

A RESEARCH UPDATE ON *SIREX NOCTILIO* FOR NORTH AMERICA

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Sirex noctilio is one of a number of new invasive pests that have significant impacts on the North American forest. Major programs are now underway to eradicate or manage the Asian longhorned beetle, emerald ash borer, sudden oak death syndrome, Asian gypsy moth, brown spruce longhorned beetle, and hemlock wooly adelgid. *Sirex*, however, is the first major pest introduced that threatens the pine resource. The North American pine resource is diverse, comprising of about 35 species in the genus, *Pinus*, north of Mexico. Pines are also widespread, occurring in mixed or pure stands over most of the continental United States.

The Animal and Plant Health Inspection Service (APHIS) role is to prevent introductions of exotic pests and, when introductions occur, to develop programs to eradicate or manage them. As part of this effort, APHIS and its cooperators maintain a national detection program for high-risk exotic pests. Studies were initiated to develop *Sirex* detection traps for the Cooperative Agricultural Pest Survey (CAPS) program, prior to the discovery of *Sirex* in Fulton, NY. These studies have led to the identification of host tree volatiles that are antennally active and display behavioral activity. Additional work has also identified a contact pheromone that *Sirex* males use to recognize females. Ongoing studies are attempting to fully characterize and exploit the mate finding and host finding behavior of *Sirex noctilio* adults.

As part of developing a control program and determining what factors contribute to a tree's attractiveness, a series of tree girdling experiments are underway. Three species of pine (red, white, and scotch) have been girdled at different times prior to adult flight and with different amounts and types of herbicides. We are studying the sequence and frequency of attack by *Sirex* and other North American bark and wood infesting species.

Vic Mastro is the Laboratory Director of the Pest Survey, Detection, and Exclusion Laboratory (USDA-APHIS-PPQ-CPHST) located at Otis ANGB on Cape Cod in Massachusetts. His focus has been on developing operational technology for the exclusion, detection, and management of invasive species. His interests are behavior, population management, chemical ecology, and survey. Currently, he chairs science panels for the Asian gypsy moth, Asian longhorned beetle, emerald ash borer, and *Sirex noctilio*. The laboratory supports a number of other major APHIS activities, including the national exotic pest survey, commodity treatments, pest risk assessment, and offshore risk mitigation.

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