

Pine Needle Scale

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Late March and April could be the best time to control Pine Needle Scale diseases and possible other trees and wood ornamental scale diseases.



Fig 1. Pine needle scales on the surfaces of pine needles Photo credit: Peng Tian

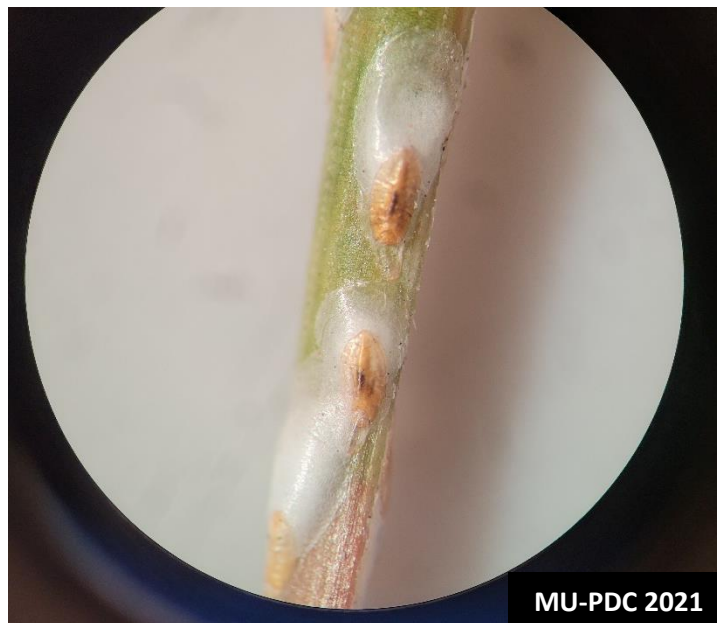


Fig 2. Three immobile adult female scales on a pine needle Photo credit: Peng Tian

Name: *Chionaspis pinifoliae*

Morphology: Pine needle scale belongs to armored scale insect family. The adult females are covered with a wax covering (test) that rests tent-like over the body and not attached. The coverings are

composed of molted skins, secretions, excretions, and wax. In contrast to the adult males, females are larger and wider at one end and have a yellow or orange cap on the other end. Both of them are normally immobile while the larva (crawlers or nymphs), orange to red in color, are very mobile and can migrate to different locations.



Fig 3. The adult female scales and crawlers on pine needles Photo credit: OSU Extension

Life cycle: The adult females normally lay 30-40 eggs and cover them under their tests in the winter time. The eggs hatch in the spring from March to May, depending on the weather condition. The crawlers then move out from the waxy coverings and crawl around and look for feed sites on the needles. They can also be transmitted by the wind and rain splash. Once the crawlers settle, they stick to that needle for the rest of their lives. The crawler then turn yellow and lose mobility, forming the waxy test. From July to August, they start to mate and lay eggs to overwinter for the next year.

Host range and damage: This disease can affect many conifers such as pines, spruces, and furs across North America. It causes needle blight and twig dieback, reducing the vigor of the tree by weakening their health. Heavy infestations can result in branck diebak and the death of the entire tree.

Disease management: Since there are two generations of this insect through the year, a sucessful disease management plan in the spring is signification in controlling the insect population, especially in late March or April because once the crawlers settle and form the waxy coverings, the insecticide is no longer effective. If the population is low to mild, pruning and removal of the infested branches while maintaining good irrigation and fertilization of the tree are helpful to keep the plant healthy. According to biological control, there are some commercially available beneficial insects such as lady bugs and lacewings. They are the predators of scales and can be used to control this insect problem. Horticultural oils and insecticidal soaps such as Neem products can smother the insects in the initial stage and get rid of them. Application of synthetic chemicals can be used if the infestation level is very high, but it may have impact on the pollinators and result in chemical residue problems.

References:

1. **Problem: Pine Needle Scale - *Chionaspis pinifoliae***, Kansas State University, Research and Extension (<https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Pine%20Needle%20Scale.pdf>)
2. **Pine Needle Scale**, USDA Forest Service (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5351723.pdf)
3. **Pine Needle Scale**, Missouri Botanical Garden (<https://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/insects/scale/pine-needle-scale.aspx>)
4. **Insects That Feed on Trees and Shrubs**, Warren T. Johnson

For appropriate diagnosis, the MU Plant Diagnostic Clinic can help you confirm if your plant has this disease. We encourage you to visit our website (<https://extension.missouri.edu/programs/plant-diagnostic-clinic>) and review submission guidelines before submitting your sample. If possible, you may take photos and send them to plantclinic@missouri.edu.

For sample submission and fee payment, you can either:

- 1) Visit our new online submission system at <https://extension.missouri.edu/services/plant-disease-sample>. Fill out the submission form online using your computer or mobile device and make payment online securely with a credit card.
- 2) Download the submission form at <https://extension.missouri.edu/programs/plant-diagnostic-clinic/sample-submission>. Fill it out and send to us together with your sample and payment. Check or money order. No cash please.

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