4.12 Detection of *Candidatus* Liberibacter solanacearum in Potato Psyllid Isolated from Sticky Traps

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The Citrus Research Board established an Operations Department in response to the 2008 discovery of the Asian Citrus Psyllid (ACP) in California and the threat of huanglongbing (HLB) disease associated with this vector. The Operations Department is composed of Field, Data Management, and Laboratory Divisions dedicated to ACP trapping throughout the state’s commercial citrus, diagnostic testing of plant and insect samples using Quantitative Polymerase Chain Reaction (Q-PCR) to detect Liberibacter asiaticus (Las) DNA (the causative agent of HLB in Florida), and establishing a website for the dissemination of HLB-related information. In Florida, it has been determined that Las target DNA is undetectable in DNA extracted from ACP after 10 days on a sticky trap. Since CRB traps are serviced bimonthly, it is possible that positive ACP could go undetected if Las DNA is unstable in California’s climatic conditions and we depend on testing trapped animals for detection. Because we cannot work with the live causative agents of HLB in California, we have used the potato psyllid *Bactericerca cockerelli* infected with Liberibacter solanacearum (Lsol) as a surrogate system. ACP populations in Florida acquire Las at levels of 30-40%, unlike potato psyllids in California that acquire Lsol to very high levels, with essentially 100% of the population becoming infected. Based on Q-PCR, the level of infection in the individual psyllid is also dramatically higher. In two experiments conducted this spring and summer in Riverside, Lsol DNA was detected in up to 85% of dead psyllids retrieved after 50 days on traps.

References


