

Goss, E.M.; Larsen, M.; Chastagner, G.A.; Givens, D.R.; and Grunwald, N.J. 2009. Variation within the NA1 clonal lineage of *Phytophthora ramorum* from US nurseries reveals migration pathways. *Phytopathology* 99:S45.

Populations of recently introduced plant pathogens that are limited to clonal reproduction may contain little genetic diversity, yet rapidly mutating genetic markers such as microsatellites can exhibit variation within these populations and be used to infer evolutionary processes and migration patterns. The sudden oak death pathogen, *Phytophthora ramorum*, is clonally reproducing and exotic to North America and Europe, where it has been found to infect a wide range of species including popular ornamentals. In US nurseries, the pathogen has moved from West Coast states eastward via shipments between nurseries. We genotyped variable microsatellite loci in *P. ramorum* isolates collected between 2004 and 2007 from nurseries in 19 states. For the NA1 lineage, which was present in all 19 states, we found that a dominant genotype (23% of the sample) was present in 14 of the states. Furthermore, NA1 isolates clustered into two groups, one containing isolates from Connecticut, Oregon, and Washington and the other isolates from California and the remaining states. We inferred from this pattern a major migration pathway originating from California and distinct migration events from the Pacific Northwest. This is consistent with the findings of USDA APHIS trace-forward and trace-backward investigations.