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Official page

Dr Nicholas Manoukis is the Research Leader of the Tropical Crop and Commodity Protection Research Unit of the US Department of Agriculture - Agricultural Research Service in Hilo, Hawaii. His research program encompasses computer modeling and simulation of insect invasions and experiments in the field and laboratory on pest ecology and behavior. He has a particular interest in improving surveillance, delimitation, and eradication of invasive tephritid fruit flies as well as IPM of coffee berry borer.

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A computer model of trap networks, field experiments in parametrisation, and application against invasive fruit flies and other insects

ABSTRACT

Tephritid surveillance programs based on trapping are mature systems for detecting incursions. They have been successful over decades at detecting repeated introductions of fruit flies, enabling extirpation of these serious quarantine pests repeatedly around the world. There is an opportunity to increase the efficiency of these programs via application of numerical methods and computational analyses. I will describe a computer model of trap attraction and trap network sensitivity, the biological basis of this model, experiments conducted to parametrize it, and possible applications to improve surveillance and detection of fruit flies and other invasive pests generally.