11.5 Responses of Transgenic Hamlin Sweet Orange Plants Expressing the attacin A Gene to Candidatus Liberibacter asiaticus Infection

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Genes that code for antimicrobial peptides have been used in an attempt to produce transgenic plants against bacterial pathogens. Herein, we show the responses of Hamlin sweet orange cultivar transformed with attacin A gene (attA), in 12 independent transformation events, against Candidatus Liberibacter asiaticus infection. Four plants of each event were inoculated, by stem grafting, with HLB-positive budsticks, and evaluated for symptom expression and bacterial titers (Log₁₀ Liberibacter copies per gram of leaf tissue), using SYBR green qPCR, 8 months after inoculation. Four non-transformed inoculated plants were used as positive controls. HLB leaf symptom severities and average bacterial titers of most plants did not differ from that found on the control. However, plants of two transformation events (8 and 11) showed lower symptom severities and lower bacterial titers. Current work might indicate if symptom and bacterial titers correlate with attA expression levels. Details of this study will be presented and the perspectives in HLB control with the use of transgenic plants are discussed.