

*(Example Abstract)*

***In planta* antibacterial activity of oxytetracycline against *Candidatus Liberibacter asiaticus* causing citrus HLB disease**

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Oxytetracycline (OTC) is currently being used to control citrus Huanglongbing (HLB) in Florida by foliar spray. However, the antimicrobial activity of OTC against the HLB pathogen *Candidatus Liberibacter asiaticus* (Las) remains poorly understood due to the difficulty to culture this bacterium. We investigated the antibacterial activity of OTC against Las in greenhouse and field experiments. Citrus trees infected by Las were treated with OTC via trunk injection. Las titers and OTC residues in leaf samples were determined using qPCR and HPLC assays respectively, following OTC treatment. Greenhouse experiments showed that OTC injection at 0.05g/tree resulted in a decline of Las populations to undetectable level (Ct value  $\geq 36.0$ ) from 7 to 30 days post treatment (DPT), with observed levels of OTC residues at 0.7-0.8 ppm. Field experiments revealed that at an injection rate of 2.0 g/tree, OTC resulted in the decline of Las titers to the undetectable level from 7 to 28 DPT, with observed levels of OTC residues at 0.9-1.2 ppm. In both greenhouse and field trials, nonlinear regression analyses indicated that the levels of suppression of Las population were positively associated with OTC residue levels in leaves. These results suggested that the threshold for OTC to eliminate Las from HLB diseased trees could be  $\geq 0.9$  ppm in leaf tissues under field conditions. These findings may be useful for citrus growers in developing an effective HLB management program with OTC.