10.6

Screening of citrus and its close relatives for tolerance to huanglongbing

Ramadugu, C.[1], Keremane, M.[2], Stover, E.[3], Halbert, S.[4], Duan, Y.P.[3], and Lee, R.F.[2]

[1]Dept. of Botany and Plant Sciences, Univ. of California Riverside, Riverside, CA, USA 92511
[2]USDA-ARS, National Clonal Germplasm Repository for Citrus and Dates, Riverside, CA, USA 92507
[3]US Horticultural Research Lab, Ft. Pierce, FL. USA 34945
[4]Florida Dept. of Agricultural and Consumer Services, Division of Plant Industry, Gainesville, FL, USA 32614

Huanglongbing (HLB), a devastating disease of citrus, has become a serious problem for the citrus industries in Brazil and Florida, and both the disease and its psyllid vector, *Diaphorina citri* continue to spread to other citrus growing regions. Host resistance or tolerance to the pathogen would be extremely valuable to the citrus industry. A field trial was established in Fort Pierce, Florida where HLB has become endemic to assess the HLB tolerance level of different cultivars of citrus and citrus relatives. Over 800 seedlings representing over 100 accessions (8 replications of each) belonging to 18 genera of the subfamily Aurantioideae and family Rutaceae were evaluated over a period of four years. Leaf samples were collected at 6 month intervals during the spring and fall seasons and tested for the presence of HLB associated bacterium, *Candidatus* Liberibacter asiaticus (LAS) by real time PCR. While most accessions were found to be susceptible to HLB, the bacterium (LAS) was not detectable in about 20 accessions for up to four years of analysis. These include many trifoliates and trifoliate hybrids, some species of *Bergera, Casimiroa, Clausena, Eremocitrus, Glycosmis, Microcitrus, Murraya, Naringi,* and *Zanthoxylum.* Information on varietal tolerance of citrus and its relatives to HLB is very important for management of the disease. While most accessions in Citrus were susceptible, partial resistance was observed in some clonal populations of *Citrus latipes*. The probable basis of resistance is being investigated.