

Canker Diseases of Leyland Cypress

Identification, Biology & Management

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Leyland cypress is one of the most widely used trees in commercial and residential landscapes within the UK and Ireland as a formal hedge, screen, or wind barrier. Leyland cypress (*Cupressocyparis leylandii*) is a graceful, rapidly growing evergreen tree that is well adapted for UK and Ireland landscapes. The tree is ideally suited for fertile, well-drained soils. When young, the tree will grow up to 1.0-1.2m per year, even in poor soils. Leyland cypress form a dense, oval or pyramidal outline when left un-pruned, but the slightly pendulous branches will tolerate trimming to create a formal hedge, screen or windbreak.

Generally, Leyland cypress is considered relatively pest-free. However, because of its relatively shallow root system, and because they are often planted too close together and in poorly drained soils, Leyland cypress are prone to two damaging canker diseases, especially during periods of prolonged drought.

Seiridium Canker and Twig Dieback

Seiridium canker is probably the most important and destructive disease on Leyland cypress in the landscape. Although *Seiridium cardinal* and *Seiridium cupressi* have been reported to cause disease on Leyland cypress and, on occasion, other coniferous species, *Seiridium unicorne* is most commonly associated with cankers and twig dieback on Leyland cypress (Figure 1). Trees of all sizes and ages can be affected. Environmental stress, predominantly drought, favours infection and canker development. For example *Seiridium* cankers enlarge up to three times faster on drought stressed trees than on irrigated ones.

Symptoms

One of the most noticeable symptoms of *Seiridium* canker is yellowing or browning of



Figure 1: *Seiridium* Canker of *Leylandii*

the foliage on one or more branches. The discolouration is most likely to appear in early spring; however, it can be seen at any time of the year. The disease expansion often continues until a significant portion of the tree is destroyed. Upon closer examination, formation of numerous thin, elongated cankers is observed on stems, branches and

branch axils. These cankers cause twig and branch dieback. Most of the cankers are slightly sunken, with raised margins, and may be discoloured dark brown to purple. Cracked bark in infected areas is often accompanied by extensive resin exudates that flow down the diseased branches. The tissue beneath oozing sites is discoloured with a reddish to brown colour.

Botryosphaeria (Bot) Canker

The other damaging disease on Leyland cypress is a canker dieback named *Botryosphaeria* (Bot) canker, caused by the fungus *Botryosphaeria dothidea* (Figure 2) *Leylandii* suffering from environmental stresses (freezing, drought, or heat) or wounds are particularly susceptible to *B. dothidea* infection.



Figure 2: *Botryosphaeria* canker of *Leylandii*

Symptoms

In the landscape, Bot canker symptoms resemble those caused by *Seiridium* canker. Bright, rust-coloured branches and yellowing or browning of shoots or branches are the first observed symptoms. Closer inspection reveals the presence of sunken, girdling cankers at the base of the dead shoot or branch. Sometimes, the main trunk shows cankers that might extend for 300 cm or more in length. These cankers rarely girdle the trunk, but they will kill branches that may be encompassed by the canker. Canker surfaces may be cracked and have a darker colour than the surrounding healthy bark. The discolouration often extends below the canker periphery. Little or no resin "oozing" is produced on the infected areas.

Control

Irrespective of canker, control strategies are as follows:

Optimising tree health are the best defences against *Seiridium* canker. Due to its relatively shallow root system, plant Leyland cypress in well cultivated, non-compacted soils to encourage plant vigour. Amend the soil if necessary. Avoiding excessive watering and heat stress is vital to establishment of a healthy Leyland cypress.

To minimize water loss and water competition with other plant species, mulch an area 1-2m beyond the lowest limbs. During hot, dry summer days, irrigate trees thoroughly every 7-14 days. Providing adequate irrigation during periods of drought is vital for prevention of infection by *Seiridium* canker.

Sanitation, such as removal of cankered twigs and branches, helps prevent disease spread. Burn diseased pruned materials, and disinfect

pruning tools by rinsing in alcohol or a solution of 1 part bleach to 9 parts water. Remove extensively damaged trees or trees that are damaged in the main trunk.

No cultivars or selections are known to be resistant to the disease. Sprays with the fungicide mancozeb may provide some degree of protection but repeat sprays will need to be performed through-out the growing season. Phosphite sprays and/or soil drenches to stimulate tree vitality as part of a fertiliser programme may help in the short term but their effectiveness against this disease has not been tested. Control is very difficult once trees are heavily infected.



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