

Searching for the Cause of Sudden Oak Death

In March 2004, the discovery of *Phytophthora ramorum* on Camellia in a large production nursery in Los Angeles County, California, prompted trace forward and national survey sampling and testing of containerized ornamental plant material shipped to nurseries across the country. The Plant Disease Diagnostic Clinic (PDDC) at Cornell University conducted the testing for the National Plant Diagnostic Network's (NPDN) trace forward surveys, the New York State Department of Agriculture and Markets National Survey, and the United States Forest Service Northeast nursery perimeter survey.

During 2004, the PDDC processed a total of 1553 samples comprised of 260 trace forward samples, 1131 National Survey samples, and 162 U.S. Forestry nursery perimeter samples. Testing methods included isolation attempts, the use of a commercial Enzyme-Linked ImmunoSorbant Assay (ELISA) test kit, DNA extractions performed on samples testing positive with ELISA, and nested Polymerase Chain Reaction (PCR). Of the 1553 samples tested, 269 were positive for a *Phytophthora* species with the ELISA test kits. DNA extractions were performed and shipped to the USDA-APHIS-PPQ-CPHST laboratory for PCR testing. No positives for *Phytophthora ramorum* resulted from the nested PCR testing.

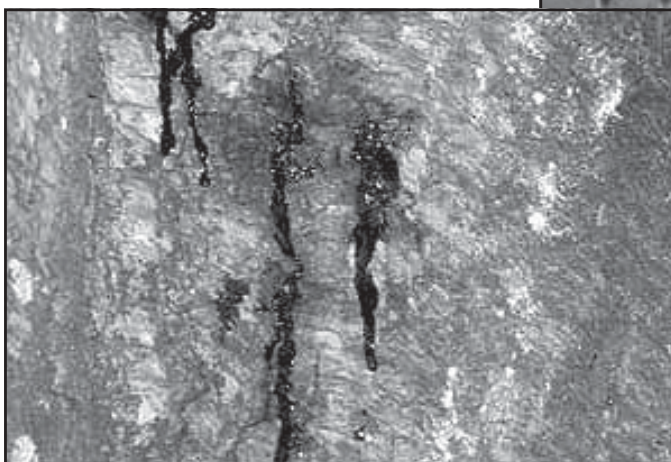
Because of the fear of spread, the testing continued during 2005. The PDDC processed a total of 700 samples comprised of 39 trace forward samples, 556 National Survey samples, and 105 U.S. Forestry nursery perimeter samples. Testing methods included the use of a

commercial Enzyme-Linked ImmunoSorbant Assay (ELISA) test kit, DNA extractions performed on samples testing positive with ELISA, and nested Polymerase Chain Reaction (PCR). Twenty-nine of 595 samples tested positive for a *Phytophthora* species with the ELISA test kits. DNA extractions were performed and shipped to the USDA-APHIS-PPQ-CPHST laboratory for PCR testing. All of the Forestry samples were tested using the nested PCR protocol. No positives for *Phytophthora ramorum* resulted from the nested PCR testing.

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Above: *P. ramorum* damage on Camellia. Photo by Steve Ashby.
Left: Ooze bleeds from a canker on an infected oak. Photo from USDA Forest Service.



CUTT

Program Spotlight

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