as they are irregular in appearance.

On deciduous trees and shrubs, a closely related scale, the scurfy scale, occurs. Problems with this species are rare in Colorado.

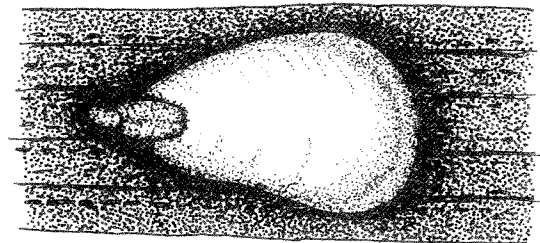


Figure 1: Pine needle scale.

¹Whitney S. Cranshaw, CSU Cooperative Extension specialist and assistant professor, entomology; David A. Leatherman, entomologist, Colorado State Forest Service (revised 12/86)

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture, Kenneth R. Bolen, Director of Cooperative Extension, Colorado State University. Cooperative Extension programs are available to all without discrimination.

To simplify technical terminology, trade names of products and equipment occasionally will be used. No endorsement of products named is intended nor is criticism implied of products not mentioned.

Control

Several natural enemies attack pine needle scale. Certain ladybird beetles are commonly found feeding on the developing scales and eggs. Various small parasitic wasps also occur and their presence is indicated by the small round emergence holes that they make in the scale covering. Unfortunately, natural enemies of pine needle scale are not always sufficient to prevent damaging outbreaks.

Dormant oil sprays may be used for pine needle scale control prior to the appearance of new spring growth. This type of spray is not without disadvantages. Dormant oils are likely to remove the waxy "bloom" from needles, which gives them the distinctive color. Dormant oils also may seriously injure plants if applied too late (when new needles are present) or when temperatures are low (below 40° F). When using dormant oil sprays carefully follow manufacturer's labelled instructions.

Summer sprays with conventional insecticides can be effective if they are properly timed to

coincide with the occurrence of the crawler stage. The spray application should be made as soon as possible after the eggs hatch and before the insect becomes protected by its waxy covering. Treatments should not be made at any other times to avoid killing natural enemies of the pine needle scale.

If the approximate hatching date for an area is known, it may be advisable to make the first spray application just before the hatch. Two additional applications at 7- to 10-day intervals may need to be made if egg hatch is extended over a long period. Crawler stages can be most easily detected by carefully observing foliage or shaking infested needles over a paper.

The following insecticides can give good control of pine needle scale when used according to label instructions:

- acephate (Orthene)
- carbaryl (Sevin, Sevimol)
- chlorpyrifos (Dursban)
- diazinon
- malathion