

Plum Pox Virus: A prospective threat



Ring symptom caused by PPV on peach

Introduction: Plum Pox Virus (PPV), also known as Sharka, was first reported in Bulgaria in 1915 causing disease on plum trees. The virus causes disease on most stone fruit species and, over time, can lead to significant crop losses. It is one of the most important diseases of stone fruits worldwide. In 1999, the first North American report of the virus was confirmed from a peach orchard in Pennsylvania and since then, it has been reported in Michigan, New York, Ontario, and Nova Scotia. The disease has spread throughout Europe and into Africa and Asia but its presence in North America remains limited and, it is not present in Texas. Several strains of the virus exist and the strain present in

North America, known as PPV-D, is considered non-epidemic. It affects peaches, plums, and apricots, but does not cause disease on cherries. It is not known to be seed transmitted, and is less efficiently transmitted by insect vectors than other strains.

Symptoms: Symptoms and severity of the disease vary depending on the species, cultivar, age, and nutritional status of the affected host; the strain of the virus present; and temperature. Infected hosts often remain symptomless for around three years but molecular laboratory tests can detect the presence of the virus before symptoms appear. Symptoms can be seen on the leaves and fruit of most infected trees, and typically include yellowing of leaf veins and the presence of yellow, light green or, brown rings or blotches on leaves and fruit. In some species, such as apricot, rings appear on the surface of the seed. Plums and apricots may develop deformed fruit. Color-breaking may be seen on flower petals in peach, appearing as darker pink stripes along the petals. Plum is considered an



Yellowing of veins on peach leaves

excellent indicator species, as symptoms tend to be very prominent on plum hosts. Over time, plum pox virus infection leads to substantial crop losses in terms of size, quantity and quality of fruit. Much of the fruit in infected trees is dropped prematurely; typically 20-30 days before normal maturation. Eventually, infection results in the decline and premature death of trees.

Transmission: Aphids are responsible for short distance transmission of PPV. There are numerous aphid species capable of transmitting the virus and the efficiency of transmission depends upon a combination of geographic region, the strain of the virus present, and aphid vector species present. After feeding on an infected tree, the insects can carry and successfully transfer the virus to a healthy tree for around one hour. The virus can be spread through grafting. Long distance spread of the disease has occurred by the movement of infected plant material by humans.



Rings and blotches on plum leaves

Control: Strategies for controlling PPV in the U.S. have involved a combination of aggressive surveying, eradicating infected material, preventing the movement of potentially infected material and, controlling aphid vectors.

If you suspect that you have seen this disease or have questions, please contact your local AgriLife Extension county office (local office locator: <http://agrilifeextension.tamu.edu>) or the Texas Plant Disease Diagnostic Lab (phone: (979)-845-8032 email: plantclinic@ag.tamu.edu) for guidance on sampling and testing.

Peach fruit symptom image: European and Mediterranean Plant Protection Organization Archive, Bugwood.org
Leaf symptom images: Biologische Bundesanstalt für Land-und Forstwirtschaft Archive, Biologische Bundesanstalt für Land-und Forstwirtschaft, Bugwood.org

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