Title
Colonization of Seeds of Citrus Rootstock Varieties by ‘Candidatus Liberibacter asiaticus’

Journal
Journal of Citrus Pathology, 1(1)

Author
Hilf, Mark E.

Publication Date
2014

DOI
10.5070/C411025190

8.18 P

Colonization of Seeds of Citrus Rootstock Varieties by '*Candidatus* Liberibacter asiaticus'

Hilf, M.E.

USDA-ARS, Fort Pierce, FL USA

Huanglongbing (HLB) is a disease of citrus associated with a systemic infection by the α-proteobacterium '*Candidatus* Liberibacter asiaticus'. Infection of an individual tree can occur via psyllids (*Diaphorina citri* Kuwayama) carrying the bacterium or if the tree is propagated from infected budwood. Seed transmission is another possible mode of dissemination of the pathogen. Rootstock varieties are propagated from seed so we assessed the seed transmission among eighteen rootstock varieties using seeds from mature fruit collected in late winter and immature fruit collected in late summer. In dissected seeds real-time PCR detected pathogen DNA in seed coats at an incidence of 0-100%, whereas no pathogen DNA was detected in cotyledons or embryos from any variety. Seeds collected in late winter were germinated in a greenhouse and no pathogen DNA was detected in extracts of shoots of 425 seedlings harvested at 7-10 days post-germination whereas a small amount of pathogen DNA was detected in extracts from 6 of 425 roots. All six positive samples were the same rootstock variety, which had 100% colonization of seed coats. The positive samples likely are a result of remnant seed coat, which was not completely removed from cotyledons of the harvested seedlings. The data from this study suggest the pathogen can colonize the seed coat but it does not colonize embryos, which makes seed transmission unlikely.