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**Quarterly Newsletter  
on Western Gulf  
Forest Pest Management  
Issues**

PEST is a quarterly newsletter that provides up-to-date information on existing forest pest problems, exotic pests, new pest management technology, and current pesticide registrations in pine seed orchards and plantations. The newsletter focuses on, but is not limited to, issues occurring in the Western Gulf Region (including, Arkansas, Louisiana, Mississippi, Oklahoma, and Texas).

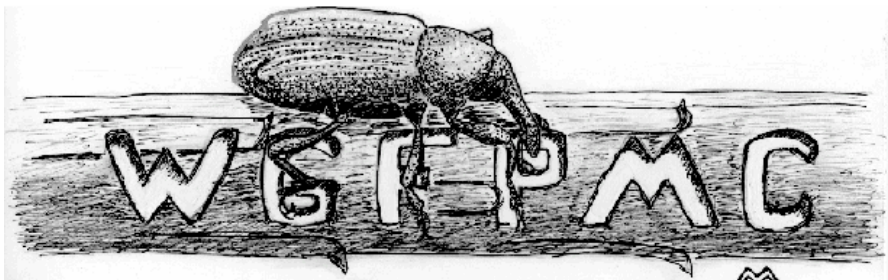
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**Announcement:**

Mark your calendars! All WGFP MC executive and contact representatives, industry, and TFS foresters are invited to attend the fall session of the East Texas Forest Entomology Seminar scheduled for October 26 & 27, 2000. The meeting will begin at 1:00 PM on Thursday at Kurth Lake Lodge, north of Lufkin, and continue until noon on Friday at the Arthur Temple College of Forestry at SFASU in Nacogdoches. Registration is \$20, which includes an evening meal. For additional information and/or an agenda, contact Ron Billings at 936/639-8170 or [rbillings@tfs.tamu.edu](mailto:rbillings@tfs.tamu.edu).

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**Western Gulf Forest Pest Management Cooperative**



Pales Weevil, *Hylobius pales*

**Texas Forest Service, Forest Pest Management,  
P.O. Box 310, Lufkin, Texas 75902-0310**

**Volcano® Leafcutter Ant Bait is Now Registered in Louisiana.**

The Louisiana Department of Agriculture and Forestry recently approved a 24C (Special Local Need) registration for Volcano® Leafcutter Ant Bait for the control of the Texas leaf-cutting ant in the pine forests of Louisiana. Volcano® received a similar registration in Texas in 1999. These registrations now encompass the entire range of the Texas leaf-cutting ant within the U.S.

Methyl bromide had been the standard control option for treating Texas leaf-cutting ant colonies in the past. However, Volcano® has several characteristics which make it a better control option. The active and carrier ingredients in Volcano are sulfluramid and citrus pulp, respectively. Sulfluramid is a safe, slow-acting poison and citrus pulp is highly attractive to the ants. As a result, the bait has proven to be nearly 100% effective in halting ant activity year around with a single application. Methyl bromide, on the other hand, is highly toxic to humans and is only moderately effective when applied during the summer months. Best of all, Volcano® is less expensive (1/2 to 1/5 the cost) compared to methyl bromide.

Griffin LLC, the product's manufacturer, has produced a dual label that covers both states. This will allow transport of the bait across Louisiana/Texas borders. At this time, there is only one distributor, Red River Specialties, with offices in Shreveport, LA (contact: Robby Keen @ 318/425-5944) and Jasper, TX (contact: George Bieber @ 409/384-7965). Volcano® can be ordered from either office at a cost of \$32.40 per pound. Currently, there are 3,000 pounds available, but an additional 10,000 pounds will be available by the end of September. For additional information about Volcano® or Texas leaf-cutting ants contact Don Grosman at 936/639-8170 or at [dgrosman@tfs.tamu.edu](mailto:dgrosman@tfs.tamu.edu).

## Pest Spotlight: Nantucket pine tip moth

The Nantucket pine tip moth, *Rhyacionia frustrana* (Comstock), is one of the most common forest insect pest occurring in the southeastern United States. The trend toward establishing and intensively-managing large areas of pine plantation as well as the increased incidence of droughts (as experienced in the Western Gulf region over the past 3-4 years), often lead to an increase in pine tip moth populations and damage. This article summarizes the identification, biology, and management of this pine pest.

**Distribution and Hosts.** The Nantucket pine tip moth occurs from southern New England to Florida, west to Texas and Arkansas, and was recently introduced into southern California. Most two and three needled pine species are susceptible to attack. Among the southern pines, shortleaf, loblolly, and Virginia pines are the most susceptible. Scotch and pitch pine are also subject to attack. Slash pine is highly resistant and longleaf pine is virtually immune to attack.

Two other species of *Rhyacionia* are found in the eastern range and often infest the same trees as the Nantucket pine tip moth. These are the pitch pine tip moth, *R. rigidana* (Fernald), and the subtropical pine tip moth, *R. subtropica* Miller. The pitch pine tip moth is the more prevalent and is difficult to distinguish from the Nantucket pine tip moth. Its range largely overlaps that of the Nantucket pine tip moth. The range of the subtropical pine tip moth is restricted to Florida and the southern parts of Georgia, Mississippi, and South Carolina. In California, the Nantucket pine tip moth attacks the same trees as the Monterey pine tip moth, *R. pasadenana* (Kearfott).

**Description of Damage.** The Nantucket pine tip moth is most damaging to pine plantations and to wild pine seedlings in open areas. It poses an ever increasing problem because of forestry trends that favor the establishment of large areas of pine plantations. In such areas, Nantucket pine tip moth damage may be very common. Tip moths may also be particularly damaging to pine seed orchards because they kill female flowers

and conelets and potential cone-bearing shoots. Trees grown for other special purposes, such as Christmas trees, and progeny tests are often regarded as high risks for tip moth attack.

Tip moth larvae attack developing shoots of young pines and may cause serious damage, resulting in severe stunting and stem deformation, and in extreme cases death to the host. Loss of tree form is common where heavy attacks cause forks, crooks, or multiple trunks. Damage is generally most severe on seedlings and saplings under five years of age and 15 feet (4.6 m) tall, but decreases as crowns close. However, severe attacks on commercial-sized trees have been reported.

**Identification.** Adult moths are small (wing spread = ½ inch (12 mm)); the head, body, and appendages are covered with gray scales; and the forewings are reddish-brown with silver-gray markings. Eggs are yellow in color, and usually are laid singly. Young larvae are cream colored with black heads. Mature larvae are light brown to bright orange and about 3/8 inch (9 mm) long. The pupae are light to dark brown and about 1/4 inch (6 mm) long.

**Life History.** Nantucket pine tip moth has two to five generations/year throughout its range, with three to five generations occurring in the Western Gulf region. Adult emergence for each generation is synchronized with new growth flushes from its primary host, loblolly pine. The first two generations are distinct, whereas life stage overlapping occurs in the later generations. Winter is spent as a pupa within the injured tips of the host. In southeast Texas, adults emerge from early February to mid-March. Mating occurs soon after emergence and is mediated by sex pheromones (female-produced chemicals that attract males). Eggs are often deposited on needles, and hatch within 14 days. First instar larvae either feed on the surface of new growth, causing shallow injuries, or bore into the needle bundles. Second instar larvae feed at needle and bud axils, where they construct a tent of silk

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## Pine Tip Moth (Continued from Page 2)

covered with resin. Subsequent instars feed inside buds and shoots. Second generation adults emerge five to six weeks after the first generation adults (mid-April to mid-May). Peak emergence of third, fourth and fifth generation adults occurs in late June, mid-August, and late September, respectively.

**Control.** More than 30 known species of parasites attack the Nantucket pine tip moth. Several predatory insects and birds also feed on this pest. Low winter temperature in the northern part of the range can kill overwintering pupae. A parasitic wasp, *Campoplex frustranae* (Cushman), has been successfully introduced from Georgia into the infested area of southern California and has greatly reduced tip moth damage on Monterey pine at some locations. Because of the high cost, the benefit/cost ratio is small for large-scale treatments. Due to high costs, control by insecticides is usually not recommended except in seed orchards, nurseries, Christmas tree plantations, or on ornamentals. Several insecticides are currently registered for tip moth control: azadirachtin, acephate, azinphosmethyl, bifenthrin, carbaryl, chlorpyrifos, cyfluthrin, cyhalothrin, deltamethrin, diflubenzuron, difluorobenzamide, dimethoate, disulfoton, esfenvalerate, imidacloprid, permethrin, phosmet, spinosad, and tebufenozide. Some are applied to pine foliage and others, which are systemic insecticides, are applied to the soil.

If foliar sprays are used and season-long control is desired, spraying may be necessary for each generation. Effective use of pesticides is dependent on precise timing for spraying, which should be carried out after eggs are laid up until second instar larvae are present. This is the only period of time when young larvae feed on the exterior of the shoot. Pheromone-baited traps may be used to determine time of spraying. In Georgia, trees should be sprayed ten days after the first adult moth is captured (eggs hatch 5 to 10 days after the peak of adult emergence). This must be repeated for each generation. When cool

weather follows peak adult emergence in early spring, spraying should be deferred for about 14 days. Consult Fettig et al. (2000) for optimal spray intervals for numerous locations in the seven southern states east of the Mississippi River.

Systemic insecticides applied to the soil can be effective if there is adequate soil moisture and time for the toxicant to be incorporated by the tree roots. Generally, they should be applied in late winter or early spring.

Certain cultural practices may be used to minimize damage done by this insect. Highly susceptible species of pine should be planted only on sites to which they are well adapted. On poor sites, species of pine resistant to Nantucket pine tip moth should be substituted if possible. Other practices such as close spacing and planting under an overstory may help reduce tip moth populations and subsequent injury to trees.

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## One More Announcement

### Seed, Cone and Regeneration Insect WorkShop

In case you have not heard, the U.S. Forest Service, Forest Health Protection (R8) is hosting the **Seed, Cone and Regeneration Insect WorkShop** at Casino Magic in Biloxi, MS on November 15 and 16, 2000. Topics will focus on the identification, lifecycle and control methods of coneworm, seed bug, tip moth, flower thrips, cone midge, town ants, reproduction weevils, other secondary insects and include a lab practical. Related topics also include trap use for spray timing, FQPA, insecticides and use patterns, and current and future insect research. CEU's for pesticide license renewal may be available upon request. The registration fee is \$110 if registering on or before October 1, 2000 (\$150 if later). The room rates are \$74 / room if reserved before October 14. To make hotel reservations call 1-228-386-4600 ext. 3300 or 1-800-5MAGIC5 ext.3300 (use the codeword: CONE when making reservations). If you have questions about arrangements contact Bill Lowe or Tom Byram by phone at 979-845-2523, fax at 979-845-3272, or e-mail at [wgftip@tamu.edu](mailto:wgftip@tamu.edu).

### Thought You Might Be Interested to Know . . .

#### New Biochemical Pesticide Registered as an Alternative to Methyl Bromide

(Source: Arkansas Pesticide News, July 2000)

EPA registered a new biochemical pesticide, the Harpin protein (Trade Name MESSENGER™) on April 19, as an alternative to conventional, synthetic pesticides such as methyl bromide. This biochemical pesticide is registered for use on field crops, trees, turf, and ornamentals to control a wide variety of fungal, bacteria, and viral pathogens as well as several insect pests.

Unlike most pesticides, the Harpin protein does not act directly on the target pest. Instead, it activates a natural defense mechanism in the host plant, called systematic acquired resistance, that makes the plant resistant to a wide range of fungal, bacterial and viral diseases. The Harpin protein also protects against certain nematodes and fungal diseases that have few effective controls except methyl bromide, a broad-spectrum pesticide that is believed to contribute to stratospheric ozone depletion and have adverse effects on human health.

The Harpin protein is non-toxic and not expected to pose risks to human health or the environment. Because the product is applied at low rates and degrades rapidly in the field, no residues are expected on treated crops. In addition, studies demonstrate no toxicity to humans and no adverse effects on many species of wildlife (e.g., birds, fish, honeybees, aquatic invertebrates, non-target plants and algae). During its experimental use stage, the Harpin protein was used on tomatoes as a component of Integrated Pest Management programs, thereby decreasing the use of conventional pesticides by 70 percent while outperforming them in effectiveness. EDEN Biosciences Corp. of Bothell, Wash., was granted registrations for both the Harpin protein and MESSENGER™ (the only product containing this protein as an active ingredient). For more information, see: [www.epa.gov/pesticides/biopesticides](http://www.epa.gov/pesticides/biopesticides).

#### New Pesticide Use

(Agricultural Chemical News, 5-15-2000 via Chemically Speaking May/June 2000)

FMC has added the control of fire ants to their TALSTAR® (bifenthrin) label.

## On The Lighter Side . . .

### A Fool Proof Way to Keep Mosquitoes OFF You

(Source: OFF! Mosquito Bite Prevention Guide via Georgia Pest Management Newsletter, August, 2000)

The OFF! company sends these pointers about biting mosquitoes:

- Bigger people are often more attractive to mosquitoes because these people are larger targets, and they produce more mosquito attractants, namely CO<sub>2</sub> and lactic acid.
- Active or fidgety people also produce more CO<sub>2</sub> and lactic acid.
- Women are usually more attractive to mosquitoes than men because of the difference in hormones produced by the sexes.
- Dark clothing attracts mosquitoes.
- Some perfumes and other fragrances attract mosquitoes.
- Movement increased mosquito biting up to 50 percent in some research tests.
- Unkempt lawns and dense bushes are favorite resting sites for mosquitoes.
- A full moon increased mosquito activity 500 percent in one study.

So, to avoid mosquito bites, check the personal ads for a tall or big woman who is very fidgety. Give her gifts of dark clothes and cover her with perfume. Ask her to walk around close to you while you stand quite still.

### Label Lingo

(Source: The Label, August, 2000)

A recent discovery prompted a chuckle while conducting an online search for a pesticide label. One of the "hits" in the search was a pesticide named "Counter Assault Bear Deterrent" and is described as "to deter bears from attacking humans." The product has an active ingredient of capsaicin and related capsaicinoids in a concentration of 1.73% (EPA Reg. No. 55541-2). According to the *Farm Chemicals Handbook*, capsaicin originates from hot cayenne peppers. The deterrent is made by the Bushwacker Backpack and Supply Company, Bigfork, MT.

The following quotes are taken directly from the product label:

- This product is a bear attack deterrent which may protect users in some unexpected confrontations with bears but may not be effective in all situations or prevent all injuries.
- Read this entire label before taking this product into areas where bears might be encountered. This product may be used only to deter bears which are attacking or appear likely to attack humans.
- Before taking this product into bear country, read the directions below and familiarize yourself with these procedures.
- If you test-fire this container, make sure that the wind is at your back and depress actuator tab for no more than half a second.
- Do not test-fire in areas inhabited by bears.
- If you have not used this product before, you should obtain a Counter Assault training can and practice with it until you can perform these activities quickly and accurately.
- Aim at face and eyes of bear. Press trigger for three seconds, in order to create a barrier of spray between you and the bear. Stop to evaluate the impact of wind and other factors and adjust your aim if needed before spraying again.
- Do not seek out encounters with bears.