

Xylella fastidiosa



Introduction

The bacteria *Xylella fastidiosa* is considered one of the most threatening plant pathogens of the world, affecting more than 600 plant species including species of high economic value such as olive, coffee, almond, lavender, etc. This bacteria was first described in the USA in the 19th century, and it was recognized as the responsible behind Pierce's disease in grapevines.

The main distribution area of *X. fastidiosa* is on the American continent, from Canada to Argentina, but the bacteria is now found outside its endemic area. The presence of the bacteria has been confirmed in Taiwan, Iran, Lebanon and Israel. In 2013, it was found for the first time in Europe, in Italy. Since then outbreaks have been observed in France, Spain and Portugal [[see distribution](#)].

There are four confirmed strains of this species, but high genetic recombination exists. In some cases, new subspecies can be adapted to infect new hosts. The symptoms and their severity vary depending on the strain and the host, with some plant species showing latent infection. However, even in these latent state, this plants can serve as inoculum sources. *X. fastidiosa* is transmitted by xylem-feeding insects encompassed within the Hemiptera order, primarily spittlebugs, sharpshooters, and leafhoppers. Insect vectors transmit the bacteria over short distances (their flight range is around 100 m, but they can travel longer distances aided by the wind), and the main pathway over long distances is the trade of contaminated plants.

Host

Xylella fastidiosa causes serious disease in a wide range of plants, including important crops and ornamental plants [[see list of hosts](#)].

High risk plants include: *Polygala myrtifolia*, *Olea europaea* (olive), *Rosmarinus officinalis* (rosemary), *Lavandula* spp. (lavender), *Prunus* spp. (plums, cherries, almonds etc.), *Nerium oleander* (oleander), *Coffea* spp. (coffee). Other important hosts are: *Acer* spp. (maple), *Cistus* spp., *Citrus* spp., *Fraxinus* spp. (ash), *Hebe* spp., *Platanus* spp. (plane), *Quercus* spp. (oak), *Ulmus* spp. (elm), *Vaccinium* spp. (blueberries), *Vitis* spp. (grapevine).

Biology

Xylella fastidiosa is a gram-negative, aerobic bacteria, with its optimal growth range between 26–28°C.

Xylella fastidiosa is naturally transmitted from one plant to another with the assistance of vector insects that feed on xylem. Confined within the xylem of plants, the bacteria spreads along the veins and multiplies inside the plant vessels. As the bacteria invades the xylem vessels, it can eventually cause blockages obstructing the flow of raw sap. Because the movement of water and nutrient is interrupted, the symptoms resemble those of water deficiency or nutrient deprivation.

Symptoms

For details of the symptoms, scan or click on the QR code to access the accompanying poster.



More information

- EPPG Global Database: <https://gd.eppo.int/taxon/XYLEFA>
- POnTe: <https://www.ponteproject.eu/category/symptom-xylella/>
- BeXyl project: <https://www.bexylproject.org/>
- European Commission: <https://food.ec.europa.eu/plants/plant-health-and-biosecurity/legislation/control-measures/xylella-fastidiosa>
- UK Plant Health: <https://planthealthportal.defra.gov.uk/pests-and-diseases/high-profile-pests-and-diseases/xylella/>

Acknowledgements

This factsheet was updated by Itxaso Quintana, BGCI, April 2024, from a previous version written by IPSN and Fera.