Nurseries in those three States that ship P. ramorum host and associated host plants interstate must have their nursery stock inspected, sampled, and tested by State officials before those plants can be transported across State lines. APHIS verifies the results of these tests. Nurseries that ship nonhost plants interstate must undergo a visual inspection to ensure that those plants are not exhibiting P. ramorum symptoms before interstate shipment.

Although quarantines are in place in 14 northern California counties and 1 county in Oregon (where the pathogen exists in the environment), eradication of the pathogen from nurseries is the best defense against long-distance spread. The goal of APHIS is to determine the distribution of infected plant material in the United States and to limit the human-caused spread beyond the infected areas through quarantines and a public education program. APHIS is working with other Federal agencies, the States, conservationists, and industry to accomplish this important goal. If you suspect that trees or plants are infected with P. ramorum, contact your State department of agriculture or your local extension specialist.
Background

In 1995, a mysterious and sometimes lethal plant pathogen was detected for the first time in the woodland environment of Marin County, CA. Over the next several years, foresters, conservationists, plant pathologists, and the general public noticed that trees were dying in large numbers in coastal northern California. Initially observed in a limited number of oak species, the organism infected and eventually killed thousands of tanoaks, as well as coast live oaks, California black oaks, canyon live oaks, and Shreve oaks. The pathogen also infected, but did not kill, a number of other plants.

Through extensive study and cooperative research, scientists identified the pathogen in 2000 as a water mold called Phytophthora ramorum. It is now known to be the cause of several plant diseases, including ramorum leaf blight, ramorum dieback, and Phytophthora canker diseases, but the most widely known of these is sudden oak death.

First discovered in Germany and the Netherlands in 1993, the pathogen has now turned up in 15 countries, including England, Belgium, Poland, Spain, and the Canadian province of British Columbia.

P. ramorum has a broad range of hosts, including hardwoods (e.g., coast live oak), softwoods (e.g., coast redwood), landscape plants (e.g., camellia and rhododendron), and herbaceous plants (e.g., western starflower). To date, more than 75 plant species and cultivars representing more than 45 genera can either be infected by P. ramorum or facilitate its spread.

Plants Naturally Infected With Phytophthora ramorum

Plants in the following genera are highly susceptible to infection by P. ramorum:

- Camellia,
- Rhododendron,
- Viburnum,
- Pieris,
- Syringa (lilac),
- Kalnus (mountain laurel),
- Quercus (oak), and
- Umbellularia (California bay laurel).

To learn more about other plants susceptible to P. ramorum, please visit the APHIS Web site at: <http://www.aphis.usda.gov/ppq/ispm/pramorum>.

Movement and Infection in Plants

Phytophthora ramorum thrives in cool, wet climates, but significant infections can occur in nurseries with microclimates that favor disease. The organism is known to spread through wind-blown rain, contaminated irrigation water, and infected plants, and it may spread in ways not yet discovered.

Movement of the pathogen in soil or potting mix is also possible.

Depending on the plant species, P. ramorum infections may occur on the trunk, branches, and/or leaves. Infections that result in tissue death and callus response on the woody portions of a tree are referred to as cankers. In foliar and twig hosts, symptoms can range from leaf spots to twig dieback, but these hosts rarely die from the infection.

Symptoms caused by P. ramorum are difficult to differentiate from those caused by other pathogens. For this reason, laboratory analysis is necessary to confirm the presence of P. ramorum.

P. ramorum Makes Its Way Into the U.S. Nursery System

During spring 2004, the California Department of Food and Agriculture confirmed the presence of P. ramorum, the sudden oak death pathogen, on several varieties of camellia plants at two large California wholesale production nurseries. Investigation of shipping records revealed that these facilities had shipped large quantities of several varieties of common household garden plants nationwide.

Stopping the Spread

Immediately following that discovery, the Secretary of Agriculture transferred to APHIS $15.5 million from the USDA Commodity Credit Corporation to prevent further spread of sudden oak death and to detect and eradicate P. ramorum from nurseries that had received the infected stock. APHIS launched a massive program to track the shipments of potentially infected host plants, test plants for P. ramorum, destroy infected plant material, inform nursery owners about disease management practices, and help nurseries and affected States recover from this event. APHIS used computer-generated models to predict which areas of the country were...