

Seiridium Canker on Leyland Cypress

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Leyland cypress (*x Cupressocyparis leylandii*) is a popular landscape tree that is widely used for screens and hedges. Recently, a serious disease known as Seiridium canker, or Cypress canker, has struck Leyland cypress across the state, especially in locations where trees have endured severe winter, drought or fertility stresses. Seiridium canker causes widespread twig and plant mortality that is capable of disfiguring the tree.

What causes this disease?

Three different species of the fungal pathogen *Seiridium* can cause the disease; *S. cardinale*, *S. cupressi* and *S. unicorne*. Most of the infections in West Virginia and surrounding areas are by *S. cardinale*. Although several tree genera, including *Chamaecyparis*, *Cupressus*, *Cryptomeria*, *Juniperus*, *Libocedrus*, *Platycladus*, *Taxodium* and *Thuja* have been reported as hosts, cultivated Leyland cypress that belongs to the inter-generic hybrid genus *x Cuprocyparis* is most affected in the Mid-Atlantic United States.



*Figure 1. Flagging symptom due to infection of a single Leyland cypress branch by Seiridium sp.
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What does Seiridium canker look like?

Typically, the most visible symptom of Seiridium canker is the flagging of branches, where yellow to reddish-brown branches appear in the middle of normal green branches (Figure 1). Closer examination to the base of an affected branch will reveal slightly sunken, reddish cankers with profusely exuding resin (Figure 2). However, resin flow from older trees may be relatively low and requires careful observation to locate. In addition, cankers are usually located several feet down the branch, close to the trunk, and are often not observed near the shoot tips. These cankers may also be present on branches which do not show the flagging symptom yet. Black, pustule-like fruiting bodies known as *pycnidia* may appear breaking through the bark when viewed under a hand lens. During rainy weather, these fruiting bodies release *conidia* (spores) that are spread by splashing water, carrying infections to wounded twigs of stressed trees. Infection on multiple branches (Figure 3) throughout the tree or on the main trunk can kill the entire tree.



Figure 2a. Resin exuding from the canker of a Seiridium-infected Leyland cypress main trunk. Figure 2b. Leyland cypress tree showing symptoms from Seiridium infections on multiple branches

Stresses such as drought, fertility or winter desiccation may predispose trees to infection. Desiccation is a condition of extreme dryness within the tree. The phenomenon can be caused in winter by prolonged sub-freezing temperatures, which make it difficult for trees to absorb water from the frozen ground to replenish the amount of water lost through transpiration, especially on sunny and windy days.

How do I manage the disease?

Cultural practices that include stress alleviation and eradication of infection source (previously infected limbs) play an important role in disease management. Since the fungus survives in infected bark tissue, prune all infected branches about 3 to 4 inches below the cankered area and destroy them, preferably by burning. To minimize spread of the organism during pruning, sterilize the blades after each cut with a 10% bleach or 70% alcohol solution.

Alleviate stress by protecting plants from desiccation or wounding induced by prolonged periods of sub-freezing temperatures. Water trees in the late fall or during transient ground thawing, cover smaller trees with burlap and provide windbreaks. Adding an appropriate layer of compost or bark mulch above the tree's root zone can also prevent ground freezing.

Currently, fungicides are not effective for controlling this disease. However, in vitro trial of fungicides, such as thiophanate methyl and boscalid, showed significant suppression of mycelial growth and spore germination (Della-Rocca et al. 2011).

While Leyland cypress is the major target of *Seiridium* fungus, not all winter-desiccated trees become infected. In the unfortunate event that a tree dies from desiccation and a critical *Seiridium* infection, it's best to remove and dispose of that tree. Replace it with something hardier, such as 'Emerald green arborvitae' or 'Cryptomeria cypress' which are less susceptible to *Seiridium* canker.



Literature cited

Della-Rocca, G., Lonardo, V. and Danti, R. 2011. Newly-assessed fungicides for the control of cypress canker caused by *Seiridium cardinale*. *Phytopathol. Mediterr.* 50, 66–74.

June 2015

ANR-IPM-15-014

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