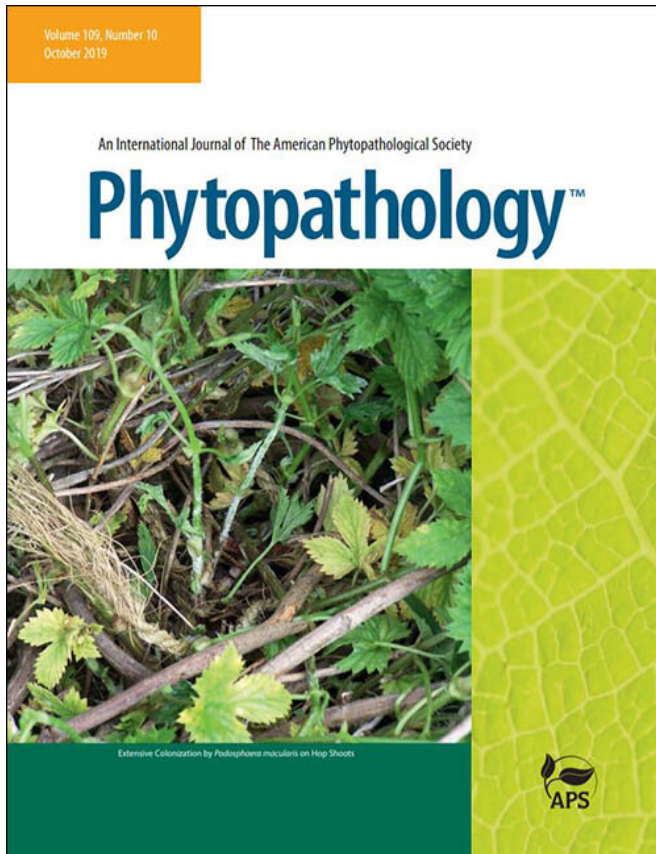


# Scientists advance citrus greening research efforts

12 November 2019



Volume 109, Number 10. Credit: The American Phytopathological Society

Citrus greening, a devastating disease, has reduced Florida citrus production by 70%, according to most accounts. Efforts to develop disease control methods have been stymied because scientists have been unable to culture and experimentally manipulate the causal bacterial pathogen, *Candidatus Liberibacter asiaticus*.

The [scientific community](#) studying citrus greening has often turned to genetically distant bacteria to use as a proxy, largely because of familiarity with proven techniques that utilize these bacteria.

However, there is one cultured species of the *Liberibacter* genus, *Liberibacter crescens*, that has been useful as a proxy for *Ca. L. asiaticus* and serves as a much more realistic surrogate host due to a high degree of genomic and physiological similarities.

To facilitate the scientific community's ability to use *L. crescens* in [citrus greening](#) research, University of Florida Department of Plant Pathology scientists have published an article in [Phytopathology](#) that outlines, step-by-step, highly reproducible and detailed protocols that they have standardized for culturing *L. crescens*.

"This article presents detailed specialized recipes for handling *L. crescens* for bacteriologists who generally know their way around a lab but need to learn how to deal with the unusual, perhaps analogous to the instructional range found in 'The Joy of Cooking,'" explains Dean Gabriel, one of the scientists behind this research, who goes on to suggest that the work could also impact research efforts to culture any uncultured pathogen.

The research also reveals that *L. crescens* can be naturally transformed and, by extension, that the pathogenic *Ca. L. asiaticus* may be amenable to natural transformation. The authors also describe methods for functional characterization of genes that appear to be playing a role in culturing of *L. crescens* as well as some that contribute to the pathogenicity of *Ca. L. asiaticus*.

**More information:** M. Jain et al, *Liberibacter crescens* Is a Cultured Surrogate for Functional Genomics of Uncultured Pathogenic 'Candidatus *Liberibacter*' spp. and Is Naturally Competent for Transformation, *Phytopathology* (2019). [DOI: 10.1094/PHYTO-04-19-0129-R](https://doi.org/10.1094/PHYTO-04-19-0129-R)

Provided by American Phytopathological Society

APA citation: Scientists advance citrus greening research efforts (2019, November 12) retrieved 17 October 2021 from <https://phys.org/news/2019-11-scientists-advance-citrus-greening-efforts.html>

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