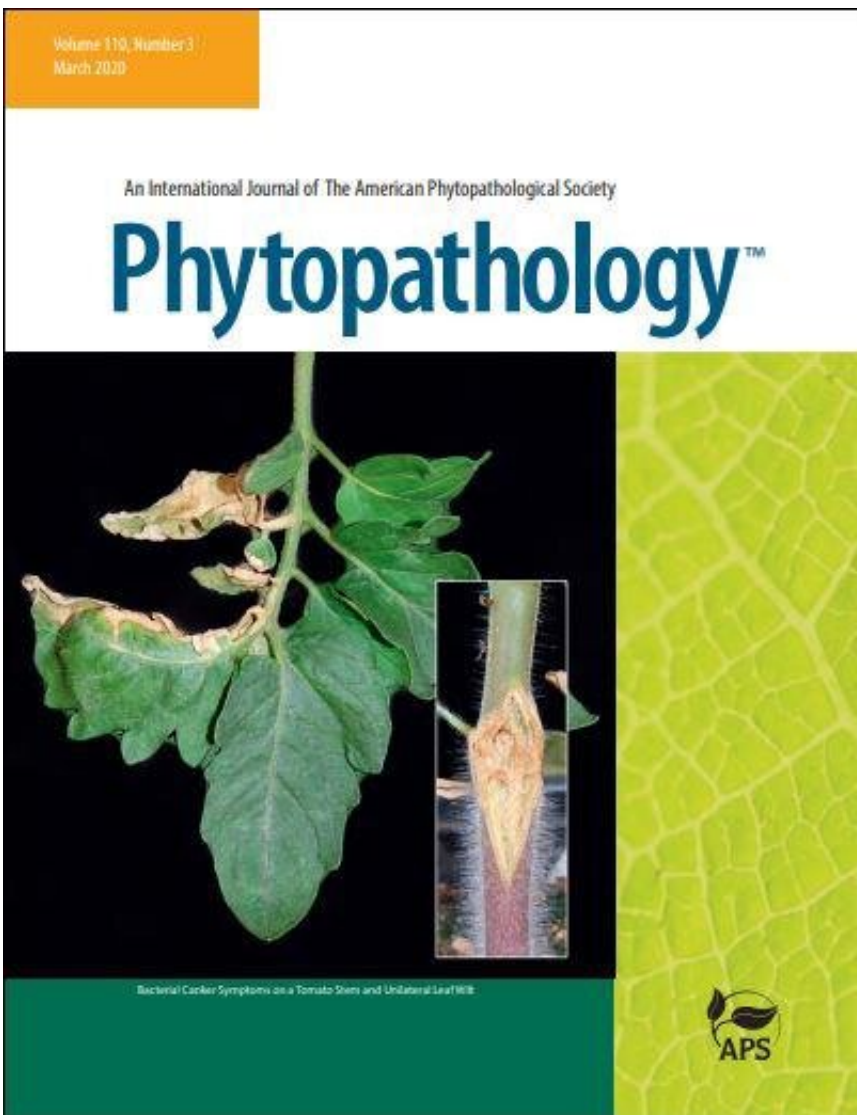


New dataset helps tomato growers reduce spread of bacterial canker

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Stem canker and unilateral leaf wilt caused by *Clavibacter michiganensis* on tomato. Credit: Shree Thapa

Bacterial canker of tomato is a disease that can lead to significant losses in greenhouse and field production systems. This disease is caused by the bacterial pathogen *Clavibacter michiganensis*. The best way to control bacterial canker is by securing clean tomato seed and enforcing good sanitation practices.

A group of plant pathologists, primarily based at the University of California, Davis, became interested in studying *Clavibacter* when extension agents brought in diseased samples. In particular, they wanted to develop a diagnostic platform that could specifically detect the tomato pathogen, as some strains of *Clavibacter* do not cause disease.

Taking advantage of the huge advances in DNA sequencing over the last 10 years, these plant pathologists were able to identify genetic regions that can specifically detect the pathogen causing bacterial canker of tomato without giving [false positives](#) with nonpathogenic bacteria. They analyzed the genomes of 37 different *Clavibacter* strains in order to identify [genetic regions](#) only present in *Clavibacter michiganensis*. Using this information, they were able to develop a diagnostic platform.

"This diagnostic platform was based on amplification of three targets: two specific for *Clavibacter michiganensis* and one positive control," explained plant pathologist Gitta Coaker. "This [platform](#) is available for use without restriction and should facilitate the distribution of clean tomato seed to growers."

In an article in *Phytopathology*, Coaker and her team published large genomic datasets enabling other organizations to develop *Clavibacter michiganensis*-specific detection assay. The adoption of this assay in the field will help tomato growers reduce the spread of bacterial canker of tomato through easier screening of infected plant and seed materials.

More information: Shree P. Thapa et al, Comparative Genomics to

Develop a Specific Multiplex PCR Assay for Detection of *Clavibacter michiganensis*, *Phytopathology* (2019). [DOI: 10.1094/PHYTO-10-19-0405-R](#)

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