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## Defending Australia against the Number 1 crop killer

What has been dubbed the number one plant biosecurity threat to Australia is now under the spotlight through a new Hort Innovation funded project aimed at building Australia's capability to quickly and effectively detect and keep the threat at bay.

*Xylella fastidiosa*, a bacterium transmitted by common sap-sucking insects such as spittlebugs and sharpshooters, is one of the most harmful plant pathogens worldwide.

The impact of *Xylella* overseas has been catastrophic, infecting more than 200 million citrus trees in Brazil, destroying 1 million olive trees in Italy and devastating the Californian grape sector – causing annual losses in excess of US\$100 million.

The pathogen, not yet present in Australia or New Zealand, can cause significant disease to several agriculturally important crops including grapevines, olives, nuts, citrus, stone fruit, blueberries and cherries, as well as numerous ornamental hosts.

In fact, over 500 cultivated and uncultivated herbaceous and woody plant species are known hosts of *Xylella*.

A new collaborative research project managed by Hort Innovation under the Hort Frontiers strategic co-investment program will be led by Dr. Rachel Mann from the Victorian Department of Jobs, Precincts and Regions (JPR) and is additionally supported by Western Australian, NSW and Queensland state based primary industries and the Ministry for Primary Industries in New Zealand.

This collaborative effort ensures that major diagnostic labs in Australia and New Zealand that currently provide diagnostic capability to state and national biosecurity agencies and industry are prepared.

Hort Innovation Research and Development Manager Dr Penny Measham said the project, which supports the delivery of the Department of Agriculture's National Action Plan for *Xylella*, was looking at new methods for detection and surveillance through the development of innovative diagnostic tools.

"Currently, detection is difficult as the pathogen has a long latent period and not all plant hosts exhibit symptoms," she said.

"Furthermore, the different strains of *X. fastidiosa*, classified into subspecies, can behave like different diseases in different hosts."

Dr Measham said the value of subspecies identification was paramount during incursion mode.

"Along with international collaboration, the project aims to establish an Australian based *X. fastidiosa* genome database to assist with design and validation of *X. fastidiosa* subspecies specific diagnostic tools that are both rapid and accurate," she said.

"The fast turn-around of this information could be the difference between eradication and moving to management of this devastating pest."



Project lead, Dr Rachel Mann said the current National Diagnostic Protocol (NDP) for Australia is for the detection and identification of *Xylella* and is focussed specifically on Pierce's disease.

"This project will review and adopt world's best practice diagnostic methods for the detection and identification of *Xylella* and its' subspecies, and ensure diagnosticians are trained and proficient in using the revised National Diagnostic Protocol," she said.

"In the event of a suspect sample being identified, our state diagnostic laboratories will be the first to deal with these samples, so it is essential that our capacity to handle these samples be developed and tested now and not during a potential incursion."

Dr Mann said adoption of the *Xylella* NDP would be immediate. She said the NDP will be used to screen plant material entering Australia, support active surveillance programs and as the key diagnostics reference standard for diagnostic labs it will be used during an incursion or during the detection of the exotic vector, the Glassy-Winged sharpshooter.

**ENDS**

**Contact:** Hort Innovation media and Public Affairs Manager, Farah Abdurahman on 0447 304 255 or email: [Farah.Abdurahman@horticulture.com.au](mailto:Farah.Abdurahman@horticulture.com.au)

