Efficacy of essential oil of *Piper aduncum* against nymphs and adults of *Diaphorina citri*

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Abstract Text:

Insecticide application is the main way to control *Diaphorina citri*. However, it causes environmental contamination, has a negative impact on beneficial organisms, and leads to psyllid resistance. The essential oil of *Piper aduncum* has low toxicity towards the environment and contains dillapiol, which was proven to be effective against several crop pests. Here, we studied its efficacy against nymphs and adults of *D. citri* under laboratory conditions. Oils with three concentrations of dillapiol (65.2%, 76.6%, and 81.6%) at 0.5%, 0.75%, and 1.0% dilutions plus 0.025% adjuvant were tested. All treatments caused 90–100% mortality in nymphs. Topical treatments with oil containing 76.6% and 81.6% of dillapiol at 0.75% and 1% dilutions were effective (mortality ≥ 80%) in adults. However, the essential oil showed no residual activity against adults (mortality ≤ 30%). Because of its high efficacy against nymphs and adults, *P. aduncum* is a promising botanical insecticide for use in integrated pest management of *D. citri*.
ESA Approved Common Name:
Asian citrus psyllid

Common Name:
Asian citrus psyllid

Order:
Hemiptera

Family:
Liviidae

Genus:
Diaphorina

Species:
citri

Order:
Piperales

Family:
Piperaceae

Genus:
Piper

Species:
aduncum

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