3.10 Preliminary Study of Comparative Acquisition of Candidatus Liberibacter asiaticus and Ca. L. americanus by Diaphorina citri Under Different Temperatures

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In Brazil, huanglongbing (HLB) is associated with two species of bacteria, Candidatus Liberibacter asiaticus (Las) and Ca. L. americanus (Lam). Both species are vectored by the psyllid Diaphorina citri Kuwayama. Studies in Brazil have shown an increase of Las-infected plants when compared to Lam-infected plants. The reason behind that is unknown, but temperature could be influencing the transmission of Lam and Las by psyllids. The objective of this study was to verify the influence of temperature in the transmission of Lam and Las by psyllids. The transmission of Lam and Las by psyllids was analyzed under three conditions of day/night temperatures (20/22°C, 25/27°C, and 30/32°C) in a 12-hour photoperiod. For each temperature condition, groups of adult psyllids were caged on branches of Lam- or Las-infected citrus plants for an acquisition access period of 4 days. Therefore, for each combination of temperature and bacterium species, 10 psyllids were collected from infected branches and caged on citrus healthy plants (Citrus limonia Osbeck) for 21 days. After that, insects were collected and individually analyzed by PCR to assess the acquisition of Lam and Las. In this study, the acquisition efficiency of Lam by psyllids under 20/22°C was 10%, while acquisitions under 25/27°C and 30/32°C were not verified. The acquisition efficiency of Las under 20/22°C and 25/27°C was 25%, while under 30/32°C was 12.5%. These results are preliminary and further studies are necessary for a better understanding about the influence of temperature on the transmission of Ca. Liberibacter spp.