

Comparisons of Economic Thresholds for Asian Citrus Psyllid Management Suggest a Revised Approach to Reduce Management Costs and Improve Yield

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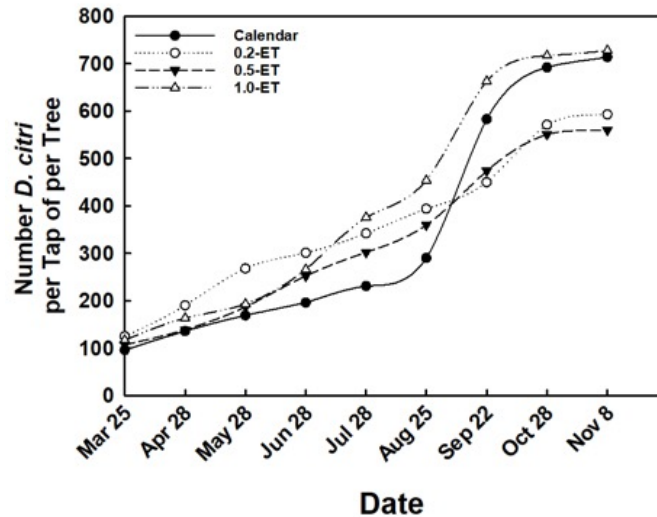


Fig 1. Cumulative number of Asian citrus psyllid (*Diaphorina citri*) under various economic threshold (ET) treatments in Florida citrus during 2021.

Vector control is considered a basic component of HLB management even under high disease incidence scenarios. The present study compared the effects of three different economic thresholds (ET-0.2, 0.5, 1.0) and one calendar-based application schedule on the incidence of Asian citrus psyllid (ACP) and beneficial species in plots of commercially grown citrus, as well as end-of-season yield and overall management costs. The results suggest that reducing spray frequency from 8 to as few as 4 sprays per year had little effect on counts of pest and beneficial insects in the field (Fig. 1). The numbers of ACP and that

of a secondary weevil pest were similar between plots treated with the calendar-based spray plots and plots managed with the ET-1.0. Furthermore, spider numbers were higher in the ET-1.0 plots, while ant numbers were lower compared with calendar sprayed plots. Management input costs were lower under economic thresholds (ET-0.5 to ET-1.0) than with monthly calendar-based sprays, while yield losses were only slightly greater in the lower threshold of 0.2 mean psyllids per tap than with calendar sprays. Overall, management savings of more than 100% made up for this difference. A dormant season application

timed to budbreak is needed to reduce ACP population prior to spring flush in order to adequately maintain low ACP populations with threshold-based spray decisions. Together, these results suggest that implementing a spray program of rotated chemistries based on an economic threshold of 0.5-1.0 adult psyllids per stem tap could provide both economic and ecological benefits.

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