Title:
Preliminary Evaluation of the Single-Tree, Huanglongbing Find in California

Journal Issue:
Journal of Citrus Pathology, 1(1)

Author:
Wang, J., University of California, Riverside
Roose, M., University of California, Riverside, CA
Ramadugu, C., University of California, Riverside, CA
Lee, R., United States Department of Agriculture National Clonal Germplasm Repository for Citrus and Dates, Riverside, CA
Manjunath, K., United States Department of Agriculture National Clonal Germplasm Repository for Citrus and Dates, Riverside, CA
Lin, H., United States Department of Agriculture, Agricultural Research Service, Parlier, CA
Chen, J., United States Department of Agriculture, Agricultural Research Service, Parlier, CA
Shatters, R., United States Department of Agriculture, Agricultural Research Service, Fort Pierce, FL
Polek, M., Citrus Research Board, Visalia, CA
LeVesque, C., Citrus Research Board, Visalia, CA
Vidalakis, G., Citrus Research Board, Visalia, CA

Publication Date:
2014

Permalink:
https://escholarship.org/uc/item/6vb230x8

Local Identifier:
io cv journalcitruspathology_24179

Abstract:
Huanglongbing (HLB, citrus greening) associated with ‘Candidatus Liberibacter’ species is a widespread devastating citrus disease not previously reported in California (CA). In March 2012, ‘C. Liberibacter asiaticus’ (CLas) was detected from an Asian citrus psyllid (ACP, Diaphorina citri) sample from Los Angeles, CA at the Jerry Dimitman Laboratory of the Citrus Research Board. Subsequent citrus plant surveys within a 400m area of the CLas-positive ACP sample performed by the California Department of Food and Agriculture identified an infected multi-grafted citrus tree at a residence in Los Angeles, CA. The CLas-positive tree was removed and nucleic acids from different plant tissues (i.e. roots, trunk, stems, and leaves) were extracted and distributed to several federal, state, and university laboratories nationwide for preliminary evaluation. Labs attempted to identify the species and graft types of the infected citrus, study the genetic characteristics and genome diversity of the detected bacterium, as well as test for other graft-transmissible citrus pathogens (GTCP). Preliminary data suggested that one type of
lemon was the original rootstock that received over 20 citrus grafts. CLas DNA population analysis suggested a possible single Asian origin. Preliminary tests indicated the possible presence of other GTCP. Further evaluations on the CA CLas-positive find are ongoing.

Copyright Information:

Copyright 2014 by the article author(s). This work is made available under the terms of the Creative Commons Attribution 4.0 license, http://creativecommons.org/licenses/by/4.0/
1.1

**Preliminary Evaluation of the Single-Tree, Huanglongbing Find in California**

Wang, J.\(^1\), Roose, M.\(^1\), Ramadugu, C.\(^1\), Lee, R.\(^2\), Manjunath, K.\(^2\), Lin, H.\(^3\), Chen, J.\(^3\), Shatters, R.\(^4\), Polek, M.\(^5\), LeVesque, C.\(^5\), and Vidalakis, G.\(^1\)

\(^1\)University of California, Riverside, CA
\(^2\)United States Department of Agriculture National Clonal Germplasm Repository for Citrus and Dates, Riverside, CA
\(^3\)United States Department of Agriculture, Agricultural Research Service, Parlier, CA
\(^4\)United States Department of Agriculture, Agricultural Research Service, Fort Pierce, FL
\(^5\)Citrus Research Board, Visalia, CA

Huanglongbing (HLB, citrus greening) associated with ‘*Candidatus Liberibacter*’ species is a widespread devastating citrus disease not previously reported in California (CA). In March 2012, ‘*C. Liberibacter asiaticus*’ (CLas) was detected from an Asian citrus psyllid (ACP, *Diaphorina citri*) sample from Los Angeles, CA at the Jerry Dimitman Laboratory of the Citrus Research Board. Subsequent citrus plant surveys within a 400m area of the CLas-positive ACP sample performed by the California Department of Food and Agriculture identified an infected multi-grafted citrus tree at a residence in Los Angeles, CA. The CLas-positive tree was removed and nucleic acids from different plant tissues (i.e. roots, trunk, stems, and leaves) were extracted and distributed to several federal, state, and university laboratories nationwide for preliminary evaluation. Labs attempted to identify the species and graft types of the infected citrus, study the genetic characteristics and genome diversity of the detected bacterium, as well as test for other graft-transmissible citrus pathogens (GTCP). Preliminary data suggested that one type of lemon was the original rootstock that received over 20 citrus grafts. CLas DNA population analysis suggested a possible single Asian origin. Preliminary tests indicated the possible presence of other GTCP. Further evaluations on the CA CLas-positive find are ongoing.