NURSERY PAPERS
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KEEPING XYLELLA FASTIDIOSA OUT OF AUSTRALIA

What every nursery can do now

Imagine losing your entire crop – and your market – to one unseen disease.

That's what growers overseas have faced with *Xylella fastidiosa*, one of the world's most damaging plant pathogens. Since its discovery in the Americas, it has devastated crops across Europe and Asia, wiping out millions of plants and disrupting trade worth billions.

Australia remains *Xylella-free* – and keeping it that way depends on the vigilance of production nurseries. Healthy, traceable plants are the first line of defence.

This paper explains what *Xylella fastidiosa* is, why it's such a serious risk, and how you can protect your business and the broader industry.

Greenlife INDUSTRY AUSTRALIA
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What is *Xylella fastidiosa*?

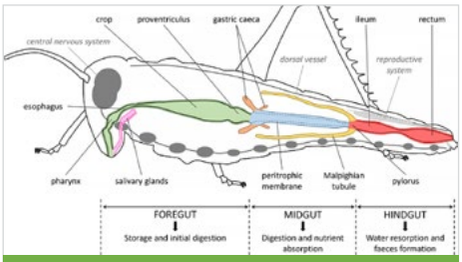
***Xylella fastidiosa* is a bacterium that lives in the xylem – the part of a plant that moves water and nutrients from roots to leaves. It multiplies inside those water channels, forming sticky clumps (biofilms) that block the flow. Plants begin to show signs of drought stress even when the soil is moist.**

There are several subspecies, each with preferred host plants:

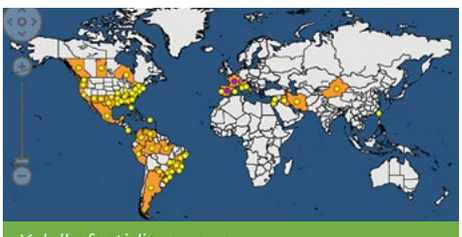
SUBSPECIES	KEY HOSTS
fastidiosa	Grapevine, almond, lucerne
multiplex	Peach, plum, elm, sycamore
pauca	Citrus, olive, coffee
sandyi	Oleander
taiwanensis	Pear
tashke (proposed)	Chitalpa

All cause similar 'leaf scorch' diseases that lead to decline and death in susceptible plants. None is present in Australia – but they have established in countries including Italy, France, Taiwan, Iran, Turkey and the USA.

Glassy-winged sharpshooter – vector of Xylella fastidiosa.

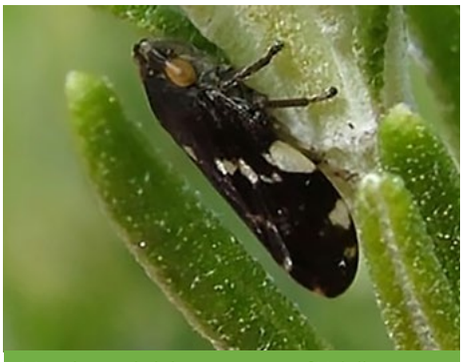


General structure of the insect gut divided into three main sections.



Xylella fastidiosa map.

Oak leaf displaying signs of Xylella fastidiosa infection.



Meadow spittlebug – vector of Xylella fasti diosa.

WHY IT MATTERS TO AUSTRALIAN NURSERIES

Healthy plants are the foundation of a healthy business.

If *Xylella fastidiosa* entered Australia, economic modelling by the Department of Agriculture, Fisheries and Forestry estimates the impact could range from $1.2 billion to $11.1 billion across horticulture.

That means tougher movement restrictions, destroyed stock and the loss of critical export markets. Nurseries supplying interstate and retail markets would be particularly affected through higher compliance costs and reduced consumer confidence.

HOW XYLELLA SPREADS

Xylella fastidiosa can't survive freely in soil or water – it relies on plants and sap-feeding insects to move from one host to another.

In plants

The bacterium spreads through the xylem, blocking water flow and sometimes producing toxins. It can move throughout the plant or remain localised.

In pecans, it can even pass from seed to seedling, meaning apparently healthy plants may be infected without showing symptoms.

In insects

Some insects act as vectors – meaning they carry and spread the bacteria from one plant to another while feeding.

For *Xylella fastidiosa*, the vectors are sap-feeding insects that drink from the xylem, the plant's water-carrying tissue. When they feed on an infected plant, the bacteria stick to their mouthparts and foregut (not their bloodstream). The next time they feed, they can pass the bacteria into a healthy plant.

- Adult insects can transmit Xylella for life.
- Nymphs lose the bacteria each time they moult.
- Different insect species vary in how efficiently they spread it.

The main overseas vectors are sharpshooters (family Cicadellidae) and spittlebugs (family Cercopidae). These insects are common in parts of the Americas and Europe, where they play a major role in spreading the disease between crops and native vegetation.

Australia currently has no known vector species of concern – and keeping it that way is a national biosecurity priority.

RECOGNISING SYMPTOMS

Symptoms depend on the host plant, the environment and the *Xylella* strain, but they often resemble drought, nutrient stress or herbicide injury. Key indicators include:

- yellowing along leaf veins (veinal chlorosis)
- brown, dry edges or leaf scorch (often starting at tips and margins)
- stunted growth and dieback of shoots or branches
- wilting or early leaf drop
- small, hard or misshapen fruit.

Examples of crop-specific symptoms:

- **oleander:** yellow mottling at leaf tips that spreads inward, leading to dieback and death
- **grapevine (Pierce's disease):** scorched leaves with red or yellow margins; uneven shoot maturity; shrivelled fruit
- **peach (Phony peach disease):** stunted shoots, dark green foliage, premature flowering and undersized fruit
- **citrus (Variegated chlorosis):** yellow patches between veins, small but very sweet fruit
- **shade trees:** leaf scorch appearing late summer to autumn, progressing from older to younger leaves; early leaf fall and branch dieback

WHERE IT COULD THRIVE

Xylella fastidiosa has one of the widest host ranges of any known plant pathogen – more than 350 species across 75 plant families, including:

- **horticultural crops:** grapevine, citrus, almond, peach, plum, olive, coffee, blueberry, avocado
- **ornamentals and forest trees:** oleander, elm, sycamore, maple, oak, liquidambar
- **native and wild plants:** grasses, sedges, acacias, *Syzygium* spp.

Because many hosts show no symptoms, infected plants can move undetected through trade pathways – making strict biosecurity practices essential.

AUSTRALIA'S RISK PROFILE

Our climate and plant diversity mean conditions here could suit *Xylella* if introduced. Risk factors include:

- importing infected plant material or seeds
- potential establishment of exotic insect vectors such as the glassy-winged sharpshooter (GWSS)
- abundance of suitable native and ornamental host plants
- climate conditions favourable to disease spread in southern and coastal regions.

WHAT YOU CAN DO NOW

You can't treat *Xylella fastidiosa* once a plant is infected, so prevention is everything. Production nurseries can take simple, proven steps to minimise risk.

1. **Know your sources**
   Buy only from trusted suppliers with clear records of origin and health certification.
2. **Quarantine new arrivals**
   Isolate and inspect new stock for 7–14 days before introducing it to production areas.
   Use GIA's *Incoming Stock Quarantine Checklist* or the Audit Management System (AMS) to record inspections.
3. **Keep tools and vehicles clean**
   Disinfect pruning tools, trolleys and machinery between batches. Train staff in hygiene protocols.
4. **Monitor and record**
   Schedule structured crop monitoring. Look for scorch, dieback or unusual patterns and log findings in AMS or other traceable systems.
5. **Control vectors**
   Maintain good weed control, manage boundary vegetation and support beneficial insect populations to reduce vector habitat.
6. **Report anything unusual**
7. **If you suspect *Xylella* or another exotic pest, act immediately.**
   Call the **Exotic Plant Pest Hotline – 1800 084 881**.

WHY VIGILANCE PAYS OFF

- **Protects your business:** early detection prevents mass losses and protects your plant movement privileges.
- **Protects your customers:** clean stock keeps retailers and landscapers confident.
- **Protects your industry:** prevention avoids trade restrictions that hurt everyone.

Every inspection, quarantine record and hygiene step helps maintain Australia's *Xylella-free* status – and demonstrates the professionalism of our greenlife sector.

WHERE TO GET HELP

- **Audit Management System (AMS):** cloud-based record keeping for pest monitoring, inputs and inspections.
- **Pest ID Tool:** online diagnostic resource for identifying pest and disease symptoms.
- **Extension Officers:** levy-funded support available to help with risk mapping, training and audit preparation.
- **BioSecure HACCP:** a step-by-step plant protection program supporting on-farm biosecurity.

Visit *greenlifeindustry.org.au/services* or contact your local, levy-funded GIA Extension Officer for guidance.

IF WE KEEP OUR GUARD UP, WE KEEP XYLELLA OUT.

Strong nursery biosecurity today means a stronger, more resilient industry tomorrow.

STAY UP TO DATE!

TIP: Find the latest EFSA database at ***efsa.europa.eu*** and DAFF import updates at ***agriculture.gov.au/biosecurity-trade***.

Impact of Xylella fastidiosa on citrus fruit – side-by-side comparison.

Xylella's expanding host range

The list of plants known to host *Xylella fastidiosa* keeps growing – and so should your biosecurity awareness.

What's new

- The European Food Safety Authority (EFSA) 2025 host-plant database lists over 350 species across 75 families – including grapevine, citrus and ornamentals such as *Polygala myrtifolia* and *Lavandula*.
- Australia's Department of Agriculture, Fisheries and Forestry (DAFF) is moving from family-level to genus-level import controls for high-risk nursery stock to reflect this expanding range.

What it means for growers

- Review supplier lists regularly – plants once considered low-risk may now be monitored or restricted.
- Check EFSA and DAFF updates each year to stay compliant.
- Keep clear quarantine and recordkeeping systems so you can act fast if rules change.

Staying informed – and acting early – is the best way to **KEEP AUSTRALIA XYLELLA-FREE.**

REFERENCES

- **Past nursery papers – *www.greenlifeindustry.com.au/communications-centre***

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