

**2008 APS CENTENNIAL MEETING
MINNEAPOLIS CONVENTION CENTER, MINNEAPOLIS, MN
JULY 26-30, 2008**

<http://www.apsnet.org/meetings/abstracts.asp>

**Dileo, M.V.; Bostock, R.M.; and Rizzo, D.M. 2008.
Ecophysiological factors mitigating *in planta* survival of *P. ramorum* in California bay laurel. *Phytopathology* 98:S46.**

Phytophthora ramorum, the causal agent of sudden oak death, has altered the community structure of coastal California forests by dramatically increasing the mortality rates of keystone species such as tanoak and oaks. In these ecosystems, bay laurel (*Umbellularia californica*) has been found to be the most important reservoir host for this pathogen both by supporting the majority of pathogen sporulation from ubiquitous, non-lethal foliar infections in the winter wet season and also by providing shelter during the dry, Mediterranean summer. The proportion of symptomatic bay leaves from which *P. ramorum* can be successfully isolated typically decreases during the summer. This putative loss of infection appears to occur to a greater extent within mixed-evergreen than redwood-tanoak forests. A field study was conducted during the summers of 2005, 2006 and 2007 to address these observations and to assess associations between summer survival of *P. ramorum* within bay laurel leaves and environmental, topographic and physiological variables. Isolation success from symptomatic leaves was tracked in 50 trees within 12 sites in the Sonoma and Mayacmas mountain ranges and compared to temperature, vapor pressure deficit, elevation, insolation, canopy exposure, leaf area, leaf water potential, and lesion area data. The resulting model describes environmental and physiological constraints on the summer survival of *P. ramorum* and will assist in the development of sudden oak death risk assessments.