Entomology Specialist Report

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Seed, Cone and Regeneration Insect Conditions in 2005

Coneworms, *Dioryctria amatella, D. clarioralis, D. disclusa, D. merkeli*: Surveys indicated an average 30% loss of second-year cones (2005 cone crop) in untreated trees. Damage levels in slash pine orchards were similar to those in loblolly pine seed orchards. This loss does not include first-year flowers and conelets that fall off or disintegrate during the season and is, therefore, a low estimate of the total damage caused by coneworms. Moderate and unexpected damage to treated orchards occurred throughout the South, including orchards in east Texas, central Alabama, and southern Georgia, indicating higher than average populations. Virginia reported only minimal (<5%) cone losses in orchards with routine spray programs.

Seed bugs, *Leptoglossus corculus, Tetyra bipunctata*: Both species of seed bug were present in pine seed orchards throughout the South. Samples of conelet ovule damage indicated that seed bugs, primarily *L. corculus*, caused about 25% seed loss on untreated loblolly in Louisiana. Large populations of *T. bipunctata* occurred in September and October in orchard trees monitored in Louisiana. In Texas, unsprayed pine seed orchards sustained about 23% damage. These estimates probably reflect those throughout the Gulf Coast states.

Abiotic damage – hurricane: Damage to Southern pine seed orchards occurred in 2005 as a result of Hurricanes Katrina and Rita. Katrina was catastrophic to some orchards; the Erambert Seed Orchard (De Soto NF, Wiggins MS) was extensively damaged, as was a commercial seed orchard in Louisiana. Many of the first-generation trees were lost, either to uprooting or to crown breakage. New orchard blocks with younger trees (generally less than 8" DBH) were much less severely impacted. Rita caused moderate damage to seed orchards in east Texas and southwestern Louisiana.

Regeneration insects: The Nantucket pine tip moth, *Rhyacionia frustrana*, was stable in 2005 although increased populations were noted in the coastal plain region of North Carolina associated with pitch canker. Reproduction weevils, *Hylobius pales* and *Pachylobius picivorous*, caused significant damage in Walker County, Texas in 2005. Texas leaf-cutting ant, *Atta texana*, causes defoliation of pine plantations annually in east Texas and west central Louisiana on sites with deep, sandy soil. Populations of these ants remained stable in 2005.

Current Seed, Cone and Regeneration Insect Research

Dr. Dan Miller, Research Entomologist, USDA Forest Service, Southern Research Station, works in the areas of impact assessment and semiochemicals. His research includes control of acorn weevils in red oak seed orchards and testing responses of the four southern coneworm species (*Dioryctria* spp.) to a new compound recently isolated from a western coneworm species. Contact Dan at dmiller03@fs.fed.us.

Dr. Don Grosman, Entomologist, Texas Forest Service, is currently working on development and testing of new products for control of Texas leaf-cutting ant. He is doing studies of single-tree treatments for control of seed and cone insects using injected emamectin benzoate and fipronil.

The injection studies have been expanded to include tests against bark beetles in the South and Pacific Northwest. Contact Don at dgrosman@tfs.tamu.edu.

Dr. Alex Mangini, Entomologist, USDA Forest Service, Southern Region, Forest Health Protection, is conducting a pilot test of the efficacy of novaluron, a new-generation insect growth regulator, for control of coneworms and seed bugs. A test in 2005 indicated promising results on control of seed bugs. The test is being repeated this year to test efficacy against coneworms. Contact Alex at amagini@fs.fed.us.

Drs. John Taylor, Entomologist, USDA Forest Service, Southern Region, Forest Health Protection, and Bob Krieger, Extension Toxicologist, University of California Riverside, are conducting a worker exposure study for pine cone harvesting. The study will determine the transfer coefficient for esfenvalerate (Asana®) from treated cones to workers harvesting the cones. This will provide solid data to present to EPA when seed orchard pesticide registration questions arise. Contact John at jwtaylor@fs.fed.us.

Seed Orchard Pest Management Subcommittee

The Seed Orchard Pest Management Subcommittee (SOPMS) of the Southern Forest Tree Improvement Committee coordinates pest management activities in the South. Dr. Tom Byram, Director, Western Gulf Forest Tree Improvement Cooperative, is Chair of the Subcommittee and issues a report to SFTIC annually. The committee coordinates South-wide efficacy tests of pesticides. Currently, it is involved in pesticide registration issues. Current issues include:

- Use of azinphosmethyl (Guthion®) has been cancelled and cannot be used in seed orchards after 31 December 2006.
- Changes to the label for permethrin (Pounce®) will require a 30-day period between application and cone harvest.
- The SOPMS is attempting to get 24-c (local special needs) registrations for Confirm™ (tebufenozide) subsequent to the temporary unavailability of Mimic™.
- Production of Volcano® Leafcutter Ant Bait, which formerly provided excellent control of Texas leaf-cutting ant, has been terminated.

Exotic Invasive Insects

A recent introduction, *Sirex noctilio*, the sirex wood wasp, has been found in several counties in New York and Ontario. Surveys are underway to detect new infestations as soon as possible. The sirex wood wasp has the potential to damage orchard trees. For more information visit: http://www.aphis.usda.gov/ppq/ep/emerging_pests/sirexnoctilio.html.

Submitted by Alex Mangini
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