



## Cryptomeria Scale on Christmas Trees

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### Introduction

Cryptomeria scale (*Aspidiotus cryptomeriae*; Fig. 1) is an armored scale insect in the Family Diaspididae. Common host plants include junipers, firs, spruces, pines, yews, and hemlocks. Cryptomeria scale occurs in landscape plantings, nursery production, and Christmas tree farms.



Figure 1. Cryptomeria scale (Eric Day, Virginia Tech).

### Life History

Armored scales are named for the protective waxy shields they secrete. Most armored scale species overwinter as eggs beneath the shield of the mother scale. In spring, eggs hatch into tiny mobile crawlers that migrate to new feeding sites. After a few days, the crawlers settle, insert their mouthparts to feed, and begin secreting their shields. Adult female armored scales remain covered their entire life. Adult males, which resemble winged aphids, emerge and fly to find mates.

### Identification

Cryptomeria scale is found on the underside of the needles and is best seen with a hand lens. It resembles a fried egg with the insect's yellow body visible under the translucent round white covering

(Figs. 1 & 2). Immature male cryptomeria scale are somewhat smaller than the females. Heavy infestations may develop with layers of young scales settling under older dead scales.



Figure 2. Cryptomeria scale (US National Collection of Scale Insects Photographs, USDA ARS, Bugwood.org).

### Damage

Armored scales feed on plant cell contents with long threadlike mouthparts, reducing plant vigor. Large populations of scales often go unnoticed before infested plants show visible damage symptoms. Cryptomeria scale feeding leaves a yellow discoloration visible on the upper surface of the needles (Fig. 3). As damage progresses, the host tree exhibits strong mottling (Fig. 4) and may drop needles prematurely, especially on the lower and interior branches where scale populations are often overlooked.



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



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

## Control

Correct management for scale insects depends on accurate identification. Contact your [local Cooperative Extension office](#) for assistance with identification and treatment recommendations. The [Pest Management Guide to Horticulture and Forest Crops](#) has recommendations for scale insects on conifers as nursery crops and Christmas trees.

Regularly scout for scale insects on the underside of the foliage. Check older interior growth where infestations go unnoticed. Older armored scales are largely protected by their waxy shields against contact insecticides, so time applications against the

crawlers. Use sticky cards or tape to determine when crawlers are active. Cryptomeria scale has two generations annually with crawlers appearing in June and August.

Treat cryptomeria scale on Christmas trees with bifenthrin in May. Infested trees can also be treated with dormant oil in late winter before bud break. Direct any treatments to the underside of needles where cryptomeria scale is found. Follow all label instructions regarding phytotoxicity when using dormant oils on conifers. Dormant oil will also remove the glaucous bloom on some conifers.

Dead scale insects remain on the plant 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 scales, but dead scales do not warrant treatment. Use insecticides judiciously, as their use can disrupt natural enemies and promote outbreaks of spider mites.

Inspect nursery stock for scale insects before planting. When feasible, prune and destroy badly infested branches to remove scale insects. Consider removing and destroying heavily infested small trees or trees too large for market. Don't apply nitrogen fertilizers to infested trees as the nutrients can result in increasing pest populations.

## Note

Elongate hemlock scale (*Fiorinia externa*) also occurs on the same host trees as cryptomeria scale. These two species can be confused with each other but require different management approaches. Accurate identification of the species present is important to ensure that appropriate chemical controls are used.

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