



Department
for Environment
Food & Rural Affairs

Plant Pest Factsheet

Plum Pox Virus (PPV)



Figure 1. Symptoms of plum pox virus on fruits of Japanese plum (*Prunus salicina*). Image courtesy of M. Cambra, IVIA, Moncada, Valencia (ES).

Background

Plum pox virus (PPV) causes a serious disease of stone fruit worldwide (also known as sharka). It attacks many wild and cultivated species of *Prunus*, including plums, apricots, cherries, peaches and almonds. This virus can decrease the yield of infected trees and can make fruit unsellable. This disease is spread by aphids as well as the movement and trade of infected nursery stock.

This virus has a restricted distribution in the UK. As a result, it is regulated under GB legislation with controls on certain plants for planting. Other non-statutory controls also exist.

Geographical Distribution

This virus was first reported in Bulgaria in the early 20th century and has since spread to most of Europe, including the UK. Since 1992, PPV has been spreading outside of the Euro-Mediterranean region. It now has a restricted distribution in the Americas, Africa, and Asia.

PPV was first recorded in England in 1965. It rapidly spread in England and became established in the main plum-growing areas. However, PPV has never been found in Scotland or Northern Ireland. Only isolated records of PPV have been found in Wales.

The current distribution is shown on the [EPPO Global Database](#) which is updated regularly.

Host Plants

The main hosts of PPV are the fruit-producing species of *Prunus*, including apricots (*P. armeniaca*), cherries (such as *P. avium*) peach (*P. persica*) and plum (*P. domestica*, *P. salicina* and *P. cerasifera*). Many *Prunus* species that are wild, ornamental or utilised for their rootstock, are hosts of this virus. Wild species could then act as natural reservoirs and provide a source of infection.

Description

Plum pox virus is assigned to the species *Potyvirus plumpoxi* in the *Potyviridae* family. Plum pox virus isolates can be classified into several strains that may infect different hosts. Only one strain is reported to be present in the UK (the D-strain).



Figures 2-3 from L-R: Two detached plum leaves infected with plum pox virus. A peach fruit exhibiting typical symptoms of plum pox virus. © Biologische Bundesanstalt.

Symptoms of PPV can vary greatly depending on the infecting strain, host species, host variety, locality and the season. Symptoms are often unevenly distributed and may only appear on a few branches or leaves. Alternatively, infected plants may not develop symptoms and, as a result, escape detection.

Early in the growing season, PPV can cause pale-green or light-yellow chlorotic spots, bands, rings or vein clearing on leaves (see **Figure 2**). Infected flowers may develop darker pink streaks on the petals. Infected fruits can show chlorotic spots, yellow rings or line patterns (see **Figure 3**). Fruits may also be deformed and show internal browning of the flesh; in apricots and certain plums, the stones show pale rings. Premature fruit dropping (up to 100%) can occur in the most susceptible cultivars.

Biology

Infected *Prunus* trees are the major source of inoculum. The disease develops slowly in the tree, usually affecting only one or two branches at first. It then moves through the tree as the virus multiplies over several years.

Spread by mechanical means, such as pruning, is not thought to present a risk and plum pox virus is not transmitted by seed or pollen. Instead, the virus is transmitted by two pathways. Firstly, the movement of infected plant material, such as rootstocks or budwood. Secondly, by aphids from other infected trees or wild hosts.

Aphids acquire the virus during feeding and can then spread it to healthy plants within a few minutes. However, they can only transmit PPV for a limited period of time after acquiring the virus. The main aphid vectors of PPV are *Aphis spiraecola*, *Phorodon*

humuli, *Hyalopterus pruni* and *Myzus persicae*, all of which are found in the UK. Other aphids can also transmit the virus.

Dispersal and Detection

The movement of infected plant material allows the rapid and long distance spread of the virus. By comparison, aphid vectors move the virus shorter distances within and between orchards.

Visual symptoms may be uneven or absent. As a result, they are not always a reliable indicator of the virus. Up to 20% of infected trees in orchards may not be detected by visual inspections. PPV can be more reliably detected by laboratory analysis of plant samples or by grafting test material onto highly susceptible hosts and monitoring for any symptoms.

Economic Impact

Although PPV doesn't usually kill trees, it can cause severe crop losses by impacting fruit yield and quality. Infection can trigger premature fruit dropping and the development of disfigured or blotchy fruits. Infected fruit can also become unmarketable, with a low sugar content, poor flavour and reduced shelf-life. As a result, PPV can reduce the yield of susceptible trees by 80-100%.

Pest Management and Reporting

There is no treatment for PPV. Once a tree has become infected, the only way to destroy the virus is to remove the tree and its root system.

The use of certified planting material, the destruction of diseased trees and the control of aphids help to prevent any outbreaks of the disease and reduce the risk of the virus spreading.

Suspected outbreaks of **plum pox virus** or any other non-native plant pest should be reported to the relevant authority:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, York.

Tel: 0300 1000 313

Email: planthealth.info@apha.gov.uk

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit**:

Email: hort.marketing@gov.scot

For **Northern Ireland**, contact the **DAERA Plant Health Inspection Branch**:

Tel: 0300 200 7847

Email: planthealth@daera-ni.gov.uk

Web: <https://www.daera-ni.gov.uk/topics/plant-and-tree-health>

For additional information on UK Plant Health please see:

<https://planthealthportal.defra.gov.uk/pests-and-diseases/uk-plant-health-risk-register/>

<https://planthealthportal.defra.gov.uk/>

<https://www.gov.uk/plant-health-controls>

<http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases>

<https://www.daera-ni.gov.uk>

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