

NORTH AMERICAN HOST TREE RESPONSE TO *AMYLOSTEREUM AREOLATUM*, THE FUNGAL SYMBIONT OF THE WOODWASP *SIREX NOCTILIO*

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ABSTRACT

Sirex noctilio Fabricius (Hymenoptera: Siricidae), a wood boring wasp native to Europe, western Asia, and northern Africa, is now considered established in New York, Pennsylvania, Michigan, New Hampshire, and southern Quebec. A single *S. noctilio* adult was found in Vermont in 2007. *S. noctilio*, together with its obligate symbiotic fungi, *Amylostereum areolatum*, will likely negatively affect populations of North American pines, because these species are the preferred hosts of the wasp. Female *S. noctilio* deposit asexual spores of *A. areolatum* in a host tree during oviposition. The fungus then grows, serving as food for the wasp larvae and eventually killing the tree. It is unknown

how vigorous and stressed pines respond to and defend against the fungus. The purpose of this study is to simulate *S. noctilio* attack and evaluate the interaction between conifer hosts and *A. areolatum*. Overall physiological responses in white pine (*Pinus strobus*) and red pine (*P. resinosa*), particularly tree defense mechanisms deployed against *A. areolatum*, are quantified. Information collected during this study will further understanding of the impacts that *S. noctilio* will have on North American forests, identify signs and symptoms of attack, and support the development of silvicultural practices that minimize damage caused by *S. noctilio*. Preliminary results are presented.