Variation in Susceptibility of Umbellularia californica (bay laurel) to Phytophthora ramorum

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Phytophthora ramorum is an aerially-disseminated pathogen that threatens California coastal oak woodlands. A significant relationship between *Umbellularia californica* (bay laurel), an important foliar host in terms of spore production and transmission of disease, and *Quercus agrifolia* (coast live oak) has been observed. Severe stem cankers on *Q. agrifolia* are strongly associated with heavily infested *U. californica* trees. However, there are examples of both hosts growing in heavily infested areas with few symptoms. We designed a bioassay to screen for variation in susceptibility to *P. ramorum* among populations of *U. californica* collected along the coast of California to southern Oregon and also from Yosemite. Leaves of *U. californica* were inoculated with zoospores and nine days later lesions and infection percentage were measured. Results indicated that each population comprises trees of different susceptibility. Data from three separate trials indicated that trees from Oregon were less susceptible than those from California. There was little variation among populations from California. It is hypothesized that a number of factors contribute to these epidemics including host resistance, genetic structure of host species in the forests, pathogen variation, and environmental conditions.