12.2 Monitoring Psyllids for Early Detection and Management of Huanglongbing

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Since the detection of huanglongbing (HLB) disease in Florida in 2005, we started monitoring the movement of the HLB-associated bacterium, Candidatus Liberibacter asiaticus in psyllids (Diaphorina citri). Several studies show that infected trees can remain symptomless for a long time, and it is difficult to detect the presence of bacteria in symptomless trees. Analysis of a large number of psyllid samples collected from groves, retail nurseries, garden centers and other sources showed that psyllids can be used to detect HLB-associated Liberibacters in locations where plants are not showing symptoms. Infected psyllids were detected in many groves several months to over a year before symptomatic plants were found. Importantly, infected psyllids were found in about 15% of over 1000 samples collected from retail nurseries and garden centers in most counties sampled. However, these studies also showed a possible seasonality of the occurrence of bacteria in psyllids with the maximum incidence in fall, followed by spring, summer and least incidence in winter. These results show the value of monitoring psyllids in prevention and management of HLB and the need to develop better detection methods for monitoring of large numbers of psyllids.