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Acquisition and Transmission Efficiency of the HLB Bacterium, '*Candidatus Liberibacter asiaticus*' by the Striped Mealybug, *Ferrisia virgata*

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'*Candidatus Liberibacter asiaticus*' (Las) is the prevalent species of three different *Liberibacter* associated with citrus huanglongbing (HLB). Two psyllid species, *Diaphorina citri* and *Trioza erytreae*, are currently known to transmit *Liberibacter* bacteria. In this study, we tested the acquisition and transmission efficiency of Las by striped mealybugs (*Ferrisia virgata*) (Pseudococcidae; Hemiptera), another phloem-sap feeding insect with a broad host range of 264 species in 68 plant families. In our previous report, 63.0 % of striped mealybugs collected from the Las-infected periwinkle plants in USHRL greenhouse tested positive for Las using the HLBasp primers and probe, and the Las populations were estimated at 3.11×10^3 to 2.32×10^5 cells per mealybug. This was confirmed using conventional PCR with six primer sets targeting different Las loci and by the 100% identity of all seven PCR amplicons to the known Las sequences. However, attempts to transmit the disease in periwinkle and citrus using Las-infected mealybugs were not successful. To reveal the reason why Las-infected mealybugs were not able to transmit the disease, we used a leaf-disc bioassay in conjunction with typing of Las populations. Positive Las results were found in 100% of the mealybugs after feeding for 1-2 weeks on infected leaf discs that were obtained from infected periwinkle and citrus leaves. In addition, Las bacteria were detected in mealybug gut, salivary glands and body cavity, with the titer in the gut and body being higher than that in the salivary glands. It is of interest to note that mealybugs grown on infected leaf-discs for 1 week and then transferred to non-infected leaf-discs did not test positive for Las. However, mealybugs grown on infected leaf-discs for 2 weeks and then transferred to non-infected leaf-discs for 2 more weeks remained positive for Las. These results indicate that striped mealybugs share similarities and differences in comparison with the Asian citrus psyllids in terms of acquisition and/or transmission of the Las bacterium.