

Injecting citrus tree trunks with bactericide may help stem greening

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A chemical treatment known as a bactericide could help preserve citrus trees from the potentially deadly and costly greening disease, a new University of Florida Institute of Food and Agricultural Sciences study shows.

Citrus is estimated as a \$10.9 billion-a-year industry in Florida and the finding could be key to helping the state's [citrus growers](#) and its economy. Citrus greening has cost Florida \$3.6 billion in economic damage since it was first discovered in 2005, according to previous UF/IFAS studies. It is projected that more than 80 percent of citrus trees have been infected by greening.

Nian Wang, a UF/IFAS associate professor of microbiology and cell science, led the latest study, which found that when a bactericide – in this case, oxytetracycline—is injected into the trunk of greening-infected [citrus trees](#), it helps keep the trees alive by thwarting greening, also known as Huanglongbing, or HLB.

"This application is more targeted," said Wang said, a faculty member at the UF/IFAS Citrus Research and Education Center in Lake Alfred, Florida. "It increases efficiency of bactericide applications by ensuring that factors such as light and rainfall don't degrade the treatments before they can go to work targeting the HLB-causing bacteria."

Another advantage: Results from the study show that trunk injections were successful in delivering bactericides not only to leaves but to the

diseased root system of infected trees, resulting in reduced bacteria levels in both leaves and roots for up to nine months.

"Using trunk injection technology, you can probably treat the HLB-diseased trees one time per year and have good control," Wang said.

The process costs about \$2 to \$4 per tree for labor and material, UF/IFAS researchers said. At \$4 per tree, figuring an average of 140 trees per acre for oranges, that's \$560 per acre, as estimated by UF/IFAS economists.

Wang's study is published in the *Phytopathology Journal*.

More information: Jiahuai Hu et al. Evaluation of the Spatiotemporal Dynamics of Oxytetracycline and Its Control Effect against Citrus Huanglongbing via Trunk Injection, *Phytopathology* (2016). [DOI: 10.1094/PHTO-02-16-0114-R](https://doi.org/10.1094/PHTO-02-16-0114-R)

Provided by University of Florida

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