Genotyping *Phytophthora ramorum* Isolates From Nurseries in the United States Using PCR-RFLP and Microsatellite Analyses[1]

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Abstract

The risk of introducing the important plant pathogen *Phytophthora ramorum* outside of its present natural range is of extreme concern; however, the detection of *P. ramorum* in U.S. nurseries is increasing. The USDA has confirmed the presence of *P. ramorum* in nurseries in 21 states that received plants from an infested, southern California nursery and others. This nursery produces approximately 15 million landscape plants annually, of over 2200 varieties. Although it remains unknown whether these new introductions will lead to an outbreak of sudden oak death (SOD) in the affected states, many potential susceptible hosts of *P. ramorum* are widely distributed in forest ecosystems, and many of the affected states have climatic conditions conducive for SOD. As part of an effort to genotype new nursery infestations, we characterized 19 of these isolates from 13 states with cox I-RFLP banding patterns (Kroon and others 2004) and microsatellite analyses (Ivors and others, unpublished data). All isolates screened produced the typical 'U.S.' RFLP pattern and showed no variation among 14 microsatellite loci. These results indicate that all isolates analyzed consist of a single clone genotype, identical to isolates established in the wild in California and Oregon. This discovery is in contrast with findings from other nursery infestations in Oregon and Washington, where both the European and U.S. genotypes have been identified in infested blocks of plants.

Key words: *Phytophthora ramorum,* microsatellite

Reference:

Kroon, L.P.N.M.; Verstappen, E.C.P.; Kox, L.F.F.; and Bonants, P.J.M. 2004. **A rapid diagnostic test to distinguish between American and European populations of *Phytophthora ramorum*.** Phytopathology 94, 613-620.

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