

Appendix D. Symptoms Associated with *P. ramorum*



Symptoms of *Phytophthora ramorum*

Ramorum Foliar Blight and Dieback

Foliar Blight and Dieback Hosts

Selected Hosts:

- Camellia
- Rhododendron
- Pieris
- Viburnum
- Kalmia (Mountain Laurel)
- Syringa (Lilac)
- Camphor
- Loropetalum
- Osmanthus
- Douglas-fir
- Grand fir

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Camellia

- Symptoms can be subtle – pinhead lesions
- Look for irregular-shaped brown lesions on leaves
- Lesions can be on leaf tips, mid vein, edges of leaves
- Leaf drop due to *P. ramorum* infection is common with camellias



Photo: N. Grunwald, USDA ARS



Photo: C. Blomquist, CDFA



P. ramorum infected camellia leaves (photos provided by C. Blomquist, CDFA)

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Camellia



Pinhead lesions



P. ramorum infected camellia, C. Blomquist, CDFA

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Camellia



P. ramorum infected camellia leaf, flower buds and leaf petiole, S. Tjosvold

As with other hosts, many of the visual symptoms will occur where water tends to collect following irrigation, or on lower plant parts in areas which stay wet for longer periods of time.

Some of the images are representative of advanced symptoms which were found with greater frequency in the early years of the program. With the current surveys and policies, it has become rarer to encounter advanced symptoms. As a result, visual surveys have become more challenging and may require a more thorough inspection inclusive of lower foliage and stems.

As with most hosts, *P. ramorum* lesions typically extend through the leaf, with the lesion appearing identical on the upper and lower surfaces.

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Rhododendron



Photo: J. Parke, OSU



Photo: E. Hansen, OSU



P. ramorum infected rhododendron leaves, S. Tjosvold



Photo: E. Hansen

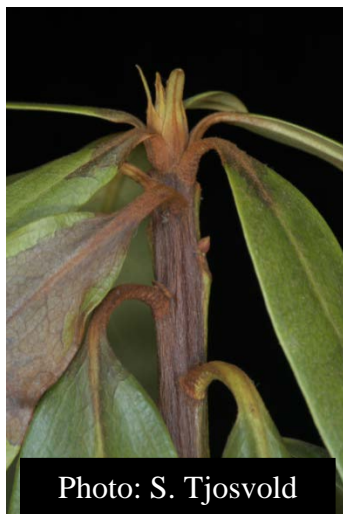


Photo: S. Tjosvold



Photo: S. Tjosvold

P. ramorum infected rhododendron stems and petioles. Infected rhododendron flower bud.

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Pieris



P. ramorum infected Pieris leaves, stems, flowers, N. Osterbauer, ODA

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Viburnum



P. ramorum infested viburnum, Oregon Department of Agriculture



P. ramorum infested viburnum, Jennifer Parke, Oregon State University

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Viburnum



P. ramorum infested viburnum, Oregon Department of Agriculture



P. ramorum infested viburnum leaves, J. Parke, OSU



P. ramorum infested viburnum

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Kalmia



P. ramorum infested Kalmia stems and leaves, Oregon Department of Agriculture



Kalmia leaves infested by *P. ramorum*, DEFRA, UK

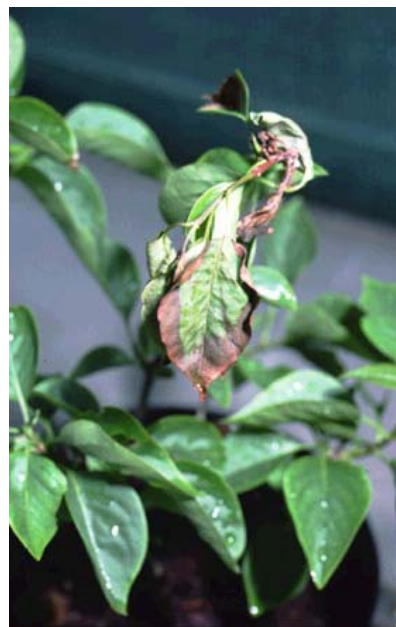
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Kalmia



P. ramorum infested Kalmia foliage, J. Fallacy, WSDA

Syringa (Lilac)



P. ramorum infested Lilac foliage, Scottish Agricultural Science Agency

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Camphor



P. ramorum infested camphor tree leaves and green branches, C. Blomquist, CDFA

Loropetalum



P. ramorum infested Loropetalum leaves, C. Blomquist, CDFA

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Osmanthus



P. ramorum infested *Osmanthus fragrans*, C. Blomquist, CDFA



O. fragrans leaves, C. Blomquist



P. ramorum infested *O. heterophyllus*, C. Blomquist

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Osmanthus



P. ramorum infested *O. heterophyllus* plant and leaves, C. Blomquist, CDFA

Conifers



Grand Fir, Photo: Santa Clara Dept. of Ag.



Douglas Fir, Photo: Dave Rizzo, UCD