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# Phytophthora ramorum

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*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.
- Disinfect 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*

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### 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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