



Juniper and Cryptomeria Scales in Residential Landscapes

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Introduction

Juniper scale (*Carulaspis juniperi*; Fig. 1) and cryptomeria scale (*Aspidiotus cryptomeriae*; Fig. 2) are armored scale insects in the Family Diaspididae. Both juniper and cryptomeria scales can be serious pests of trees and shrubs in Virginia. Juniper scale attacks junipers, arborvitae, incense cedar, and cypress. Cryptomeria scale attacks firs, hemlocks, and pines.



Figure 1. Juniper scale (US National Collection of Scale Insects, USDA ARS, Bugwood.org).



Figure 2. Cryptomeria scale (Eric Day, Virginia Tech).

Armored scales are so named because they secrete a hardened, waxy shield-like covering resembling a flattened disk pressed tightly against the host plant that protects the scale insect underneath. Most armored scale species overwinter as eggs beneath

the cover of the mother scale. In spring, eggs hatch into tiny mobile crawlers that migrate to new feeding sites on the infested host. After a few days, the crawlers settle, insert their mouthparts to feed, and begin secreting their protective covers. Adult female armored scales remain under their shield their entire life, but adult males, which superficially resemble winged aphids, emerge and fly to seek other females as mates.

Damage

Scale insects feed on plant cell contents with long, threadlike mouthparts 6-8 times longer than the insect's body, which slowly reduces plant vigor. Due to their small size and cryptic nature, large populations of scales can flourish unnoticed before infested plants show visible damage symptoms. Heavily infested plants become discolored and grow poorly with twig and branch dieback. Sometimes an infested plant is so weakened that it loses its needles and dies.

Cryptomeria scale feeds on the underside of conifer needles, leaving a yellow stippling visible on the upper surface (Fig. 3). As damage progresses, the host tree exhibits strong mottling (Fig. 4) and may drop needles prematurely. Heavy infestations may develop with layers of younger scales under the bodies of older scales. Damage from juniper scale begins as a loss of green color in infested plants, which progresses to a blighted appearance with dieback in portions of the plants (Fig. 5).

Identification

Both juniper and cryptomeria scales resemble fried eggs with a yellow center and white outer edges. Juniper scales are more opaque than cryptomeria scales, which are transparent enough that the color

of the host needles can be seen through the scales' shields (Fig. 2). Female juniper scales are also rounder than the more oval female cryptomeria scales.



Figure 3. Damage by cryptomeria scale (Eric Day, Virginia Tech).



Figure 4. Cryptomeria scale infestation with progressive chlorotic mottling (Eric Day, Virginia Tech).



Figure 5. Juniper scale damage on juniper (Joseph LaForest, University of Georgia, Bugwood.org).

Control

The waxy covering of armored scales protects them against most contact insecticides, so applications should be timed to target the naked crawlers. Both juniper and cryptomeria scales have two generations annually, but they vary as to when their crawlers are present. Usually, juniper scale crawlers are found in April and June, while cryptomeria scale crawlers are found mostly in June and August. For both scales, infested plants can be treated with dormant oil in later winter before bud break, or use a contact insecticide when crawlers are present. Applications for cryptomeria scale must cover the underside of the needles where the scales are found.

Since both juniper and cryptomeria scales resemble each other but have different life histories, accurate identification is needed to know when the crawlers are expected. Consult your [local Cooperative Extension office](#) for assistance with scale identification and treatment recommendations.

When feasible, prune and destroy badly infested branches to remove both juniper and cryptomeria scales. Read insecticide labels carefully as some materials may cause phytotoxicity to junipers. The scales' protective coverings will remain on the plant even after the insects die until they weather off. Check for the presence of live scale insects before treating by rubbing the protective covers. Live scales release a liquid when crushed but dead scales remain dry. Several treatment applications may be needed for good control of juniper and cryptomeria scales. Consider the use of systemic insecticides applied as drenches for control.

Note: Follow all label instructions for using dormant oils on conifers, which are more susceptible to phytotoxicity than deciduous plants. Dormant oil will also remove the desirable glaucous waxy bloom seen on some spruces and junipers; this bloom will return to some degree on treated growth with time.

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