



# Invasive Species Issues

May 2020

## *Phytophthora ramorum*, ramorum leaf blight

Ramorum leaf blight is a disease caused by the oomycete *Phytophthora ramorum*. Oomycetes are sometimes called “water molds” and were once thought to be fungi but are now in their own Kingdom. *Phytophthora ramorum* was first detected in the United States in California in the mid 1990s and has since been found in nurseries and nursery stock in at least 27 states; it has been eradicated in most cases. Ramorum leaf blight is also called ramorum dieback or sudden oak death depending on the host plant affected.

### Hosts and Damage

*Phytophthora ramorum* has a large range of susceptible host plants and can cause different damage depending on the host. Common hosts and damage are listed in Table 1 below. The first type of damage includes cankers (areas of dead tissue) in stem tissue. Cankers caused by *P. ramorum* occur on several species of oak and tanoak trees and are often “bleeding” cankers in that they produce a reddish-brown liquid that oozes or drips from the bark. Cankers on the main stem of a plant can eventually lead to mortality.

Common native and ornamental plants can have infections in the twigs or leaves that may result in leaf blight; leaf spots, blotches, or scorch; or branch decline. Leaf or twig infections may not lead to mortality in individual plants, but they can affect the overall aesthetics of a landscape and can be a source of future infections. Common plants in Alaska that are susceptible to *P. ramorum* include rhododendron, lilac, and *Vaccinium* species.

Symptoms of *P. ramorum* can resemble abiotic injuries from temperature, water, or chemical damage or damage caused by fungal infections. Plant samples should be submitted to a diagnostic lab for identification.



*Phytophthora ramorum*, *Rhododendron* sp. (bottom leaf surface), Joseph OBrien, USDA Forest Service, Bugwood.org



*Phytophthora ramorum*, *Rhododendron* sp. (upper leaf surface), Joseph OBrien, USDA Forest Service, Bugwood.org



*Phytophthora ramorum*, lilac (upper leaf surface), Nina Shishkoff, USDA ARS

### Vectors and Spread

*Phytophthora ramorum* may be introduced to new areas of the United States through the movement of infected nursery stock. Local spread of the pathogen can occur by dispersal of spores with windblown rain or overhead irrigation. Nursery and forest surveys, as well as quarantines and regulatory practices, can help limit the spread of *P. ramorum*.

### Pest Significance in Alaska

*Phytophthora ramorum* has a large host range including native and domesticated plants found in Alaska and many common nursery and greenhouse plants. Establishment of this disease in Alaska would be very expensive to manage and devastating to our nursery and greenhouse industry and our natural environment. Host species in Alaska are widespread and abundant in urban settings and natural areas. Establishment in urban and community landscapes would

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be an economic burden on private landowners and municipalities due to the cost of controlling the pest. Establishment in natural areas could impact biodiversity, ecosystem services, and the recreational value of an area.

Plant Name	Symptoms
Japanese larch ( <i>Larix kaempferi</i> )	Leaf necrosis; dieback; canker with resin
Lilac ( <i>Syringa vulgaris</i> )	Leaf lesions brown to black especially leaf edges; death of leaf buds
Rhododendron ( <i>Rhododendron</i> spp.)	Leaf necrosis especially leaf edges near petiole and tip; diffuse margins; premature drop; brown to black cankers on small branches
High bush cranberry ( <i>Viburnum</i> spp.)	Leaf necrotic lesions at tip, edge, or petiole; leaves may drop; stem cankers near base and small branches; distant leaves brown and stay attached
Fireweed ( <i>Chamerion angustifolium</i> )	Leaf lesions irregular shaped, may be vein-delimited
Rose ( <i>Rosa</i> spp.)	Necrotic leaf lesions, sometimes with chlorotic halo, spreading down petiole
Salmonberry ( <i>Rubus spectabilis</i> )	Leaves with dark marginal necrosis
Lingonberry, Low bush cranberry ( <i>Vaccinium vitis-idaea</i> )	Leaf lesions dark with diffuse margins
Veronica ( <i>Veronica spicata</i> )	Leaf necrosis
Northern willowherb ( <i>Epilobium ciliatum</i> )	Leaf lesions
Kinnikinnik ( <i>Arctostaphylos uva-ursi</i> )	Leaf blight and twig dieback; stem and root rots
Camellia ( <i>Camellia</i> spp.)	Water-soaked leaf lesions on tip or edge; diffuse margins or thick black zone lines; premature leaf drop
Andromeda ( <i>Pieris</i> spp.)	Similar to rhododendron; branch tip dieback; premature leaf drop
Holly ( <i>Ilex</i> spp.) and Ninebark ( <i>Physocarpus opulifolius</i> )	Leaf blight

Table 1: Common hosts of *Phytophthora ramorum* in Alaska and associated symptoms.

**Because *Phytophthora ramorum* is a federally regulated plant disease, it is important to report suspected infections and not attempt to treat on one's own.**

## Additional Information

The State of Alaska Division of Agriculture can assist with plant pathogen identification and control questions. Please contact the Alaska Plant Materials Center - Plant Pathology Laboratory:

(907)745-8138 or [todd.steinlage@alaska.gov](mailto:todd.steinlage@alaska.gov)

Pictures of plant diseases can be submitted for identification through our online pest portal at: <https://pestreporter.alaska.edu/>

For more information on this pathogen and others, visit our online course on Exotic Plant Pathogens available at: <https://exoticplantdiseases.open.uaf.edu/>

Header image citations L-R: 1)Biologische Bundesanstalt für Land- und Forstwirtschaft, Bugwood.org; 2)Ministry of Agriculture and Rural Affairs, Bugwood.org; 3)Biologische Bundesanstalt für Land- und Forstwirtschaft, Bugwood.org; 4) Central Science Laboratory, Harpenden, British Crown, Bugwood.org; 5) Joseph OBrien, USDA Forest Service, Bugwood.org

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