

New diagnostic tool developed for global menace *Xylella fastidiosa* increases specificity

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The bacterium *Xylella fastidiosa* is notable for having a wide host range,

with the ability to infect more than 300 plants. *X. fastidiosa* has a long history of causing serious harm to crops and trees in the Americas, with especially damaging repercussions on grapevine and citrus.

In 2013, *X. fastidiosa* was discovered for the first time outside of the Americas, attacking [olive trees](#) in southern Italy causing olive quick decline syndrome. Since then, it has been increasingly found in various environments throughout France and Spain on a variety of plant species and the demand for fast and reliable diagnostic tools is crucial to effective disease management strategies.

In a research article in *Plant Disease*, Bonants et al. record their efforts to improve the reliability of existing *X. fastidiosa* diagnostic tools. The team combined two existing tools with an internal control to develop a triplex TaqMan assay, which they then used to analyze DNA extracts in naturally infected [plant material](#), artificially infected plant material, and uninfected plant material.

The triplex TaqMan assay has increased specificity as it targets two loci rather than just on locus on an *X. fastidiosa* genome. This is the first time a diagnostic [tool](#) of this type has been successfully developed for this pathogen.

Additionally, the researchers developed procedures for analyzing DNA extracts from both infected and healthy [plants](#) using next-generation sequencing (NGS) technology, marking the first time extracts from *X. fastidiosa*-infected plants were analyzed in this way. In all samples, DNA reads were detected specific for *X. fastidiosa* and in most cases the pathogen could be identified to the subspecies level. This new procedure leads the way for future track-and-trace studies.

More information: Peter Bonants et al, Development and Evaluation of a Triplex TaqMan Assay and Next-Generation Sequence Analysis for

Improved Detection of Xylella in Plant Material, *Plant Disease* (2018).
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