8.19 Lack of Transmission of HLB by Citrus Seed

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In Florida nurseries, rootstock seed trees are located outdoors and only protected from psyllid transmission of *Candidatus* Liberibacter asiaticus (Las) by insecticide applications. In 2008, a survey detected two Carrizo citrange trees as HLB+. Given the potential risk for seed transmission and introduction of Las into nurseries by seed from source trees, assays of seedlings derived from seed extracted from symptomatic fruit were begun in 2006. From 2006 to 2008, seed were collected from mature Pineapple sweet orange trees in Collier County and in 2009, from Murcott tangor trees in Hendry County, FL. For Pineapple orange, 415, 723, and 439 seedlings and for Murcott, 332 seedlings were tested at least twice by qPCR using 16S primers. In 2007, a single Pineapple seedling was suspect HLB+ but upon repeated testing was negative. From nurseries in 2008, 290 seedlings were recovered from fruit located on symptomatic branches of two Carrizo trees, and in 2009, 125 seedlings were recovered from two trees of Swingle citrumelo, 649 from four trees of Kuharske Carrizo, 100 from one tree of Cleopatra mandarin, and 100 from one tree of Shekwasha mandarin. In 2008, one suspect HLB+ Carrizo seedling was detected, but HLB+ status was not confirmed after repeated testing. In 2009, a single questionable PCR detection for Cleopatra mandarin was obtained. Subsequent detection occurred in only 75 and 33% of repeated 16S runs from two DNA extractions and the assay was negative using β-operon primers. Despite the occasional HLB+ test results, no plants have ever developed HLB symptoms, and repeated testing has never confirmed anything other than the transient presence of Las in seedlings grown from seed obtained from Las-infected trees.