

GENDER DIFFERENCES AND EFFECT OF PHOTOPHASE ON ASIAN CITRUS PSYLLID (*DIAPHORINA CITRI* KUWAYAMA) FEEDING BEHAVIOR

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Asian citrus psyllid, *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae), thought to be primarily a phloem-feeding insect, transmits the Huanglongbing pathogen, *Candidatus Liberibacter asiaticus*. Because this bacterium is restricted to the phloem and bacterial transmission is the result of psyllid feeding, investigation of the basic feeding behavior of *D. citri* is needed. In this study, an electrical penetration graph (EPG) monitor was used to: 1) determine whether gender-based differences in feeding behavior exist for *D. citri* and 2) examine the effects of photophase on *D. citri* feeding activities. In the first experiment, investigating gender-based differences in *D. citri* feeding behavior, overall, the number of male *D. citri* reaching the phloem was 20% higher compared to females. However, the mean duration of phloem ingestion (waveform E2) per insect was significantly higher for female *D. citri* compared to males. Analysis within treatments (gender) showed that, despite being considered a phloem feeder, the duration of xylem ingestion (waveform G) and phloem ingestion (waveform E2) were not significantly different. Prominent xylem ingestion was probably not caused by desiccation due to trauma, because insects were not anesthetized, starved or excessively handled during wiring. In the second experiment, examining the effects of photophase on *D. citri* feeding, non-probing activities (waveform z and np), phloem penetration and salivation (waveform D and E1, respectively), and xylem ingestion (waveform G) were generally longer in duration per insect during the light photophase. However, stylet pathway activities (waveform C) and phloem ingestion (waveform E2) were longer in duration during the dark photophase. Within-treatment analysis indicated some effects of photophase on xylem ingestion (waveform G) and phloem ingestion (waveform E2). Thus, results suggest that gender and photophase have an influence on *D. citri* feeding behavior, and are important variables that could affect the outcome of experiments investigating the transmission of *Candidatus Liberibacter asiaticus* by *D. citri*.