Sirex Woodwasp Project in Brazil
FY 2002 Accomplishments

Forest Health Protection (FHP) staff and the Brazilian Agricultural Corporation (EMBRAPA) completed or made significant progress on four major tasks in Fiscal Year 2002 that are helping to implement an integrated pest management (IPM) program for the *Sirex* woodwasp in Brazil.

Key accomplishments in FY 2002:

- **Development of a Sirex host type map continues**, led by EMPBRAPA with technical assistance from Jim Ellenwood, Forest Health Technology Enterprise Team-Fort Collins. To develop this map of exotic pine plantations for the State of Parana, EMBRAPA remote sensing specialists are classifying 13 Landsat satellite images. An initial classification and accuracy assessment of one of the scenes was completed. Ellenwood conducted a site visit in March 2002 and provided guidance that EMBRAPA specialists are using to complete classification of the remaining 12 Landsat scenes.
- **Aerial sketchmap training of 12 Brazilian trainees completed** by Erik Johnson, FHP Rocky Mountain Region and Bill Ciesla in April 2002. The trainees learned how to map Sirex and other forest damage and to verify the accuracy of the initial Landsat classified host type maps. The trainees represented EMBRAPA, private industry, and the Federal University of Parana.
- **Review of Sirex biocontrol program completed** by Dennis Haugen, FHP Northeastern Area in April 2002. Visits were made to timber company lands on the leading edge of Sirex distribution. Reviewed detection results from trap trees and inoculation of those trees with a parasitic nematode for control of the pest. Made recommendations relative to nematode inoculations, lab rearing and field establishment of parasitoids, and use of herbicides to establish trap trees.
- **Advanced Aerial sketchmap training of EMBRAPA employee in U.S. completed** by Erik Johnson n August 2002. Joel Penteado participated in six aerial survey flights in the Black Hills of South Dakota and Wyoming. Joel was a quick study and now has the skills to produce good quality aerial survey maps in his homeland. EMBRAPA has made a commitment to establish an aerial detection survey program and allow Joel to conduct surveys for two to four weeks annually.

EMBRAPA cooperators on these accomplishments: Erich Schaitza, Susete Penteado, Ceso Auer, Yeda Oliveira, Edson Iede, Wilson Reis Filho, Ivan da Silva, and Carla Castellano, Joel Pentaedo, Maria Augusta Rosot

Benefits to Cooperators in U.S. and Brazil from this project: Sirex is considered a major threat to the native pine forests of the United States. In FY 2002 Brazil benefited directly in reduced losses to Sirex as a result of the Forest Service expertise provided in biological control. Brazil will realize additional benefits in future years when the host

type map is completed and used to map biological control activities and also to support an operational aerial detection survey program. In FY 2002 the U.S. benefited indirectly through this cooperative work by reducing the risk of introducing Sirex into our native pine forests. The U.S. also benefited through the experience gained by the Forest Service employees on this project. That experience could be very helpful in the future if Sirex becomes established in the United States.

Background of the Sirex Woodwasp: *Sirex noctilio* is native to Europe and Asia where it is a secondary invader of pines weakened by biotic and abiotic factors. During the early 1900s it was introduced to New Zealand, then later to Australia, South America and South Africa. Starting in 1988 in Brazil, Sirex caused widespread losses in exotic loblolly pine (*Pinus taeda*) plantations, in some cases over 60% mortality. Since 1997 Forest Service International Programs and Forest Health Protection have supported the development of a cooperative IPM program for the Sirex Woodwasp.