3.7 Effects of Soil-Applied and Foliar-Applied Insecticides on Asian Citrus Psyllid (*Diaphorina citri*) Feeding Behavior and Their Possible Implication for HLB Transmission

Serikawa, R.H.\(^1\), Okuma, D.M.\(^1\), Backus, E.A.\(^2\), Rogers, M.E.\(^1\)

\(^1\)UF-IFAS Citrus Research and Education Center, Lake Alfred, FL, USA
\(^2\)USDA, Agricultural Research Service, Parlier, CA, USA

Application of insecticides to reduce psyllid (*Diaphorina citri* Kuwayama) populations is one of the primary methods used for ‘huanglongbing’ (HLB) management. However, it is unknown whether insecticide application can disrupt psyllid feeding behaviors associated with pathogen acquisition and inoculation before insecticide toxicity kills the insect. In this research, Electrical Penetration Graph (EPG) technology was used to study the feeding behaviors of *D. citri* and pathogen acquisition and inoculation in citrus under seven different insecticide treatments: aldicarb (Temik 15 G), chlorpyrifos (Lorsban 4 E), fenpropathrin (Danitol 2.4 EC), imidacloprid (Provado 1.6 F and Admire Pro 4.6 F), spinetoram (Delegate WG), and spirotetramat (Movento 240 SC). Each insecticide was evaluated individually during 12 hours of recording. Foliar insecticides were fresh-applied, and soil-applied insecticides were applied 15 days prior to the experiments. Individual psyllids were wired and their feeding behavior recorded. Non-sequential feeding parameters for each treatment were compared using ANOVA. Chlorpyrifos, fenpropathrin, imidacloprid, and spinetoram provided the best results in disturbing the psyllid feeding, possibly avoiding pathogen acquisition and inoculation. In contrast, aldicarb and spirotetramat did not significantly disrupt psyllid feeding, possibly allowing HLB pathogen acquisition and inoculation. These results provide important information for improvement of HLB management through insecticide use.