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Phytophthora ramorum

Last Modified:

Phytophthora ramorum is an invasive plant pathogen that causes sudden oak death, ramorum blight, ramorum dieback, and *Phytophthora* canker diseases. There is no cure for the diseases caused by *P. ramorum*. Preventing the movement of infected plants and materials is the best way to protect our forests and landscape plants.

The water mold, *P. ramorum*, is an invasive pathogen that can infect over 100 plant species (319.67 KB). In coastal California and southern Oregon, *P. ramorum* causes

sudden oak death, a disease which has killed millions of trees, primarily tanoak and coast live oak. The pathogen also causes twig and leaf diseases in several common nursery and landscape plants.

What To Look For

Symptoms vary on different types of plants. They can include:

- Trunk and branch cankers
- Brown to black lesions on leaves
- Twig dieback

An official diagnosis must be made by a trained professional and confirmed by laboratory testing. If you believe your plant may be infected with *P. ramorum*, please take the following actions:

1. Check the list of plants that are susceptible to *P. ramorum* (319.67 KB) to see if your plant type is there.
2. Compare the symptoms you're seeing to the California Oak Mortality Task Force Symptom Gallery.
3. Report symptomatic plants to your State plant health director or State plant regulatory official.

How To Prevent This Disease

P. ramorum can infect several native and non-native plant species, including many common nursery and landscape plants. To prevent disease spread:

- Only buy healthy plants from reputable sources.
- Do not move plants that appear sick or dying.
- Disinfest pruning and other gardening tools between plants.
- Because *P. ramorum* is a water mold that thrives in wet conditions, reduce standing water in your yard or garden and avoid overhead irrigation.

How It Is Treated

There is no treatment for *P. ramorum* infection. Prevention is the best defense.

Report Plant Pests and Diseases

Have you seen this pest or signs of pest damage? Immediately report your findings.
Find your State plant regulatory official
Find your State plant health director

Controlling *Phytophthora ramorum*

Expand All

Current Status

APHIS works to limit the spread of *P. ramorum* from regulated nurseries and quarantine areas to nurseries and areas that are free of the pathogen. We use both regulatory and non-regulatory strategies to achieve this goal. This includes public education, quarantines, inspection, surveys, and a compliance program that promotes nursery best management practices.

Detection History

Sudden oak death was first reported in 1995 on a tanoak in Marin County, California. Since then, the *P. ramorum* pathogen has been confirmed on various native hosts in 16 counties in California (Alameda, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, and Trinity) and 1 county in Oregon (Curry). Through ongoing surveys, APHIS continues to define the extent of the pathogen's distribution in the United States.

Regulatory Information

- Regulated Areas (172.13 KB)

- Regulated Articles (226.42 KB)
- Quarantined and Regulated Counties Map (2.69 MB) (April 2022)
- Federal Regulations, 7 CFR 301.92 - 301.92-12
- Federal Order: Restrictions on *P. ramorum* Host Plant Imports (42.79 KB) (4/18/2012)
- Canadian Food Inspection Agency Current Import Requirements

Information for Cooperators

- *Phytophthora ramorum* Domestic Regulatory Program Manual (1.73 MB)
- List of Proven Hosts and Plants Associated with *P. Ramorum* (319.67 KB)

Diagnostic, Sampling, Response, and Survey Information

- Critical Control Point Assessment Template (285.88 KB)
- Diagnostics Work Instruction Table (231.89 KB)
    - Current versions of all Work Instructions are available on the APHIS Laboratory Portal
- Sample P. ramorum Compliance Agreement (1.09 MB) (Revised 05/2024)
- Potentially Actionable Suspect Sample (PASS) System (363.29 KB) (Revised 3/2024)
- Symptoms Associated With P. ramorum (3.39 MB)
- Nursery Survey Questionnaire (489.71 KB)
- PPQ Form 391 (364.31 KB)
- 2013 *P. ramorum* Farm Bill Nursery Survey Criteria (167.83 KB)
- National Plant Diagnostics Network
- Phytophthora ramorum: Confirmed Nursery Protocol Checklist (135.2 KB)
- Phytophthora ramorum: Positive Nursery Guidance (165.7 KB)

Nursery Best Management Practices

- National Ornamental Research Site Best Management Practices Manual
- Presidio Phytophthora Management Recommendations
- Safe Procurement and Production Manual: A Systems Approach for the Production of Healthy Nursery Stock

- UC Davis Best Management Practices for *Phytophthora ramorum*
- Phytophthora Online Course: Training for Nursery Growers
- Accreditation to Improve Restoration (AIR) Nursery Program

Evolution of the Phytophthora ramorum Program

Visit our *Phytophthora ramorum* story map and take an inside look at how the pathogen spread and program developed.

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