4.10 A Perspective on the Activities of Texas HLB Diagnostic Laboratory

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The Citrus Center diagnostic laboratory received USDA-APHIS certified status to perform APHIS PPQ validated diagnostic tests since August 2008. It has the capacity to test approximately 500 samples a day and extract DNA from 900 psyllids or 400 plants per week. Thus far, about 25,000 psyllid samples and 8,000 plant samples have been tested. These were collected by USDA-APHIS, Texas Department of Agriculture, and the Citrus Center's citrus commodity survey personnel. Samples that produce a Ct value less than 37 in qPCR were sent to the PPQ molecular diagnostic laboratory (MDL) in Beltsville, MD, for confirmation. Two citrus samples, from Hidalgo and Harris counties, respectively, showed high borderline Ct values; however, none produced an amplicon in conventional PCR tests. The results were further confirmed by MDL and the samples were designated as ‘inconclusive’ since positive conventional PCR and nucleotide sequencing information are necessary to confirm the presence of HLB. Moreover, re-samples from these plants showed negative results in qPCR tests. Forty-four orange jasmine samples yielded Ct values between 33 and 37; some of which were confirmed by MDL and were also designated as ‘inconclusive.’ We have performed qPCR, conventional PCR, nested PCR, and PCR coupled with restriction digestion on 440 orange jasmine leaf samples collected from 55 plants and psyllids in the vicinity of these plants. Twenty-four samples produced borderline Ct values, but none of them resulted in a conventional PCR band.