



CALIFORNIA OAK MORTALITY TASK FORCE REPORT JULY 2009

REGULATIONS

South Carolina implemented state regulations on 6/3/09 regarding the importation of *P. ramorum* host plants into South Carolina from California, Oregon, and Washington nurseries. As of 6/26, any *P. ramorum* host, associated host, or other regulated article moving into South Carolina from any area regulated for the pathogen must be accompanied by a state phytosanitary certificate. In addition, prior notification of movement of *P. ramorum* host and associated plant material is required at least 24 hours prior to scheduled shipment arrival. The certificate must list the type and quantity of plants, the address of shipper, the name and address of the recipient, the date and results of last *P. ramorum* nursery test, and contact number(s) of the shipper and recipient. Commodities shipped in violation of the requirements or with positive test results may be returned to their point of origin or destroyed at the owner's expense. For more information, contact Christel F. Harden, State Plant Regulatory Official, at charden@clemsun.edu.

A Federal Order prohibiting all countries from importing *Alnus* spp. (alder) plants for planting (excluding seed) into the US was issued on 6/22/09 by the USDA Animal and Plant Health Inspection Service because they are hosts of *Phytophthora alni*. *P. alni* is a destructive plant pathogen that seriously affects and leads to the death of plants in its host genus, *Alnus* Mill, and it is rapidly spreading through European riparian environments, possibly through the movement of plants for planting. To prevent the introduction and dissemination of this pathogen into the US, implementation of the Federal Order will begin 7/6/09, and will remain in effect until a pest risk analysis has been completed and appropriate effective mitigation measures have been established. For more information, contact Arnold T. Tschanz at (301) 734-5306 or Arnold.T.Tschanz@aphis.usda.gov.

NURSERIES

A Sacramento, CA production nursery was found to have *P. ramorum*-positive *Camellia japonica* and *Arctostaphylos* 'John Dourley' on 6/26/09. The confirmation was made as part of an annual compliance agreement inspection. The compliance agreement has been suspended, and the confirmed nursery protocol (CNP) is under way. This nursery does ship host and associated host plants interstate. This is the first time this nursery has been identified as *P. ramorum*-positive. Trace-forward investigations are under way.

An Alameda County, CA retail nursery was found to have *P. ramorum*-positive *Rhododendron* 'Platinum Pearl' on 5/26/09 during a compliance agreement recertification inspection. The Alameda County Agriculture Commissioner's office has initiated the retail CNP and trace-back investigations. No out-of-state shipment of *P. ramorum* host material has been made from this nursery during the past 12 months. This is the first time this nursery has been identified as *P. ramorum*-positive.



A Kitsap County, WA residential landscape site was found to have *P. ramorum*-positive *Rhododendron* Sp. 'Roseum Elegans' on 6/10/09 as part of a trace-forward investigation from an infested wholesale/production nursery in Thurston County, WA. The plant was removed and destroyed per the APHIS, PPQ "Official Regulatory Protocol for *Phytophthora ramorum* Detections in Landscaped Residential or Commercial Settings."

A King County, WA production nursery was confirmed to have *P. ramorum*-positive *Rhododendron* Sp. 'Jean de Montaque' and *Rhododendron* Sp. 'Wojnar's Purple' on 6/23/09. The nursery was also found positive in 2006, 2007, and 2008.

A Greenville County, South Carolina residential landscape site was confirmed to have a *P. ramorum*-positive *Rhododendron* Sp. 'Catawbiense Boursault' on 6/25/09. The detection was made as a result of a trace-forward inspection of plants received from an infested nursery in Snohomish County, WA. The plant was removed and destroyed per the APHIS, PPQ "Official Regulatory Protocol for *Phytophthora ramorum* Detections in Landscaped Residential or Commercial Settings."

RESEARCH

Dominican University of California in San Rafael, CA has been selected as the research site (National Ornamental Research Nursery) for ornamental nursery-based studies that will initially focus on *P. ramorum*. Located in a quarantined county, the site will be designed to reflect ornamental nursery conditions, providing an opportunity for studies on the epidemiology and behavior of new and emerging ornamental pests and pathogens in a real-world setting. Scientists from the US as well as the international community will be welcome to submit proposals to conduct research at the facility. The COMTF will continue to provide updates on the Request for Proposals as information is provided to us.

Research at this facility is intended to provide the following information on *P. ramorum* in nursery settings as well as on other plant pathogens and pests: 1) data that will aid in reducing long-range spread through infected nursery stock shipments; 2) validation of established nursery Best Management Practices (BMPs) as well as new BMPs for nursery stock production; 3) new treatment or remediation options for soil and plant material to exclude, contain, and eradicate pathogens and pests; and 4) valuable epidemiological data to aid in more effective science-based regulatory actions. While this site will ultimately serve as a nursery research facility for new and emerging pests, it will initially focus on *P. ramorum*.

The USDA Forest Service (FS) and California Department of Forestry and Fire Protection are preparing to survey the surrounding forested environment for *P. ramorum* hosts and associated hosts. The California Department of Food and Agriculture (CDFA), Marin County Agricultural Commissioner, and Dominican University staff will survey the landscape materials on campus and in the surrounding residential community. All



symptomatic plants will be sampled and sent to the CDFA Plant Pest Diagnostic Center in Sacramento for identification.

Thanks to funding from the Farm Bill, and much footwork from Kathy Kosta (CDFA) and Karen Suslow (COMTF Nursery Committee), Nik Grünwald (ARS, Corvallis) and Jennifer Parke's (OSU) vision of a facility to address nursery research needs as they pertain to *P. ramorum* is finally being realized. Funding from the Farm Bill is being administered by USDA APHIS. Support for this project comes from USDA, CDFA, the National Plant Board, USDA FS, local agricultural commissioners, the nursery industry, and the American Nursery and Landscape Association, among others.

Goheen, E.M. and Frankel, S.J., tech. coords. 2009. *Phytophthoras* in forests and natural ecosystems. Proceedings of the fourth meeting of the International Union of Forest Research Organizations (IUFRO) Working Party S07.02.09. August 26-31, 2007, Monterey, CA. Gen. Tech. Rep. PSW-GTR-221. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 334 p.

The fourth meeting of the International Union of Forest Research Organizations (IUFRO) Working Party S07.02.09, *Phytophthoras* in Forests and Natural Ecosystems provided a forum for current research on *Phytophthora* species worldwide. Seventy-eight submissions describing papers and posters on recent developments in *Phytophthora* diseases of trees and natural ecosystems in Europe, Australasia, and the Americas are included. Research topics covered are *Phytophthora* biodiversity, ecology, epidemiology, management, and host-pathogen interactions.

The Proceedings are posted online at:

http://www.fs.fed.us/psw/publications/documents/psw_gtr221/psw_gtr221.pdf.

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Grünwald, N.J.; Goss, E.M.; Ivors, K.; Garbelotto, M.; Martin, F.N.; Prospero, S.; Hansen, E.; Bonants, P.J.M.; Hamelin, R.C.; Chastagner, G.; Werres, S.; Rizzo, D.M.; Abad, G.; Beales, P.; Bilodeau, G.J.; Blomquist, C.L.; Brasier, C.; Brière, S.C.; Chandelier, A.; Davidson, J.M.; Denman, S.; Elliott, M.; Frankel, S.J.; Goheen, E.M.; de Gruyter, H.; Heungens, K.; James, D.; Kanaskie, A.; McWilliams, M.G.; Man in 't Veld, W.; Moralejo, E.; Osterbauer, N.K.; Palm, M.E.; Parke, J.L.; Perez Sierra, A.M.; Shamoun, S.F.; Shishkoff, N.; Tooley, P.W.; Vettraino, A.M.; Webber, J.; and Widmer,



T.L. 2009. Standardizing the nomenclature for clonal lineages of the sudden oak death pathogen, *Phytophthora ramorum*. *Phytopathology* 99:792-795.

Abstract: *Phytophthora ramorum*, the causal agent of sudden oak death and ramorum blight, is known to exist as three distinct clonal lineages which can only be distinguished by performing molecular marker-based analyses. However, in the recent literature there exists no consensus on naming of these lineages. Here we propose a system for naming clonal lineages of *P. ramorum* based on a consensus established by the *P. ramorum* research community. Clonal lineages are named with a two-letter identifier for the continent on which they were first found (e.g., NA = North America; EU = Europe) followed by a number indicating order of appearance. Clonal lineages known to date are designated NA1 (mating type: A2; distribution: North America; environment: forest and nurseries), NA2 (A2; North America; nurseries), and EU1 (predominantly A1, rarely A2; Europe and North America; nurseries and gardens). It is expected that novel lineages or new variants within the existing three clonal lineages could in time emerge.

Hyder, N.; Coffey, M.D.; and Stanghellini, M.E. 2009. Viability of oomycete propagules following ingestion and excretion by fungus gnats, shore flies, and snails. *Plant Disease* 93:720-726.

Abstract: Sporangia of *Phytophthora capsici* and *P. nicotianae*, as well as hyphal swellings of *Pythium splendens*, *P. sylvaticum*, and *P. ultimum*, were ingested by adult shore flies but none were viable after passing through the digestive tract. Oospores of *Pythium aphanidermatum* retained their viability following ingestion by adult shore flies. Larval stages of fungus gnats and shore flies ingested sporangia of *Phytophthora capsici*, *P. nicotianae*, and *P. ramorum*, but they were not viable upon excretion. In contrast, hyphal swellings of *Pythium splendens*, *P. sylvaticum*, and *P. ultimum*, chlamydospores of *Phytophthora ramorum*, and oospores of *Pythium aphanidermatum*, retained their viability after passage through the digestive tract of these larvae. Snails were capable of ingesting and excreting viable sporangia and chlamydospores of *P. ramorum*, which upon excretion infected detached leaves. Although the impact of larvae and snails in the rapid dissemination of pathogen propagules is unknown, this work does highlight the possibility that some often-ignored animal–fungus interactions should be considered in long-range dispersal of pathogen propagules via food webs.

RELATED RESEARCH

Skelsey, P.; Rossing, W.A.H.; Kessel, G.J.T.; and van der Werf, W. 2009. Scenario approach for assessing the utility of dispersal information in decision support for aerially spread plant pathogens, applied to *Phytophthora infestans*. *Phytopathology* 99:887-895.

Weiland, J.E., Nelson, A.H., and Hudler, G.W. 2009. Effects of mefenoxam, phosphonate, and paclobutrazol on in vitro characteristics of *Phytophthora cactorum* and *P. citricola* and on canker size of European beech. *Plant Disease* 93:741-746.

**SOD SYMPOSIUM 4**

Thank you to everyone who attended the Fourth Sudden Oak Death Science Symposium. The Symposium included 57 presentations and 45 posters, and had 215 attendees from eight countries and 19 states. For those wishing to access the presentations, it is anticipated that they will be posted to the [Symposium website](#) by 9/1 along with the accompanying audio. Please contact Katie Palmieri at Palmieri@nature.berkeley.edu for questions regarding the Proceedings or for ideas regarding future meetings.

RESOURCES

The Rutgers University “Sudden Oak Death and Ramorum Blight caused by *Phytophthora ramorum*” DVD and CD-Rom set is now available for free. Information provided includes interviews, PowerPoints, photos, fact sheets and brochures (see the COMTF website for the most current information), and more. To order a copy, contact William Hlubik at (732) 398-5262 or hlubik@aesop.rutgers.edu or via mail at: Rutgers Cooperative Extension of Middlesex County Davidson's Mill Pond Park; 42 Riva Avenue; North Brunswick, NJ 08902. All recipients are asked to complete and return the evaluation form that on the CD-Rom to William Hlubik.

A “[Comparison of Relocatable Commercial Vehicle Washing Systems](#)” is available through the Forest Service. Systems tested were moderately priced, and were evaluated for cleaning system efficacy, recycling system performance, waste containment, and the amount of viable seeds remaining in the system waste.

Murdoch University in Western Australia officially launched a “Fishing for *Phytophthora*” website on 6/5 at the Dieback Information Group meeting. The website is intended to catalogue *Phytophthora* species found in Western Australia’s rivers, streams, dams, and estuaries. Currently over 100 locations are being monitored. Website information includes a project overview, a detailed map with findings noted at each location, an interpretation of the findings, the latest news on the project, and a photo gallery. To access the website, go to: <http://www.fishingforphytophthora.murdoch.edu.au/>. For more information on the project, contact Daniel Hüberli at D.Huberli@murdoch.edu.au.

CALENDAR OF EVENTS

3/7/10 – 3/12/10 - 5th IUFRO *Phytophthora* in Forest Trees and Natural Ecosystems Conference; Rotorua, New Zealand; For more information, contact Pam Taylor at pam.taylor@scionresearch.com.