SUDDEN OAK DEATH IN SOUTHERN OREGON: COMPARING THE EU1 AND NA1 LINEAGES OF *PHYTOPHTHORA RAMORUM*

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Phytophthora ramorum is the cause of Sudden Oak Death and is an invasive pathogen in California and southwestern Oregon forests. Until recently, forest infestations in Oregon and California have all been the NA1 clonal lineage. However in 2015, the EU1 lineage of *P. ramorum* was isolated from a tanoak tree in the forest in Curry County, Oregon. In this region, tanoak (*Notholithocarpus densiflorus*) is the most susceptible species to *P. ramorum*, developing lethal stem cankers and sporulating on infected leaves and branches, spreading the disease. A variety of experiments were conducted, including field and greenhouse inoculations, in order to determine the relative threat of the new EU1 lineage compared to the NA1 lineage in Oregon forests. Overall, EU1 was shown to be more aggressive on Oregon trees than NA1. A sporulation assay demonstrated a 10-fold increase in sporulation of the EU1 isolates compared to NA1 isolates on tanoak. Results from a preliminary field experiment suggest that greater infection rates of a larger number of species occur under EU1 infested trees. An analysis of resistance in tanoak families inoculated with EU1 and NA1 isolates of *P. ramorum* indicated significantly larger cankers developing on EU1 inoculated trees compared to NA1 in 3/14 families. No trees were completely resistant to the pathogen. The accumulated evidence indicates that the EU1 lineage of *P. ramorum* is more aggressive and potentially poses a greater risk to Oregon forests than the NA1 lineage.

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