Phenotypic Variation between *P. ramorum* isolates from Washington and British Columbia Nurseries.

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Phytophthora ramorum is an invasive plant pathogen known to cause Sudden Oak Death and other blight-related diseases throughout North American and European nurseries and ecosystems.Three common lineages of *P. ramorum* are NA1, NA2, and EU1. Within North America, NA1 is the predominant lineage, although EU1 and NA2 have also been identified in the region. Common *P. ramorum* treatments include fungicides, such as Metalaxyl-M, for which standardized treatment concentrations have previously been developed. However, it has been previously observed that some *P. ramorum* isolates have shown resistance to Metalaxyl-M, and thus fungicide resistance should be further studied. Here, we seek to investigate fungicide resistance and aggressiveness phenotypes of EU1, NA1, NA2, and NA2/EU1 hybrid *P. ramorum* lineages. To study this, 22 Washington State (WA) isolates and 20 British Columbia (BC) isolates were studied. Each isolate was grown on Metalaxyl-M amended media ranging from 0 to 10 ppm, and EC50 (estimated concentration resulting in 50% mortality) values were observed. Additionally, aggressiveness of WA isolates was measured via leaf inoculation and measurement of lesion area. Preliminary results indicate that 5 of the isolates studied showed EC50 values greater than 1.0 ppm. This indicates that other methods of treatment for *P. ramorum* may be required to effectively eliminate the pathogen, and that *P. ramorum,* specifically EU1, may be developing Metalaxyl-M resistance in nurseries. Aggressiveness assay results indicate that NA1 lineage shows the widest range of aggressiveness of the lineages studied.

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