

## Pinyon Needle Scale *Matsucoccus acalyptus*

Pinyon needle scale, *Matsucoccus acalyptus*, is a host specific sap feeding pest of pinon trees. The effects of their feeding damage to pinon trees can be seen in many areas in and around Santa Fe. Black specks on yellowing or brown needles are evidence that trees have been infested with pinyon needle scale (PNS).

The degree of damage by PNS infestation ranges from no damage to severely damaged host trees. Many trees that I have observed have suffered from multiple years of uncontrolled infestation. Trees that have experienced the worst of PNS infestations are reduced to a specimen with a thin, spindly canopy of a few live needles. The effects of PNS in Santa Fe have rendered many pinon trees susceptible to other pests.

Some trees that have received supplemental irrigation or are located in areas that benefit from runoff water are in great shape. Maintaining tree health, including supplemental irrigation is the first step in managing trees for PNS.

Although the literature suggests that there are beneficial arthropods that feed on PNS, achieving control by naturally occurring predators and parasites has not been observed.

Adult PNS females can be seen crawling on trees and the small, dark colored winged males flying around the tree in search of females. A 5-10x hand lens is useful in observing this insect. If you having a difficult time finding this stage of PNS, place a 24"x 24" piece of white fabric placed below a tree branch and give the branch a shake or two. You should see the green colored female scale with ease.



Figure 1. Pinyon needle scale, *Matsucoccus acalyptus*, damage. Pinyon needle scale (PNS) is a native sap sucking insect pest of pinon trees. PNS infest and kill needles older than one year, which significantly reduces the trees ability to produce carbohydrates for its survival. Along with dead needles, dark bean-shaped specks on needles also indicate the presence of PNS. Successive years of uncontrolled infestation may kill trees or predispose trees to other pests. Dead needles do not regenerate and eventually fall off the tree. Supplemental irrigation in times of drought is vital to maintain tree health.



Figure 2. Adult PNS females (~2.5mm) on a pinon tree branch.

PNS females are about 2.5mm in length; light green in color and wingless. Upon emerging from their bean shaped capsule in late winter through early spring, females are mated by small dark colored winged males. Adult females crawl from needles to branches, trunk, nearby trees or other areas in search of protected sites to lay eggs. As of this writing, most adults have emerged from the protective covering.

Female PNS are vulnerable to control measures including physical removal by a high pressure stream of water and subsequently gathered and disposed of in a plastic trash bag. Inspect the tree for crawling females and repeat often. This method may be impractical with more than just a few trees.

The author has not observed naturally occurring predators, parasites or pathogens to provide control of PNS populations.

Properly timed applications of horticultural oils directed to this life stage of PNS kill the insect by plugging their breathing pores (spiracles). There is no residual control of horticultural oil insecticides and multiple applications may be required to control infestations. Horticultural oils and other organic oils may cause phytotoxicity especially to new growth or when applied when day time temperatures are high.

Read and follow product label instructions. It is a violation of Federal law to use any pesticide product in a manner inconsistent with its labeling.



Figure3. Webbing produced by female PNS covers and protects yellow colored eggs. Three to four weeks after being laid, eggs develop a red spot indicating the eggs will hatch in about 7-10 days. The hatched “crawlers” move to last years’ needles, insert their mouthpart and quickly produce a protective covering. As with females, eggs and newly hatched crawlers are most vulnerable to control efforts. Egg masses can be physically removed from the tree, gathered and destroyed. Monitoring egg hatch to identify the crawler stage is critical for effective physical control or chemical control efforts with horticultural oil insecticides or other classes of insecticides.