



Case study: Plum Pox Virus The National Plant Diagnostic Network

Plum pox virus (PPV) is a pathogen of stone fruits including plum, peach and apricot and is a quarantine pathogen. It was first identified in the United States in 1999 in an orchard in Adams County, Pennsylvania and in two locations in Canada in 2000. The USDA Animal and Plant Health Inspection Service (APHIS), in cooperation with state departments of agriculture initiated yearly surveys for the disease in 2000. Survey programs with no positive identifications usually end after a 5-year period. Because PPV can cause significant damage and eventual death to stone fruits, it was decided to continue surveying for another year in 2006. The virus was found in two states that year. At that time, the pathogen was listed as a select agent.

This virus was detected in two locations in New York on July 10, 2006. Three weeks later, late in the stone fruit season, it was detected in one location in Michigan. The National Plant Diagnostic Network was able to provide surge capacity to these surveys when sample loads increased dramatically in response to these detections in an effort to determine the extent of the area affected. In New York, the Northeast Regional Center Laboratory (NEPDN) of the NPDN has conducted the diagnostics for the PPV surveys since 2004. The positive detection in 2006 resulted in a 5-fold increase in samples from 14,000 samples in previous years to 67,385 samples in 2006.

In Michigan during 2007, the Michigan Department of Agriculture Laboratory, which previously processed all PPV survey samples, requested surge assistance from the Michigan State University North Central Plant Diagnostic Network Regional Center Laboratory (NCPDN). The NCPDN laboratory at MSU was able to process 33,344 Michigan samples during the 10-week surge.

The success of this surge support in Michigan and New York was due to the ability of the NPDN laboratories to quickly identify and train additional workers who could assist in the data entry, and PCR and ELISA diagnostic procedures approved by APHIS. Additionally, the NPDN had the needed equipment, supplies, protocols, permits and infrastructure in place before the first detections. In Michigan, none of the samples tested were positive for PPV, allowing the Michigan Department of Agriculture and APHIS to focus their resources on higher priority presumptive positive samples from other states. However, in New York additional positives have been found and researchers are conducting additional testing. Michigan has not detected PPV again since 2006.