

Quantitative Resistance to *Phytophthora ramorum* in Tanoak¹

Katherine Hayden² and Matteo Garbelotto²

Abstract

Tanoak (*Lithocarpus densiflorus*) is among the hosts most heavily impacted by sudden oak death; up to 70 percent of tanoaks are infected, with correspondingly high mortalities, on individual sites. However, patches of healthy tanoak are often observed immediately adjacent to patches with heavy mortality, suggesting that there may be variability for resistance in the system. We report on a preliminary study of resistance to infection by *Phytophthora ramorum* within a single tanoak population. Sixty saplings grown from acorns collected on the Six Rivers National Forest were inoculated, using both standard underbark inoculations and a wounding leaf inoculation. There was significant variability in lesion size among individuals resulting from both techniques. Stem lesion area was positively correlated with leaf lesion area. Further, there was a significant block effect, whereby trees in south-facing rows of the lathehouse had smaller lesions than those in north-facing rows. This effect was less pronounced for the leaf assay. We conclude that there is variability in resistance to *P. ramorum* within tanoak populations, and that leaf inoculations provide a convenient, and easily replicated, assay for resistance.

Key words: *Lithocarpus densiflorus*, resistance, inoculation studies

¹ An 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.

² Department of Environmental Science, Policy, and Management, University of California, Berkeley, California 94720; khayden@nature.berkeley.edu