



NEW PEST ADVISORY GROUP (NPAG)
Plant Epidemiology and Risk Analysis Laboratory
Center for Plant Health Science & Technology
NPAG@aphis.usda.gov

***Sirex noctilio* Fabricius: Sirex Woodwasp**

Hymenoptera/Siricidae

NPAG Chair Approval Date: 05/12/03

Initiating Event, Notifier and affiliation, Notification date: Scott Redlin USDA-APHIS-PPQ-CPHST, notified NPAG on August 14, 2002 regarding a report of *Sirex noctilio* Fabricius within the United States. The specimen found on July 22, 2002 at the Otis Elevator Co. in Bloomington, Indiana by Otis Elevator staff was verified as *S. noctilio* by the Systematic Entomology Laboratory (SEL), Beltsville MD on 8-01-02. Tim Vawryk, PPQ Officer for Southern Indiana, followed up the incident and provided a report.

Datasheet(s): Haugen, D. A. 2002. A *Sirex* Woodwasp, *Sirex noctilio* Pest Risk Potential, Appendix D in Pest Risk Assessment for the Importation of Solid Wood Packing Materials into the United States. USDA APHIS and FS, February 2002.

Current Regulatory Status: *Sirex noctilio* is a U.S. quarantine pest, (reportable/actionable) and is not known to occur in North America (PIN309 search done on 11/06/03). *Sirex noctilio* is not on the APHIS Regulated Pest List (11/06/03).

Pest Situation Overview

Biology, global distribution, potential pathways and spread: *Sirex noctilio* is generally considered to be a secondary pest of trees in its native range. *S. noctilio* has a mutualistic relationship with a fungus, *Amylostereum areolatum*. This fungus is only vectored by three siricid species, none of which are currently present in the United States. *S. noctilio* is endemic to Europe, Asia, and northern Africa and has successfully established in South Africa, South America, Australia and New Zealand (Haugen 2002, Maderni 1998). *S. noctilio* is not documented to occur in the United States (G. Fowler, personal communication). In a 09/19/02 e-mail, Tim Vawryk stated to Stacy Scott (CPHST NPAG) that no additional specimens have been found inside or outside the initial site in Bloomington, Indiana. Based on its native range in Europe and Asia, *S. noctilio* could establish in any climate zone of North America where pine occurs. This pest is attracted to stressed trees that are often used to make solid wood packing material (SWPM). Since the life cycle can take a year or more, and have a high survival rate, the insect could be easily transported in pallets or other SWPM and not be detected at a port (Haugen 2002).

Potential economic, trade implications and environmental impacts: In Australia and South America, *Sirex noctilio* causes significant tree mortality and is considered a major pest (Oliveira *et al.* 1998). The Pest Risk Analysis for *S. noctilio* (Haugen 2002) indicates that likelihood of introduction and the potential for adverse economic, environmental and social consequences are high for this pest. The vectored fungus, *A. areolatum*, in conjunction with a toxic mucus injected by *S. noctilio*, rapidly weaken the tree, making it susceptible to larval feeding. Of the three locations modeled in the United States, Haugen (2002) states that Atlanta, GA would sustain the greatest damage levels with a range of annual volume losses of 550 million ft³ to more than 6 billion ft³. In the United States, if the commercial western pine species are susceptible to *S. noctilio*, a conservative estimation of tree mortality could cause economic losses of \$28-\$154 million in that region (Haugen 2002).

PIN 309 interception records (1985 – March 2003) show ten interceptions from Spain and Italy in SWPM. Two other interceptions for *Sirex* sp. are from logs and ‘cargo’ from China. In addition, siricids have been demonstrated to follow the pathway of wooden handicrafts from Asia and Mexico. APHIS PPQ CPHST, Port operations, and the Eastern Region are working on an analysis of this pathway issue (J.W. Smith, personal communication). Information posted on the PPQ website (October 30, 2003) states the following: APHIS has published a Draft Rule for new requirements concerning the importation of wood packaging material and is targeting April or May of 2004 (PPQ 2003). In anticipation of finalization of the Rule we are encouraging all

Lawrence G. Brown, Chair lawrence.g.brown@aphis.usda.gov (919) 513-2347	USDA/APHIS/PPQ 1017 Main Campus Dr., Suite 1550 Raleigh, NC 27606-5202	Stacy E. Scott, Executive Secretary stacy.e.scott@aphis.usda.gov (301) 734-5303
Sirex noctilio NPAG et Report 031114.doc		1 of 3



NEW PEST ADVISORY GROUP (NPAG)
Plant Epidemiology and Risk Analysis Laboratory
Center for Plant Health Science & Technology
NPAG@aphis.usda.gov

importers to meet the conditions of ISPM 15 and the Draft Rule which require that all wood packaging material be appropriately treated and marked under an official program developed and overseen by the National Plant Protection Organization (NPPO) in the country of export. APHIS will follow its current policy for wood packaging material until the new Rule goes into effect.

NPAG Teleconference(s): None

Current response and activities: Australia, New Zealand, and several South American Countries, in cooperation with the US Forest Service, have employed biological control programs for *S. noctilio* over the past ten years. The parasitic nematode, *Deladenus siricidicola*, is available and can reduce and maintain *S. noctilio* populations below the economic damage threshold. *D. siricidicola* can be mass produced and inoculated into *S. noctilio* populations as they invade and colonize new territories. The minimum cost to establish the nematode was estimated at \$3.50 per acre in plantations, but a less intensive program could be implemented in natural stands compared with pine plantations.

Approved PPQ Policy (November 11, 2003): Add *S. noctilio* to the APHIS Regulated Plant Pest List.

Approved Recommendations:

- 1) Draft New Pest Response Guidelines for *Sirex noctilio*. This is warranted because 1) *Sirex noctilio*, is highly invasive and could establish throughout the United States and cause significant economic and environmental impacts (Haugen, 2002), 2) Due to the pathway issue (SWPM), NPAG considers this pest to be an imminent threat to the United States, and 3) Since discovery of the pest in SWPM by PPQ in Indiana, it has not been found in or outside of the initial site (T. Vawryk, personal communication). **Timeline:** March 14, 2004, **Action Leader:** Mike Stefan, PPQ-PDMP. This NPAG report and recommendation was reviewed by Michael Stefan, PDMP, in February, 2003.
- 2) Continue evaluation of the SWPM pathway for *S. noctilio*. **Timeline:** ASAP, **Action Leader:** Ron Sequiera, PPQ-CPHST.
- 3) Add *S. noctilio* to the APHIS Regulated Plant Pest List.. **Timeline:** Now, **Action Leader:** Larry Brown, PPQ-CPHST.
- 4) A priority pest for CAPS Survey. **Timeline:** In time for next survey season 2004, **Action Leader:** Jerry Fowler, PPQ-Eastern Region.

Key References:

- Fowler, G. 2002. E-mail from Glenn Fowler, USDA-APHIS-PPQ-CPHST, Raleigh, NC (24 October, 2002). On file with USDA, APHIS, PPQ. Subject: *Sirex noctilio*.
- Haugen, D. A. 2002. A *Sirex* Woodwasp, *Sirex noctilio* Pest Risk Potential, Appendix D in Pest Risk Assessment for the Importation of Solid Wood Packing Materials into the United States, APHIS 81-35-008. USDA APHIS and Forest Service, August 2002.
- Maderni J.F.P. 1998. *Sirex noctilio* F.: present status in Uruguay. Pp. 81-82 In: Proceeding of a conference: training in the control of *Sirex noctilio* by the use of natural enemies. USDA Forest Service. FHTET: 98-113
- Oliveira, E.B.; Penteado, S.R.C.; Iede, E.T. 1998. Forest management for the prevention and control of *Sirex noctilio* in *Pinus taeda*. In: Iede, E.T., ed. Training in the control of *Sirex noctilio* by the use of natural enemies: proceeding of a Conference; 4-9 November 1996; Columbo, Brazil. Morgantown, WV: U.S.

Lawrence G. Brown, Chair lawrence.g.brown@aphis.usda.gov (919) 513-2347	USDA/APHIS/PPQ 1017 Main Campus Dr., Suite 1550 Raleigh, NC 27606-5202	Stacy E. Scott, Executive Secretary stacy.e.scott@aphis.usda.gov (301) 734-5303
Sirex noctilio NPAG et Report 031114.doc		2 of 3



NEW PEST ADVISORY GROUP (NPAG)
Plant Epidemiology and Risk Analysis Laboratory
Center for Plant Health Science & Technology
NPAG@aphis.usda.gov

Department of Agriculture, Forest Service, Forest Health Technology Enterprise Team, FHTET-98-13:
67-75.

PPQ. 2003. USDA APHIS-Plant Protection and Quarantine Solid Wood Packing Material Webpage:
<<http://www.aphis.usda.gov/ppq/swp/>> , Notice Posted October 30, 2003.

Smith, J.W. 2002. E-mail from Jim W, Smith, USDA-APHIS-PPQ-CPHST, Raleigh, NC (19 October, 2002). On
file with USDA, APHIS, PPQ. Subject: Re: S. noctilio and other woodborers of handicrafts.

Vawryk, T. 2002. E-mail from Tim Vawryk, USDA-APHIS-PPQ-CPHST, Riverdale, MD (19 September, 2002).
On file with USDA, APHIS, PPQ. Subject: Re: Sirex noctilio id # 0207322 Sirex Wasp.

Author: Stacy Scott

Lawrence G. Brown, Chair <u>lawrence.g.brown@aphis.usda.gov</u> (919) 513-2347	USDA/APHIS/PPQ 1017 Main Campus Dr., Suite 1550 Raleigh, NC 27606-5202	Stacy E. Scott, Executive Secretary <u>stacy.e.scott@aphis.usda.gov</u> (301) 734-5303
Sirex noctilio NPAG et Report 031114.doc		3 of 3