

Trace Forward, Perimeter, and National Nursery Surveys for *Phytophthora ramorum* in Texas¹

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Abstract

Four nursery surveys for *Phytophthora ramorum* have been, or are currently being, conducted in Texas. These consist of the original Pilot Survey during 2002-2003, the Trace Forward Survey during spring 2004, the National Survey during summer and fall 2004, and the U.S. Department of Agriculture Forest Service Perimeter Survey during summer and fall 2004. Four different agencies, including Texas A&M University, the Texas Department of Agriculture (TDA), the Texas Forest Service, and U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS PPQ) have been involved with one or more of the surveys. We discuss the Trace Forward and the Perimeter Surveys, each of which has focused on the 112 nurseries that received plant materials from Monrovia Nursery in California. The Perimeter surveys have been completed for 42 of the nurseries. Both surveys were conducted according to the systematic approaches devised and published by USDA APHIS and the USDA Forest Service. Samples were collected, returned to the laboratory, and processed for isolation of *Phytophthora* spp. on a selective medium (PARP). ELISA was performed for a subsample of the Trace Forward Survey and replicate samples in the Perimeter Survey were sent to Mississippi State University for processing by PCR. A total of 1620 samples were collected from the Trace Forward nurseries, consisting of six genera and 15 species of plants. There were 50 positive PARP isolations, of which 33 were *P. ramorum*. These specimens were taken from five nurseries. Another five nurseries have been confirmed for *P. ramorum* through samples submitted by USDA APHIS through the Texas A&M University, Texas Plant Diagnostic Laboratory. ELISA only had a 55 percent success rate in correctly diagnosing PARP positive samples for *P. ramorum*. Alternatively, the ELISA test had only a 3 percent false positive rate. One hundred thirteen samples have been collected in the Perimeter Survey. There are 32 species, of which 17 were oaks (*Quercus* spp.). No *Phytophthora* spp. have been isolated from these specimens, nor have any of the replicate samples tested positive for *P. ramorum* with PCR, indicating that there is little likelihood that the pathogen has escaped from the Trace Forward nurseries. Nursery operators, landscape maintenance personnel, natural resource managers and homeowners have benefited from these surveys by a better understanding of the threat posed by *P. ramorum* in Texas.

Key words: *Phytophthora ramorum*, sudden oak death, national survey

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