

## Holly Leaf and Twig Blight

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Leaf and twig blight on holly (*Ilex* spp.) is a fairly common disease in the Pacific coastal region of Canada and the northwestern United States. This disease is caused by a fungus-like organism called *Phytophthora ilicis*. There are many well known pathogens in the genus *Phytophthora*, most of which cause root rots or trunk cankers, including the 'Sudden Oak Death' pathogen *P. ramorum*. *Phytophthora* species require free water (either in the soil or on the plant surface) to complete their infection cycle as they have motile spores that swim to new host tissue and infect. Excess moisture is, therefore, an important factor in any *Phytophthora* disease situation.

### Symptoms

Symptoms of holly leaf and twig blight normally begin as small purple to black spots on the leaves or necrotic clusters of berries (Figure 1). As the disease progresses, the spots develop into purple or black blotches (often along the leaf midrib) and the infection will also move into the twigs causing dieback, defoliation, and cankers (Figure 2). Cool temperatures and moist weather favor disease development; symptoms will often subside in the summer months only to reappear in the fall. Inoculum most likely persists in soil, and is also produced on infected plant parts. During wet and cool spring or fall weather, spores splash onto leaves from the soil or other infected areas, penetrate the tissue, and cause the initial leaf spot symptoms. Often the

**Figure 1: Necrotic areas on holly leaves caused by *Phytophthora* infection**



**Figure 2: Defoliation and dieback caused by holly leaf and twig blight**



symptoms will be worst on the lowest leaves and branches where inoculum from the ground has splashed up onto the foliage.

### Treatments

There are several simple cultural methods which can dramatically reduce the severity of this disease. Pruning plants to increase air circulation and light penetration will help avoid moisture on the leaf

surfaces which is necessary for infection. Also, overhead sprinkler irrigation that wets foliage should be avoided. If the affected holly is tree-form, the lowest branches can be pruned in order to reduce the likelihood of inoculum splashing up from the soil below. This pathogen does not readily penetrate bark but will infect the more sensitive leaf tissue.

In addition to cultural control methods, there are some effective chemical control options that may help reduce infection. Keep in mind, however, that conditions conducive to disease development must be corrected before discontinuation of treatments in order to manage this disease long-term.



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