

**P**rogress  
**E**ducation  
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**Vol. 12 No. 4 Dec. 2007**

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

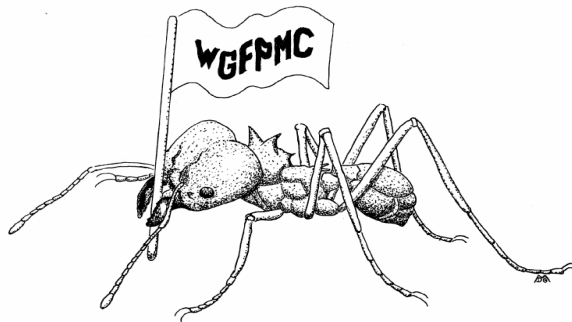
PEST is a quarterly newsletter that provides up-to-date information on existing forest pest problems, exotic pests, new pest management technology, and current pesticide registrations in pine seed orchards and plantations. The newsletter focuses on, but is not limited to, issues occurring in the Western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

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## Announcements:

**Entomology Seminar** - All WGFPNC executive and contact representatives, industry, and TFS foresters are invited to attend the spring session of the East Texas Forest Entomology Seminar tentatively scheduled for April 10 & 11, 2008 or April 24 & 25, 2008. The meeting likely will be held from 1:00 PM until 8:00 PM on Thursday at Kurth Lake Lodge, north of Lufkin, and continue from 8:00 AM until noon on Friday at the College of Forestry and Agriculture, SFASU in Nacogdoches. Registration is \$25, which includes an evening meal. For additional information and/or an agenda, contact Ron Billings at 979/458-6650 or [rbillings@tfs.tamu.edu](mailto:rbillings@tfs.tamu.edu).

## Western Gulf Forest Pest Management Cooperative

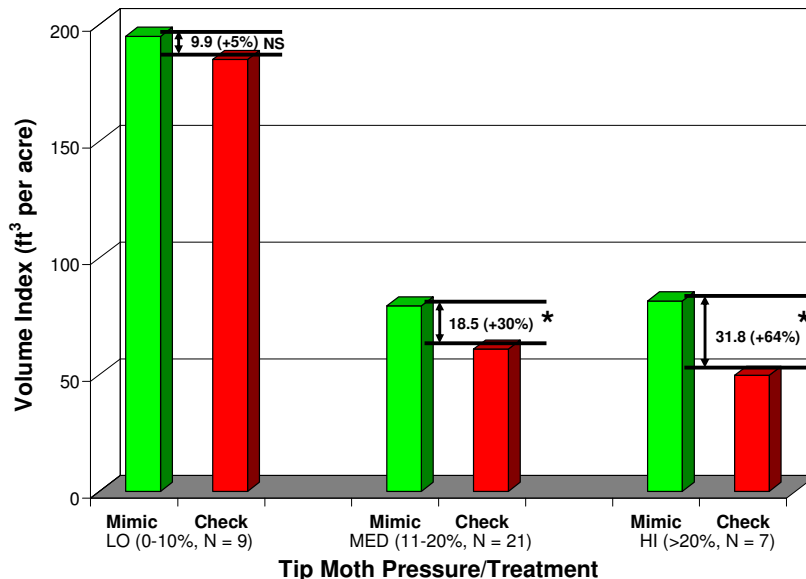


**Texas Forest Service, Forest Pest Management,  
P.O. Box 310, Lufkin, Texas 75902-0310**

## Two New Tip Moth Control Options are Now Available for Use

Recent WGFPNC research has shown that moderate or higher pine tip moth damage (>10% infested tips) can significantly impact the growth of young pine seedlings (Figure 1). The standard control option for protection of seedlings has been to apply foliar sprays prior to each tip moth generation (4-5 generations in the Western Gulf). Unfortunately, the cost and effort required to accurately time more than one spray application after planting is often prohibitive and impractical. We need an economically viable control option.

The SilvaShield™ Forestry Tablet (Bayer Environmental Science, containing 20% imidacloprid and fertilizer) and PTM™ Insecticide (BASF, fipronil) were both registered with the Environmental Protection



**Figure 1.** Differences in 3rd-year volume index (ft³/acre) of protected (Mimic-sprayed) and unprotected loblolly pine exposed to different tip moth pressures (% shoots infested).

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## Tip Moth Control Options(continued from Page 1)

Agency (EPA) in 2007. SilvaShield™ is now registered in all states, except CA. While PTM™ is currently registered in the southern states, including TX, OK, LA, AR, MS, AL, GA, FL, SC, NC, VA, TN and WV. Within the past month both products have become available for purchase. SilvaShield™ is distributed by Helena, Red River Specialties (RRS), and UAP (Table 1). PTM is available from C3M, Helena, ProSource, RRS, and UAP

EPA has restricted the amount of active ingredient applied per acre per year to 450 tablets for SilvaShield™ and 21 fl. oz. for PTM insecticide. The PTM™ formulation allows for adjustments in the amount of active ingredient per tree based on variability in spacing, i.e., fewer trees planted per acre allows for more active ingredient per tree.

The WGFPMP has conducted extensive studies since 2002 on the performance of these insecticides against pine tip moth (see PEST 12.2). Generally, both products performed very well when applied at planting into the plant holes. The SilvaShield™ tablet does not require a special applicator; individual tablets are dropped into each hole by hand. The tablet has been shown to significantly reduce tip moth damage for 18 – 24 months. In contrast, special applicators are needed to apply the liquid PTM™ solution by hand or when machine-planting. The PTM™ Spot Gun (\$77, Figure 2A) and Kioritz soil injector (\$355 - \$462; Figure 2B) are available through different distributors for applications of PTM™ made by hand. In addition, a system has

been developed by Mr. Lane Day, Lufkin, TX, that can be fitted to a C&G machine planter and allows for effective treatment of seedlings as they are being planted (Figure 2C). A similar system is being developed for use on Whitfield planters (more commonly used on the East Coast). The effects of PTM™ treatments can extend through the third growing season (34+ months).

Post-plant applications of products can be consuming; requiring a second pass after planting. In addition, our research has also shown that treatment efficacy can be reduced if the products are applied after planting in the soil adjacent to the seedlings. It appears at this time that, ideally, either product should be applied where the root tips will be growing to allow easy access to the chemical. Research is underway to refine post-plant treatment techniques to improve efficacy.

The two products differ considerably in cost. Price quotes from Red River Specialties indicate that the cost of SilvaShield™ tablets (1,200 per bag) starts at \$240 per bag (actual cost per bag will depend on quantity purchased). This equates to \$90.00 per acre. In contrast, PTM™ Insecticide starts at \$300 per gallon (again the actual cost per gallon will depend on quantity purchased). This equates to only \$49.22 per acre.

The WGFPMP will continue the evaluation of SilvaShield™ and PTM™ for tip moth control in 2008.



**Figure 2.** Hand (Spot Gun (A) & Kioritz (B)) and machine-planter (C) systems for application of PTM insecticide for control of pine tip moth on pine seedlings.

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## Tip Moth Control Options (continued from Page 2)

**Table 1.** Comparison of SilvaShield™ and PTM™ products for Pine Tip Moth Control

| Characteristic                                       | SilvaShield™ Forestry Tablet                                                                                                          | PTM™ Insecticide                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Ingredient(s)                                 | Imidacloprid (20%) + Fertilizer (12N:9P:4K)                                                                                           | Fipronil (9.1%)                                                                                                                                                                                                                                                                                                                                                     |
| Manufacturer                                         | Bayer Environmental Science                                                                                                           | BASF Corporation                                                                                                                                                                                                                                                                                                                                                    |
| Distributors                                         | Helena<br>Red River Specialties (RRS)<br>UAP                                                                                          | C3M<br>Helena<br>ProSource<br>Red River Specialties (RRS)<br>UAP                                                                                                                                                                                                                                                                                                    |
| Cost per container                                   | RRS quote: ~\$240 per bag (contains 1200 tablets); cost depends on quantity purchased.                                                | RRS quote: ~\$300 per gallon; cost depends on quantity purchased.                                                                                                                                                                                                                                                                                                   |
| Restrictions on Amount per Acre                      | 450 tablets per acre per year                                                                                                         | 21 fluid oz per acre per year                                                                                                                                                                                                                                                                                                                                       |
| Chemical Cost per Acre                               | \$90.00                                                                                                                               | \$49.22                                                                                                                                                                                                                                                                                                                                                             |
| Treatments at Planting into Plant Holes or Furrows   | No equipment required; tablets easily applied by gloved hand into plant holes created by dibble bars.                                 | Not easily applied with hand applicator system, but can be applied effectively with a machine planter system:<br><br><b>System for C&amp;G planter</b><br><br>Available on a per order basis; contact Mr. Lane Day (phone:936-240-8294) for a price quote<br><br><b>System for Whitfield planter</b><br>Not currently available; under development by Mr. Lane Day. |
| Duration of At Planting Treatment Efficacy           | 18 - 24 months                                                                                                                        | 24 - 36 months                                                                                                                                                                                                                                                                                                                                                      |
| Post-plant Treatments into Soil Adjacent to Seedling | No equipment available; tablets can be pushed into soil next to seedling with gloved hand; hand applicator system is being developed. | Easily applied with hand applicator systems:<br><br><b>Kioritz Soil Injector</b> (0.8 gallon capacity)<br>\$354.99 thru Amazon.com<br>\$365.00 thru treestuff.com<br>\$374.95 thru treecaresupplies.com<br>\$462.93 + shipping thru Rittenhouse.com<br><br><b>PTM Spot Gun</b> (1.2 gallon capacity)<br>\$77.00 thru feltonmedical.com                              |
| Recommended Quantity per Seedling                    | 1 tablet                                                                                                                              | 1.3 ml PTM + 13.7 ml water = 15 ml dilution per tree                                                                                                                                                                                                                                                                                                                |
| Duration of Post-Plant Treatment Efficacy            | Currently less than plant hole applications; research underway to improve efficacy.                                                   | Currently less than plant hole or machine planter applications; research underway to improve efficacy.                                                                                                                                                                                                                                                              |

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## **Pest Spotlight:**

### **Pine Sawflies (*Neodiprion* spp.)**

Late this summer and early fall, reports began to come in about local outbreaks of redheaded pine sawfly in east Texas and Louisiana. The sawfly was reported to be defoliating younger trees around Lufkin (Angelina Co.) and out in Shelby Co. The outbreaks varied in size from just a few trees to several acres. Accordingly, a description of the biology and control options for three of the more common pine sawflies found in the southern U.S. follows. These are the redheaded pine sawfly, blackheaded pine sawfly, and loblolly pine sawfly.

The **redheaded pine sawfly**, *Neodiprion lecontei* (Fitch), occurs in southeastern Canada and throughout the eastern United States. Its preferred hosts are jack, red, shortleaf, loblolly, slash, longleaf, pitch, and Swiss mountain pines. Eastern white pine, larch, deodar cedar, and Norway spruce also may be defoliated, especially where they are growing in proximity to trees of preferred species.

Full-grown larvae are 4/5 to 1 1/4 inches (20 – 30 mm) long (Figure 3). The head is reddish and the body is yellowish white, with six rows of black spots.



**Figure 3.** Redheaded pine sawfly *Neodiprion lecontei* (Fitch), larvae.

Pupation occurs in early spring and adults appear in a few weeks. Eggs are deposited in tissues of current or previous year's needles; a single female deposits up to 150 eggs. The larvae feed gregariously on new and old needles and also on tender bark of young twigs. Sometimes they completely defoliate a tree, progressing from the top downward, before they reach maturity. When a tree is completely defoliated, larvae may abandon the tree and migrate for distances of several yards in search of new foliage. Full-grown larvae drop to the ground, enter the soil, and spin tough, reddish-brown cocoons in which they

become adults or spend the winter as prepupae. In the South there may be three generations per year; in some northern states and Canada there is only one.

The redheaded pine sawfly is one of the most widespread and destructive of the pine sawflies. It usually feeds on young trees, preferably those from 1 to 15 feet tall. Pines growing under stress on shallow soils, very wet or dry sites, or subject to severe competition from hardwoods, bracken fern, or other vegetation are especially susceptible to infestation, heavy defoliation, and damage. Outbreaks occur frequently throughout the range of this sawfly.

A nuclear polyhedrosis virus formulated for field use at the Canadian Forest Pest Management Institute has proved to be effective in controlling the redheaded pine sawfly. Several species of egg and larval parasites also are effective in helping to control this sawfly.

Several management practices have been suggested for preventing damage in plantations by the redheaded pine sawfly: 1) remove competing vegetation such as hardwoods or dense bracken fern before planting sites to pines; 2) avoid planting on high hazard sites covered with hardwoods or dense vegetation, in frost pockets, or on soils that are extremely wet, dry, or very low in nutrients; and 3) promote early closure of plantations by planting pines with spacing no greater than 6 ft X 6 ft.

The **blackheaded pine sawfly**, *Neodiprion excitans* Rohwer, occurs from Virginia to Florida and west to Arkansas and Texas. It also occurs in Central America. Loblolly and shortleaf pines are its preferred hosts in the United States. Slash and longleaf pines are also attacked but to a much lesser extent.

The full-grown larva is olive green and about 1 inch (25 mm) long (Figure 4). Its head is glossy black, there are two longitudinal black stripes on the dorsum (back), a row of black spots on each side, and a large black spot on the last abdominal segment.

Winter is spent mostly in cocoons, but occasionally in the egg stage or as older larvae. Egg laying begins in March when each female lays one egg per needle

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## Sawflies (Continued from Page 4)



**Figure 4.** Blackheaded pine sawfly, *Neodiprion excitans* Rohwer, larvae.

in individual pockets sawed just above the fascicle sheath of needles.

Newly-hatched larvae are gregarious, with a circle of larvae feeding on a single needle. Older larvae feed in steadily decreasing numbers per needle. Previous year's foliage is preferred during the growing season, but all foliage may be consumed when needle growth ceases in the fall. When a branch or tree is heavily defoliated, the larvae migrate in groups to other branches or trees. Full-grown larvae spin golden-brown cocoons in ground litter or topsoil, but sometimes remain on the tree and spin their cocoons on twigs, needles, or in bark crevices on the lower trunk. There are three to four generations per year in the Gulf region.

Heavy infestations typically develop during the fall in moderate to dense stands of sawtimber, especially when overmature trees are present. Trees stripped of more than 90 percent of their foliage suffer growth loss and may be attacked and killed by *Ips* engraver beetles, the black turpentine beetle, cerambycid beetles, and ambrosia beetles. Several large outbreaks have occurred in Florida and Texas (including one in southeast Texas in 1959, which was aerially sprayed with DDT); however, they subsided after one or two seasons. Starvation and reduced reproductive capacity of the females are among the factors that help bring outbreaks to an end. Several hymenopteran parasites also are important in population control.

The **loblolly pine sawfly**, *N. taedae linearis* Ross., long recognized as a pest of loblolly pine in Arkansas, also is known to occur in Louisiana, Texas, Mississippi, South Carolina, Missouri, Ohio, and

Illinois. As far as known, loblolly and shortleaf pines are its only hosts; loblolly pine is preferred.

Full-grown larvae are dull green and about 25 mm long (Figure 5). There are heavy black stripes along each side and often two lighter stripes below the heavier, black ones.



**Figure 5.** Loblolly pine sawfly, *Neodiprion taedae linearis* Ross, larvae.

Winter is spent in the egg stage. Hatching occurs from early March to early May, depending on location. Young larvae feed gregariously in groups, often encircling the needles about half way from end to end and partially girdling them.

Infested terminals soon take on a reddened appearance. Older larvae feed singly or in pairs and consume the entire needle, leaving short stubs on the branch. They still retain their gregarious habit, however, and move in a group from branch to branch. For the most part, only the older foliage is eaten, but on shortleaf pine the terminal buds and tender bark on the newer growth also are occasionally eaten. Full-grown larvae drop to the ground and spin mahogany-colored cocoons in the litter or topsoil. Pupation occurs in October or November and the adults emerge soon thereafter. Eggs are laid in slits cut into the needles, usually 2 to 10 per needle. Each female lays from 90 to 120 eggs, often all in needles on one twig.

This sawfly is found chiefly on medium-size or larger trees in forest stands. Several outbreaks have been recorded. One, which lasted four seasons, spread over an area of about 3 million acres in Arkansas before subsiding. Trees suffering spring defoliation exceeding 75 percent per tree have shown an average net growth loss of 51 percent the first year following defoliation and 29 percent the second year.

Important natural control factors are a polyhedrosis virus disease, cold, rainy weather in the spring, and two species of larval parasites.

## Thought You Would Be Interested To Know . . .

### The Pest of Both Worlds

The Western Gulf Forest Pest Management Cooperative (WGFPMP) recently held its annual contact meeting in Natchitoches, LA on Dec. 5-6. The WGFPMP addresses pest problems in seed orchards and young pine plantations and is administered by TFS. It currently has ten member companies.

Twenty-two representatives from the coop companies and organizations, as well as **Brad Guice**, **Wayne Ducota**, **Jimmy Pongetti**, and **Ray Erwin** with BASF and **Nate Royalty** with Bayer Environmental Science, toured the latest developments in pest management for pine tip moths, cone and seed insects, bark beetles, and leaf-cutting ants. They also discussed pest related issues, pine bark beetles (presented by **Joe Pase**, Entomologist II—Lufkin), invasive species (presented by **Steve Clarke**, Entomologist, USDA Forest Service—Lufkin), loblolly pine decline (presented by **Roger Menard**, pathologist, USDA Forest Service – Pineville) and the status of WGFPMP research studies and accomplishments (presented by **Don Grosman**, WGFPMP Coop Coordinator—Lufkin).

The following TFS employees organized and conducted the field tour: **Don Grosman**, **Bill Upton** staff forester—Lufkin, **Jason Helvey** research specialist—Lufkin, and **Billi Kavanagh** and **Jeffrey Childers**, seasonal technicians—Lufkin. We greatly appreciate the time and efforts of all participants for helping to make this a successful meeting. (Source: Ron Billings, The Arbor Reader, Dec. 14, 2007)

### EPA Issues One-Year Registration for Soil Fumigant Iodomethane

The Environmental Protection Agency (EPA) has approved a one-year registration of iodomethane (methyl iodide) under highly restrictive provisions governing its use. Iodomethane can serve as an alternative to the ozone-depleting pesticide methyl bromide. The risk assessment process for iodomethane has been one of the most thorough analyses ever conducted on a new pesticide. It has incorporated state-of-the-art methods and extensive chemical-specific toxicology and exposure data. The agency's assessment carefully evaluated the potential for cancer and special sensitivities to the most vulnerable populations. The agency also paid particular attention to potential exposures of those who live, work, or spend time in areas near fields where iodomethane might be used.

The risk-assessment techniques, protocols governing generation of toxicology studies, and exposure evaluation methods used to support the evaluation of iodomethane have been peer-reviewed by agency scientists, the independent Scientific Advisory Panel or both. By using a thorough evaluation process, the agency concluded that there are adequate safety margins and the registration of iodomethane does not pose significant risks.

On September 25, EPA received a letter signed by 54 scientists who oppose the registration of iodomethane as a soil fumigant, citing potential human health and environmental concerns, and requested additional peer review. EPA has discussed their assessment with some of the signatories and sent a letter to inform the scientists of the rigorous science used to support EPA's decision.

Iodomethane can be used as a pre-plant soil fumigant to control plant pathogens, nematodes, insects, and weeds on strawberries, tomatoes, peppers, ornamentals, turf, trees, and vines. More information on iodomethane is available on EPA's Web site at [http://www.epa.gov/pesticides/factsheets/iodomethane\\_fs.htm](http://www.epa.gov/pesticides/factsheets/iodomethane_fs.htm).

Source: U. S. Environmental Protection Agency's Office of Pesticide Programs, EPA Pesticide Program Update, October 5, 2007 via North Carolina CES Pesticide Broadcast, Oct. 12, 2007)

### Bayleton

This fungicide is going through registration review. EPA has worked with Bayer and Bayer has decided to remove all residential turf uses from the label. Golf course uses will be retained but only to turf that is less than 2.5 inches in height. All outdoor uses (ornamental flowers, shrubs and trees) will remain on the label as will greenhouse use on ornamental flowers, shrubs and trees. Sod uses will remain with a 17-day post application pre-harvest interval. EPA Triadimefon RED, *Visit us on the web at [pested.okstate.edu](http://www.epa.gov/pesticides/factsheets/triadimefon_red.htm)* [http://www.epa.gov/pesticides/factsheets/triadimefon\\_red.htm](http://www.epa.gov/pesticides/factsheets/triadimefon_red.htm) (Source: Oklahoma CES Pesticide Reports, Dec. 2007)

## **A Little Humor Goes a Long Way:**

### **Darwin Awards**

(Named in honor of Charles Darwin, the father of evolution, the Darwin Awards commemorate those who improve our gene pool by removing themselves from it. Below are a few stories that I thought foresters and entomologists could appreciate.

More stories can be found at [www.darwinawards.com](http://www.darwinawards.com))

#### Hornet Challenge

##### **2000 Darwin Award Nominee**

(27 July 2000, Phnom Penh) A motorcycle taxi driver challenged his neighbor to stand beneath a hornets' nest, while two men pelted it with stones. The 53-year old man should have known better, but he had a local reputation as a strong man' to uphold. He stood beneath the nest and the pelting commenced. The man endured the pain of countless stinging hornets before expiring from the toxic injections. Apparently he was not as strong as he thought.

#### Fire Ants

##### **2001 Darwin Award Nominee**

14 May 2001, New York) A woman was found burned to death, her body still on fire on a grassy area adjacent to her home in Rome. A lighter and a melted gas can were discovered nearby. After months of investigation, police turned up no evidence of foul play, and believe her demise was due to her habit of dousing anthills with gasoline while she smoked cigarettes.

#### Bees 1, Humans 0

##### **2002 Darwin Award Nominee**

(23 September 2002, Brazil) A farm keeper from São Paulo decided to remove a beehive from his orange tree. He didn't know exactly how to proceed, but he knew the hive should be burned, and he knew bees sting. So he protected his head with a plastic bag sealed tightly around his neck, grabbed a torch, and went off to fight the bees.

His worried wife went to look for him a few hours later, and found him dead. However, it wasn't the bees that killed him. The plastic bag had protected him from smoke, stingers, and. oxygen! He had forgotten to put breathing holes in the bag.

#### Kills Bugs Dead

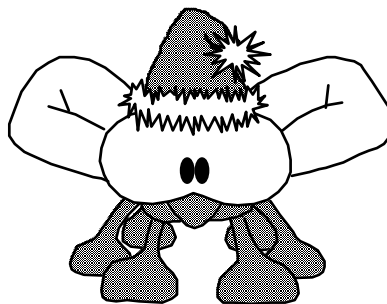
##### **2004 Honorable Mention WINNER**

(29 April 2004, Brushy Fork, West Virginia) Alfred, 63, had trouble with termites at home. He had heard that natural gas was dangerous, and figured it would be a good, low-cost way to fumigate his house. So he shut the doors and windows, turned on the gas, and spent the night in a nearby camper trailer with his wife. The next morning he stepped out of the trailer, took a breath of the crisp, cool air, and strode over to his house.

When he opened the door, the slight spark from the latch ignited the cloud of natural gas that had accumulated in his home. The force of the explosion blew him off the porch and into a nearby creek, knocked out the town's telephones and electricity, and blew the doors off a church. It rattled windows and nerves six miles away.

Alfred was evacuated by helicopter with severe burns to the burn unit at the Cabell-Huntington Hospital. His house was uninsured. It is presumed that the fumigation was effective.

**The moral of these stories – THINK BEFORE YOU LEAP!**



**Santa Bug says**

**“Wishing Ya’ll Pest-Free Wishes for a Great Holiday Season and a Happy New Year!!!!”**