

Pathogenicity of *Bacillus thuringiensis* to *Diaphorina citri* Kuwayama (Hemiptera: Liviidae)

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The discovery that *Bacillus thuringiensis* (Bt) strains are able to endophytically colonize different plant species has opened new perspectives for studies on phloem feeding insects. The pathogenicity of Bt strains to the Asian citrus psyllid (ACP) *Diaphorina citri*, the main vector of causal agents of citrus huanglongbing (HLB), has been suggested. Here, we confirm such pathogenicity after the evaluation of recombinant Bt isolates harboring 10 individual cry or cyt toxin genes against ACP nymphs. A series of bioassays was performed in seedlings of *Citrus sinensis* (L.) Osbeck using 3rd instar nymphs of ACP (five seedlings with ten nymphs/ treatment). Negative controls, without Bt, were added to each test. Toxins were evaluated in at least two independent bioassays. Seedlings were inoculated by drench application of a suspension containing Bt crystals and spores, and the ACP mortality was evaluated daily for five days. Bt isolation from dead nymphs and young leaves, and PCR with specific primers for each cry or cyt gene were performed and confirmed the involvement of the Bt on psyllid mortality. Among ten recombinant isolates tested, one of them stood out, causing up to 93% mortality after 120 h of inoculation. The promising gene was cloned and is being used to genetically modify citrus plants with the objective to obtain transgenic resistance against *D. citri* and mitigate the negative impact of HLB on citrus crops.