

Detection and Distribution of *Phytophthora ramorum* in Soils¹

Elizabeth J. Fichtner², Shannon C. Lynch², and David M. Rizzo²

Abstract

Failure to detect *Phytophthora ramorum* in soils throughout the year does not denote absence of viable propagules, rather the inability to detect soilborne chlamydospores. The objectives of this study were: 1) to compare pear and rhododendron bait materials for detection of sporangia and chlamydospores, and 2) to assess the seasonal distribution of *P. ramorum* within redwood-tanoak forest soils. Soil was infested with sporangia or chlamydospores, baited with either pears or rhododendron leaves, then symptomatic bait tissues were transferred to selective medium. Chlamydospores were not detected by either bait material; however, rhododendron leaves were more sensitive than pears for detection of sporangia. Soil and leaf litter samples were collected monthly, from December 2003 to January 2005, under host trees, including *Sequoia sempervirens*, *Lithocarpus densiflorus*, and *Umbellularia californica*. *P. ramorum* was recovered from soils from December 2003 through June 2004, with the highest frequency of recovery occurring under *U. californica* and minimal recovery under *L. densiflorus*. Overall, recovery of soilborne inoculum was low, but underestimated given the limitation of baiting techniques for detection of chlamydospores. Future studies will address quantitative detection of pathogen propagules in soil and investigate the role of chlamydospores in pathogen survival.

Keywords: *Phytophthora ramorum*, sudden oak death, soil, baiting, detection

¹An abstract of a poster presented at the Sudden Oak Death Second Science Symposium: The State of Our Knowledge, January 18 to 21, 2005, Monterey, California.

²Department of Plant Pathology, University of California, Davis, California 95616: ejfichtn@ucdavis.edu