

SOUTHERN FOREST TREE IMPROVEMENT COMMITTEE/WESTERN FOREST GENETICS ASSOCIATION
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Entomology Specialist Report

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Seed, Cone and Regeneration Insect Conditions in 2006

Coneworms, *Dioryctria amatella*, *D. clarioralis*, *D. disclusa*, *D. merkei*

Informal surveys indicated 20-30 % loss of second-year cones (2006 cone crop) in untreated trees in slash and loblolly pine seed orchards. This loss does not include first-year flowers and conelets that fall off or disintegrate during the season; therefore, this is a low estimate of the total damage caused by coneworms. Longleaf pine in central Louisiana suffered significant damage from *D. amatella* and *D. merkei*; this is significant since there was an extremely small first-year crop (2007 cone crop).

Pitch canker, *Fusarium circinatum*

Damage to second-year cones (2006 cone crop) was reported throughout the South. This damage was particularly severe in both loblolly and slash pine orchards located in the south coastal plain of Mississippi and Alabama and the panhandle of Florida. This was associated with tree stress caused by root and crown damage caused by hurricanes in 2004 and 2005 followed by severe drought in these areas during most of 2006.

Seedbugs, *Leptoglossus corculus*, *Tetyra bipunctata*

Both species of seedbug were present in pine seed orchards throughout the South. Samples of conelet ovule damage indicated that seedbugs, primarily *L. corculus*, caused about 35% seed loss on untreated loblolly in Louisiana.

Southern cone gall midge, *Cecidomyia bisitosa*

This species caused localized significant loss of slash pine conelets in northern Florida slash pine seed orchards in 2006.

Nantucket pine tip moth, *Rhyacionia frustrana*

Texas reported a dramatic increase in tip moth activity in late summer 2006, probably related to widespread summer drought conditions. North Carolina reported scattered tip moth activity across the Coastal Plain, often in association with pitch canker. Tennessee experienced light infestations with no significant damage.

Reproduction weevils, *Hylobius pales*, *Pachylobius picivorus*

North Carolina and Tennessee reported only scattered activity; South Carolina also reported scattered activity in the Coastal Plain.

Texas leaf-cutting ant, *Atta texana*

Localized defoliation of recently planted pine plantations occurs annually in east Texas and west central Louisiana on sites with deep, sandy soil. Populations of these ants remain relatively stable from year to year.

Abiotic Damage – Hurricane

Damage to southern pine seed orchards occurred in 2005 as a result of Hurricane Katrina continued in 2006 in the form of sudden tree mortality in pine orchards located in Mississippi and Alabama. The trees received root and crown damage from high winds. Subsequent drought conditions throughout 2006 resulted in severe stress. Trees became susceptible to disease and bark beetle infestations. Loss of large first-generation orchard trees was significant in several orchards.

More detailed information on forest insect conditions in 2006 can be found at this website:

http://www.fs.fed.us/r8/foresthealth/2006conditions/2006_conditions.pdf

Current Seed, Cone and Regeneration Insect Research

Dr. Donald Grosman, Entomologist III, Texas Forest Service, is the Research Coordinator of the Western Gulf Forest Pest Management Cooperative. The WGFPMC continues to do research on forest pest management issues. Current work includes development and implementation of systemic pesticide injection technologies for protection of single trees against insect pests – including coneworms and seed bugs. Don is also doing work on management tools for the Texas leafcutting ant and tip moth. For a complete discussion of activities please see:

<http://txforestservicetamu.edu/main/article.aspx?id=1168>

Contact Don at dgrosman@tfs.tamu.edu

Dr. Dan Miller, Research Entomologist, USDA Southern Research Station, is doing research on semiochemicals of bark beetles and coneworms. He is currently cooperating with Dr. Amanda Roe, on a study of the systematics of the coneworms, Genus *Dioryctria*. Dr. Roe is using molecular genetic techniques to clarify the relationships among species in the genus. Dan is continuing his work on acorn weevils in red oak seed orchards.

Contact Dan at dmiller03@fs.fed.us

Dr. Alex Mangini, Entomologist, USDA Forest Service, Southern Region, Forest Health Protection, is conducting a pilot test of Confirm[®] 2F, a formulation of tebufenozide, for control of coneworms. This product recently received a supplemental label for control of coneworms in conifer seed orchards. Tebufenozide is a molting hormone agonist and was previously used in Southern seed orchards as Mimic[®] 2LV. The pilot study will provide efficacy data to support the new label. Publications on seed and cone insects are available at this website:

<http://www.fs.fed.us/r8/foresthealth/>

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