



CALIFORNIA OAK MORTALITY TASK FORCE REPORT JULY 2006

RESEARCH

PARKE, J.L., Bienapfl, J., Oh, E., Rizzo, D., Hansen, E., Buckles, G., Lee, C., Valachovic, Y. Natural infection of tanoak seedling roots by *Phytophthora ramorum*. *Phytopathology* 96:S90.

Phytophthora ramorum, cause of Sudden Oak Death and ramorum blight, is believed to infect only the aboveground parts of trees. Tanoak (*Lithocarpus densiflorus*) seedlings and saplings with unusual symptoms were collected from three *P. ramorum*-infested sites in Humboldt Co., California: two in a coast redwood forest with an understory of tanoak, California bay laurel, madrone, and evergreen huckleberry, and one in a Douglas-fir/tanoak-madrone forest also containing redwood. Lower leaves of tanoak were necrotic or had dark discoloration of the midveins and petioles, while upper leaves appeared healthy. Roots and belowground stems were either asymptomatic, had internal discoloration of the vascular system, or had root lesions. *P. ramorum* was detected with PCR and isolated from taproots several cm below ground level. The pathogen was also recovered from belowground stems, aboveground stems, and symptomatic leaves. Infected tissues were viewed with SEM and light microscopy to visualize *P. ramorum* structures. This is the first report that *P. ramorum* can be recovered from roots of naturally occurring forest vegetation.

The 2006 American Phytopathological Society (APS) meeting, to be held July 29– August 2, in Québec City, Canada, will feature many symposia, papers, and posters on *Phytophthora ramorum*-related topics. To access more than 35 *P. ramorum*-related abstracts for the meeting, go to the APS website at: <http://www.apsnet.org>, under “Meetings,” “Annual Meeting 2006,” “Searchable Abstracts,” then check the “2006 Meeting Abstract” box, and search for “ramorum.” To search for all *P. ramorum*-related abstracts from 1999 to 2006, accessing the 96 abstracts related to *P. ramorum*, click the “All Annual Meeting Abstracts” box and search “ramorum.”

Bush, E.A., Stromberg, E.L., Hong, C., Richardson, P.A., and Kong, P. 2006. Illustration of key morphological characteristics of *Phytophthora* species identified in Virginia nursery irrigation water. Online. Plant Health Progress doi:10.1094/PHP-2006-0621-01-RS. <http://www.plantmanagementnetwork.org/php/default.asp>.

Public Summary: *Phytophthora* diseases are commonly diagnosed on ornamental plants, but taxonomic identification to species can be intimidating. This illustrative guide is designed to aid diagnosticians in morphological identification of certain *Phytophthora* spp. that have been reported in irrigation and effluent water in nurseries. Using both morphological and molecular methods, the authors identify diagnostic characteristics that are consistent and easy to use.

REGULATIONS

Two new plant species, *Osmanthus fragrans* (sweet olive) and *Osmanthus heterophyllus* (false holly), have been found *P. ramorum*-positive. USDA Animal and Plant Health Inspection Service (APHIS) is reviewing the findings and anticipates adding these new species to the APHIS *P. ramorum* associated host list in the



near future. Both species were identified following the self-reporting of a Humboldt County nursery find of a *P. ramorum*-positive *Viburnum tinus*. Both *Osmanthus* species were located in the same bed as the positive *Viburnum*, and exhibited leaf spotting and twig dieback symptoms.

Additionally, on June 9, APHIS confirmed *Nerium oleander* (Oleander) as a new *P. ramorum*-associated host, when delimitation survey samples from the Humboldt County facility were confirmed positive. Humboldt County is working with the nursery on eradication efforts.

USDA APHIS has posted the federal “Protocol for Forest and Wildland Environments” to their website at:

http://www.aphis.usda.gov/ppq/ispm/pramorom/pdf_files/forestwildlandprotocol.pdf.

The 50-page document provides guidance and instruction for new *P. ramorum* wildland detections in the US, and covers survey, communications, diagnosis/confirmation, sampling, treatments, regulatory action, and other topics.

The Protocol calls for immediate federal notification and state action if suspect positives are detected in forests and wildland areas outside the currently quarantined area and are more than twenty-five miles from a generally infested location. Once confirmed, an eradication or suppression program should be implemented. Failure to do so could result in a Federal quarantine on the county. Additionally, failure of a state to initiate regulatory action would necessitate a federal quarantine on the entire state.

MONITORING

The first *P. ramorum*-positive beech in the Netherlands was reported on June 16, 2006. The findings were made by Ministry of Agriculture, Nature Management, and Fisheries researchers in the municipalities Oath and Nijmegen. Symptoms included stem bleeding. This is the first time a plant species native to the Netherlands has been identified with the pathogen. At both locations the affected beech were surrounded by heavily infected rhododendrons. For more information on the status of the pathogen in the Netherlands, contact Maarten Steeghs, Netherlands Plant Protection Service, at: m.h.c.g.steeghs@minlnv.nl.

The UK Forestry Commission is conducting various surveys this year to determine the current status of *P. ramorum* and *P. kernoviae* in England and Wales. The effort is a result of a 2005 Interdepartmental *Phytophthora* Program Board agreement that the high- and low-risk woodlands in England and Wales (high or low risk defined on the basis of climate) already surveyed by the Forestry Commission in 2004, should be resurveyed to determine whether they are still disease-free. This National Re-survey is being conducted over five years, and will concentrate on woodland areas where *Rhododendron ponticum* is also found growing. The first year of the repeated survey of England and Wales, took place during July and August 2005, with no positive findings in the 149 woodlands inspected. This year’s survey began in late June and will continue until late August. To date, the main outbreak area where rhododendrons and trees are infected by both *Phytophthoras* has been in Cornwall. This year, the UK’s Department for Environment, Food, and Rural Affairs (DEFRA) extended the survey program to include previously unsurveyed locations in Cornwall, which the Forestry Commission supplemented with an additional 14 previously unsurveyed sites. These intensive surveys have resulted in the finding of a *P. ramorum* outbreak in Devon,



near the Cornish border. As a result, the Commission and DEFRA will survey more of the Devon woods to determine if *P. ramorum* is more extensive than previously thought, and also to determine if *P. kernoviae* is present as well.

Reports on these surveys should be available on the Commission's Plant Health Service website, www.forestry.gov.uk/planthealth, by the end of the year. Further information is available from DEFRA website at: www.defra.gov.uk, or by contacting the Commission's Plant Health Service at: plant.health@forestry.gsi.gov.uk.

NURSERIES

Forty-three states have reported compliance inspection or National Nursery Survey results. Puerto Rico, Iowa, and Missouri are not participating in the Survey, and Wisconsin is looking for *P. ramorum* as part of their regular nursery inspection process. To date in 2006; 2,786 nurseries have been visited, with 88,973 samples collected. Out of the samples collected, 327 have been confirmed *P. ramorum*-positive, totaling 42 positive sites in five states (California, Oregon, Washington, Florida, and Mississippi).

California had six *P. ramorum*-positive nursery confirmations in June. Two production facilities, one in Sonoma County and the other in San Joaquin County, both had camellias found to be *P. ramorum*-positive during compliance agreement inspections. The Sonoma County facility was previously found positive in 2004, but does not ship interstate. The San Joaquin County facility was also found positive in 2005, and completed the Confirmed Nursery Protocol (CNP) in April of 2005. This nursery does not ship interstate either. Two Sacramento County retail facilities were also found *P. ramorum*-positive. One of the nurseries is not under a compliance agreement and does not ship to other nurseries. It was being inspected as part of a follow-up survey from a positive found at the site last year. The second nursery was receiving an initial non-host shipper inspection when positive *Camellia japonica* confirmations were made. The nursery is not under a compliance agreement and is not currently shipping plants. It was also found positive in 2005 during a nursery stock cleanliness inspection. A fifth site in Sonoma County was found to have *P. ramorum*-positive *Camellia sasanquas* during a nursery stock cleanliness inspection. This retail facility was also found positive in 2004 and 2005. The nursery does not ship out of the quarantined counties or to other nurseries. The final confirmed nursery was a retail facility in San Mateo County. The positive plant was an established CA bay laurel. The retailer in San Mateo County was confirmed positive for *P. ramorum* on 6/26/06. The sample was collected by San Mateo agricultural commissioner's office after a plant pathologist informed the county that the nursery had possible *P. ramorum* symptoms. This nursery has not previously been positive for *P. ramorum*, is not under compliance, and does not ship out of the quarantined counties. These new finds bring the State's 2006 total number of *P. ramorum*-positive nurseries to 24, compared to 52 positive finds at this time in CA in 2005.

The Oregon Department of Agriculture (ODA) has completed its *P. ramorum* Federal Order certification for 2006. The certification program inspections began on February 15th and were completed on June 30th. During this time, ODA staff collected 62,045 samples from 1,112 growing areas to test for the presence of the pathogen. *Phytophthora* species were detected at 16 percent of the surveyed sites. *P. ramorum* was found at thirteen nurseries (about 1.0 percent). The USDA Confirmed



Nursery Protocol has been enacted at all thirteen sites. A total of 938 host and 1,000 non-host nurseries in Oregon now qualify for certification under the Federal Order certification program.

ODA has also completed its statewide survey of Christmas tree plantations. A total of 4,480 samples were collected from 113 plantations for pathogen testing. No *P. ramorum* was found at any of the plantations surveyed, although *Phytophthora* species were detected at 2 percent of the sites. This is the fifth consecutive year no *P. ramorum* has been found in Oregon Christmas trees.

A *P. ramorum* survey of Oregon retail nurseries is now under way. ODA plans to survey and sample approximately 150 retail nurseries that sell *P. ramorum*-susceptible plants.

POLICY

The House of Representatives Resources Committee's Subcommittee on Forests and Forest Health held an oversight hearing June 21, 2006 on "Forest Insects and Disease; A Growing National Problem, 'GAO Report on Invasive Forest Pests.'" An outline of the agenda, as well as testimonies of those at the hearing, can be found on the Committee on Resources website at: <http://resourcescommittee.house.gov/archives/109/ffh/062106.htm>.

KUDOS

Congratulations to the Oregon Sudden Oak Death Eradication Program team for being recognized as one of four success stories (one each for weeds, insects, pathogens, and aquatics) working on invasive species issues. The team was acknowledged for their work on eradicating Sudden Oak Death in Curry County, OR. The award was presented by the Chief of the Forest Service, Dale Bosworth, on June 13, 2006 at the first Forest Service National Conference on Invasive Species. Ellen Goheen and Doug Daoust, USDA Forest Service; Everett Hansen, Oregon State University; Alan Kanaskie and Mike McWilliams, Oregon Department of Forestry; and Nancy Osterbauer, Oregon Department of Agriculture were honored.

MEETINGS

The Sudden Oak Death Science Symposium III will be held March 5 – 10, 2007 at the Hyatt Vineyard Creek Hotel and Spa in Santa Rosa, Sonoma County, CA (170 Railroad St., Santa Rosa, CA 95401; 707/284-1234). The call for papers, a Symposium website, and additional information will be available soon.

PERSONNEL

The USDA Forest Service, Pacific Southwest Region California Oak Mortality Task Force representative is Plant Pathologist Andi Koonce. She is part of the Southern California Shared Service Area and is located at the San Bernardino National Forest office (602 South Tippecanoe Ave, San Bernardino, CA 92408-2673). She is active in Sudden Oak Death (SOD) management activities at the Los Padres National Forest, and she supports the Region in analysis of its SOD program. Andi may be reached at: (909) 382-2673 or akoonce@fs.fed.us.

In addition to Andi, the region has a team of forest health protection specialists that provide technical assistance to forest managers and partners in California working on SOD. As a team they set program and financial priorities for the Region and are actively



engaged in evaluating and monitoring SOD grants. Team members include Andi, Pete Agwin, Plant Pathologist, and Dave Schultz, Entomologist, at the Northern Shared Service Area (Redding, CA); Lisa Fischer, Forest Health Monitoring Program Manager (McClellan, CA), and Julie Lydick, Assistant Director of State & Private Forestry (Vallejo, CA). The Region's vacant Regional Plant Pathologist position is expected to be filled soon; that person will have a key role in managing the program.

CALENDAR OF EVENTS

7/20 – Free “Forest Management in Western Sonoma County: Sudden Oak Death (*Phytophthora ramorum*) and Other Issues for Small Landowners” workshop; 10:30 am. – 4:30 p.m.; Forum Room, Guerneville Regional Library; 14107 Armstrong Woods Rd., Guerneville, CA 95446; Registration is required.; For more information, or to register, visit the COMTF website at: www.suddenoakdeath.org or contact Janice Alexander at: (415) 499-3041 or jalexander@ucdavis.edu.

10/9 – 12 – 6th California Oak Symposium, titled “California’s oaks: Today’s challenges, tomorrow’s opportunities;” The conference features a field trip and two indoor sessions on Sudden Oak Death, and is intended for academics, planners, conservation practitioners, foresters, arborists, land owners, and oak enthusiasts. For more information, visit the Symposium website at: <http://danr.ucop.edu/ihrmp/symposium.html>.

3/5 -3/10/2007 - Sudden Oak Death Science Symposium III; Hyatt Vineyard Creek Hotel and Spa; 170 Railroad Street; Santa Rosa, CA 95401; Additional information will be forthcoming. For questions, contact Katie Palmieri, CA Oak Mortality Task Force Public Information Officer at: palmieri@nature.berkeley.edu or (510) 847-5482.