

Plum Pox Virus: A Threat to Texas?

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Plum Pox Virus (PPV), also known as Sharka, causes disease on most stone fruit species and, over time, can lead to significant crop losses. One of the most destructive stone fruit diseases worldwide, it affects peaches, plums, and apricots, but not cherries. It is not transmitted through seeds and is less efficiently spread by insect vectors (an organism that transfers a bacteria or virus) than other strains.

First reported on plum trees in Bulgaria in 1915, PPV has spread throughout Europe and into Africa and Asia. It was not documented in North America until 1999, when it occurred in a peach orchard in Pennsylvania. Since then, it has been reported in Michigan, New York, Ontario, and Nova Scotia. Its presence in North America remains limited and currently is not found in Texas. Several strains of the virus exist, and PPV-D, the strain in North America, is considered nonepidemic.

Symptoms

Disease symptoms and severity vary depending on the fruit species, cultivar, age, nutritional health of the affected tree, temperature, and the virus strain. Infected trees often remain without symptoms for about 3 years, but molecular laboratory tests can detect the presence of the virus before symptoms appear.

On most infected trees, symptoms include yellowing of leaf veins (Fig. 1) and yellow, light green, or brown rings or blotches on the leaves and fruit (Fig. 2 and Fig. 3). In some species, such as apricot, rings

appear on the surface of the seed. Color breaking on flower petals in peaches appears as darker pink stripes along the petals.



Figure 1. Yellowing of veins on peach leaves. *Photo credit: Biologische Bundesanstalt für Land-und Forstwirtschaft Archive, Biologische Bundesanstalt für Land-und Forstwirtschaft, Bugwood.org*

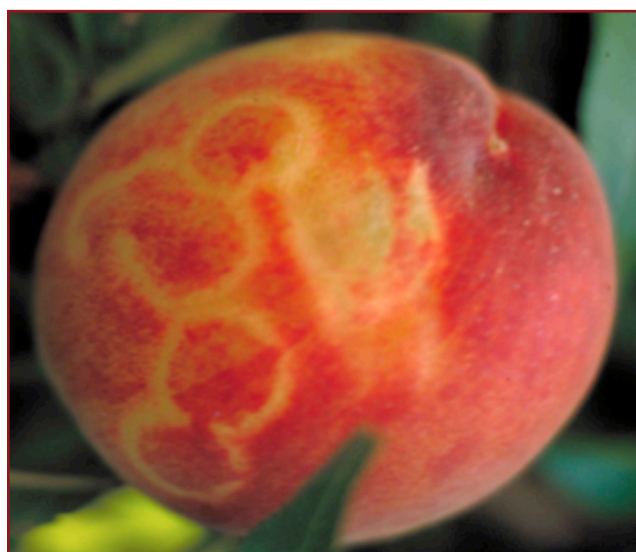


Figure 2. Ring symptom caused by PPV on a peach. *Photo credit: European and Mediterranean Plant Protection Organization Archive, Bugwood.org*

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Figure 3. Rings and blotches on plum leaves. *Photo credit: Biologische Bundesanstalt für Land-und Forstwirtschaft Archive, Biologische Bundesanstalt für Land-und Forstwirtschaft, Bugwood.org*

Because symptoms in plums tend to be very prominent, it is an excellent indicator species (can act as a sign or warning of local conditions). Plums and apricots may also develop deformed fruit.

Over time, PPV infection leads to substantial crop losses because of the poor size, quantity, and quality of the fruit. Much of the fruit in infected trees drops prematurely, typically 20 to 30 days before it normally matures. Eventually, the infection causes the decline and premature death of trees.

Transmission

Aphids are responsible for short-distance transmission of the disease. There are many aphid species capable of transmitting the virus, and how efficiently they do that depends on a combination of the geographic region, virus strain, and aphid species. After feeding on an infected tree, the insects have about an hour to transfer the virus to a healthy tree. Long-distance spread of the disease has occurred by humans moving infected plant material. The virus can also spread through grafting.

Control

Control strategies in the United States for PPV involve a combination of

- Surveying aggressively
- Eradicating infected material
- Preventing the movement of potentially infected material
- Controlling aphid vectors

If you have questions or suspect that you have seen this disease, contact your local Texas A&M AgriLife Extension Service 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.

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Extension Plant Pathology
<http://plantclinic.tamu.edu>

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