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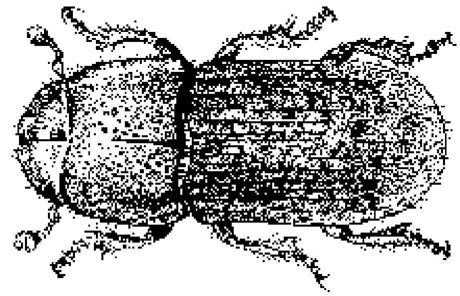
Quarterly Newsletter on Western Gulf Forest Pest Management Issues

Western Gulf Forest Pest Management Cooperati



Southern Pine Beetle, *Dendroctonus frontalis* Zimmermann

Texas Forest Service, Forest Pest Control Section,
P.O. Box 310, Lufkin, Texas 75902-0310

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:

25th Anniversary East Texas Forest Entomology Seminar. All WGFPMC executive and contact representatives, industry, and TFS foresters are invited to attend the 25th Anniversary of the East Texas Forest Entomology Seminar scheduled for April 21-23, 1999. The meeting will begin on Wednesday with a reception and crawfish boil at the Kurth Lake Lodge. Technical sessions on Thursday and Friday, to be held at the Arthur Temple College of Forestry at SFASU in Nacogdoches, will focus on what the future holds for forest health protection. Field tours also are planned for Thursday afternoon. Registration is $30. For additional information and/or an agenda, contact Ron Billings at 409/639-8170 or tfs.pcs@inu.net.

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Guthion®: Latest on Request to Remove the Insecticide Label

Many of you have likely heard the bad news: that we may be losing most or all Guthion® (azinphos-methyl) labels. The rumors started flying when the Federal Register (Jan. 27 issue) listed Bayer as requesting cancellation of all Guthion® products, including the technical material. However, the University of Florida Extension Service's "Chemically Speaking" (Feb. '99, p. 5) indicates the registrant's request is only for three formulations of Guthion®: Guthion® 2S, Guthion® 50WP, and Guthion® 3F. Bayer may be eliminating these formulations because they have not been used much, were too expensive to manufacture, or had other problems. Guthion® 2S is an emulsifiable concentrate, but it precipitates out, if allowed to freeze. Guthion® 50WP is a 50% wettable powder, and the trend has been away from products with such a high concentration. Guthion® 3F is the flowable formulation. F and WP formulations generally are more expensive and more abrasive in spray systems.

There is some indication that two other formulations, Guthion® 2L and Guthion® 35WP, will be available for seed orchard use, at least for the short run. Guthion® 2L has generally been the formulation of choice by orchard managers because it was the formulation tested in Southwide trials, it was the cheapest , and because it stored the best. Some orchard managers have used Guthion® 35WP. Wettable powders (and flowables) tend to be less phytotoxic because they do not contain the solvents found in EC formulations. It has been recommended by Dr. Gary DeBarr, USFS, that orchard managers use Guthion 35WP for applications that might coincide with receptive female flowers. Hopefully, Guthion® is not gone yet.

The way the EPA system works is that after the registrant has made a request for voluntary cancellation of a product, there is a 180 day period for withdrawal of the petition by the registrant. If the withdrawal request is not made, at the end of the 180 day period

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EPA will issue orders canceling the registrations. Registrants may continue to distribute and sell existing stocks for one year after the date the cancellation request was received.

The bottom line for Guthion® is that the product has been under close scrutiny for several years after allegedly having caused some significant fish and bird kills in both the sugar cane growing areas of Louisiana and tomato fields in South Carolina. There may be other areas of concern also. This is one way Bayer can reduce the risk of organophosphate insecticides, in order to comply with the Food Quality Protection Act. We (industry/TIP/state/federal) have the option of petitioning Bayer to keep the seed orchard uses alive, but it really may not be a viable option since the market is so small. Dr. John Taylor, USFS, has plans to talk to Bayer representatives about our options, but it looks like we will need to look for other organophosphates if we think we still need them to manage seed and cone pests. Everyone apparently agrees that there should not be any azinphos-methyl supply problems this growing season; the problem is what happens in 2000 and beyond. Gowan, the manufacturer of Imidan® (phosmet), is submitting requests for forestry uses. There appears to be growing support to conduct rate trials and ultimately register Imidan® for cone and seed insect control in seed orchards and pine tip moth control in plantations.

<u>The latest word...</u>
A February 26 email message from John Taylor stated: "What I heard this time is that Bayer **<u>is</u>** going to cease manufacturing their own azinphos-methyl; however, they **<u>are</u>** going to begin buying an Israeli azinphos-methyl product called "Makhteshim" and use it to formulate some of the Guthion® line of products". Dr. Taylor will be trying to discover which products they (Bayer) may be continuing to market. In the mean time, no one can say with any certainty how long the Guthion® labels will remain in the marketplace, which is actually probably not significantly different from the situation we have always had to live with. I'll keep you posted as things progress. Don.

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Summary of 1998 WGFPMC Research Projects

In 1998, three primary research projects - the leaf-cutting ant control study, systemic injection study, and reproduction weevil impact study - were continued from 1997. A fourth project, an intensive forestry survey, was initiated in the fall of 1998. A summary of the results for the leaf-cutting ant and systemic injection studies, as well as Pounce® trials, is presented below. Results for the weevil study and intensive survey will be presented in the next PEST newsletter (June 1999).

Texas Leaf-cutting Ant Control Study

The Texas leaf-cutting ant (TLCA), *Atta texana* (Buckley), is a serious pest in first- and second-year pine plantations in east Texas and west-central Louisiana. With the scheduled withdrawal of methyl bromide by 2005, a study was initiated in 1996 to evaluate several alternative products for their effectiveness in halting ant activity.

Trials conducted in 1996 and 1997 showed that a bait containing sulfluramid was highly effective in halting leaf-cutting ant activity. Additional trials were conducted during the winter of 1997-98 and summer of 1998 to determine the lowest rate that still provides 100% reduction in ant activity during each season. During the summer we also compared the effectiveness of applications of bait applied by spreader versus bait in bags.

Sixty-eight (winter of 1997-98) and 99 TLCA colonies (summer of 1998) were treated and monitored in Jasper and Newton counties, TX on land owned by Temple-Inland, Louisiana-Pacific, and/or Champion. The level of TLCA activity was evaluated 2, 8, and 16 weeks post-treatment for each colony and compared to activity prior to treatment.

During the winter trials, all but the lowest rate of sulfluramid (2 g/m^2) significantly reduced ant activity after 2 weeks compared to the check colonies. However, all rates of sulfluramid baits were ultimately successful in completely halting ant activity in 100% of the treated colonies after 16 weeks (Fig. 1).

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Research Projects (Continued from Page 2)

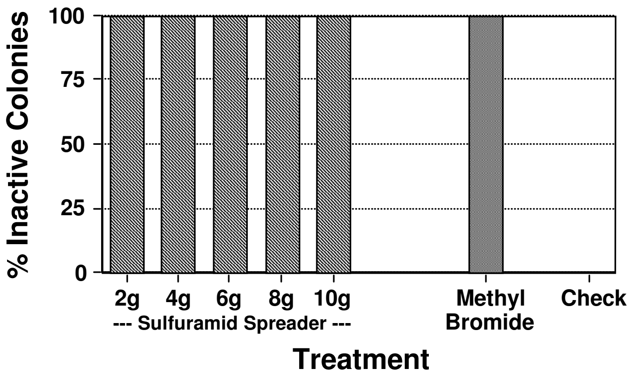

Figure 1. Percent of Texas leaf-cutting ant colonies inactive after 16 weeks post-treatment (winter 1997-98).

During the summer trials, all five spreader treatments (2, 6, 8, 10, and 12 g/m^2) significantly reduced ant activity after 2 weeks compared to the check colonies. However, only the three highest rates (8-12 g/m2) were 100% effective in completely halted ant activity after 16 weeks (Fig. 2).

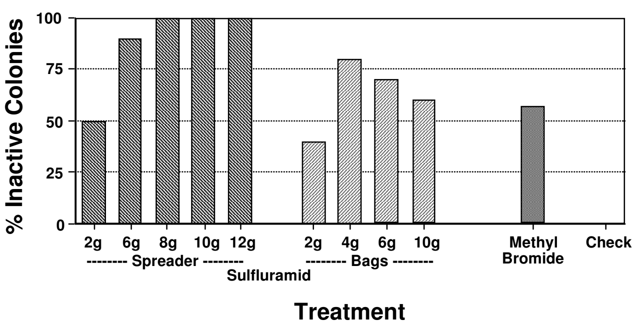

Figure 2. Percent of Texas leaf-cutting ant colonies inactive after 16 weeks post-treatment (summer 1997).

Winter applications of sulfluramid at less than 8 g/m^2 were more effective than summer applications; even the 2 g/m^2 application rate was 100% successful during the winter (Fig. 1). The better success of winter applications appears to be related to the lower availability of plant material, thus making the bait more attractive to the ants. However, summer applications of sulfluramid were 100% successful at 8 g/m^2. This indicates the potential for year around control.

Sulfluramid bait sealed in bags would have several advantages over loose bait applied by spreader. First, bait bags would reduce exposure of the applicator to the active ingredient. Bait bags would allow for easier treatment of colonies. In addition, because the bait readily disintegrates when it becomes wet, bait bags would lengthen the time the bait is available to the ants. Unfortunately, the preliminary summer trial showed that the four sulfluramid bag treatments were somewhat less effective compared to the spreader treatments, but the three higher rates (4, 6, and 10 g/m^2) still halted activity in 60% or more of the treated colonies.

In experimental trials to date, the sulfluramid bait continues to be the most effective alternative to methyl bromide. However, additional trials are warranted for the winter and summer of 1999 to compare the effectiveness of bait dispensed by spreader versus bags.

Systemic Injection Study

Trials conducted by the WGFPMC in 1997 showed that injection of systemic insecticides using the Wedgle Tip™ injector (ArborSystem L.L.C.) could significantly reduce coneworm and seed bug damage compared to checks. However, problems with the plugs used to keep the insecticide in the trees may have reduced the potential success of several of the treatments.

Field trials were continued in 1998 to evaluate the potential of a new screw-type plug design for the Wedgle Tip™ injector. In addition, field trials were conducted to evaluate applications of systemic insecticides into loblolly pine trees and efficacy of trunk injections of acephate, imidacloprid, and abamectin in reducing losses to coneworms and seed bugs. Two new systemic insecticides - emamectin benzoate and thiamethoxam - also were tested.

Initial trials in March, 1998 revealed that the new screw type plug reduced the incidence of leakage of water and insecticide solution around the plug. Subsequently, an efficacy trial was conducted in 1998 at the Texas Forest Service Magnolia Springs Seed Orchard in a block containing drought-hardy loblolly pine. Nine ramets from each of 5 loblolly clones were selected. Injection treatments were applied in mid-April and July either by the Wedgle Tip™ Tree Injection System or by drilling 1.3 cm holes (13 cm deep) into the trunk of a sample tree at a 60-70 degree angle. Applications were spaced at 10 cm intervals around the circumference of the tree. The nine treatments consisted of:

1) Acephate 60% (20 ml/drill hole) in Apr & July
2) Acephate 60% by Wedgle Tip (WT) at 2 ml/inj. pt. in April & July
3) Abamectin 1.9% by WT at 2 ml/inj. pt. in April & July

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4) Emamectin benzoate 1% by WT at 2 ml/inj. pt. in April & July
5) Emamectin benzoate 4% by WT at 2 ml/inj. pt. in April & July
6) Thiamethoxam 5% by WT at 2 ml/inj. pt in April & July
7) Imidacloprid 5% by WT at 2 ml/inj. pt in April only
8) Imidacloprid 5% by WT at 2 ml/inj. pt) in April & July
9) Check

The effects of treatments on 2nd-year cones was checked by evaluating damage on picked cones from each tree. Seed lots, from a subsample of apparently healthy cones, were radiographed to measure the extent of seed bug damage.

Insecticide injections went well in April, but drought conditions during the summer months caused problems with injections made in July. The drought apparently caused the trees to shut down and inhibited the uptake of the injected insecticides. Although the screw plugs prevented leakage around the plugs, the insecticide solution often leaked out of cracks in bark fissures.

Evaluations of picked cones showed moderate levels of damage (23.9%) on check trees. Overall damage on cones due to coneworm was significantly reduced by emamectin benzoate (4%, Wedgle Tip), acephate (60%, drill hole), and emamectin benzoate (1%, Wedgle Tip) by 59.8%, 58.1%, and 44.5%, respectively, compared to the checks (Fig. 3).

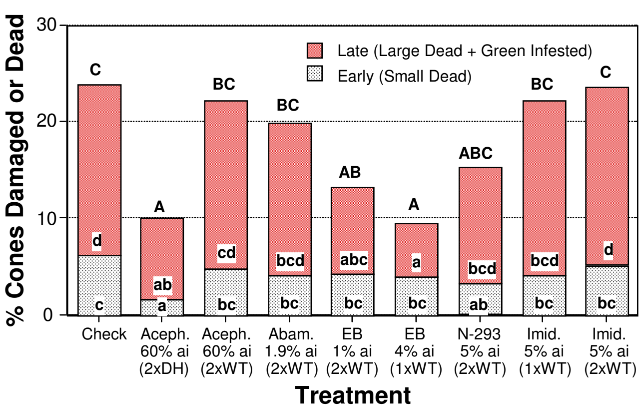

Figure 3. Early and late coneworm infestation in picked cones. Bars with the same letters are not significantly different at the 10% level (Fisher's Protected LSD).

Radiographs of seedlots revealed that seed bug damage on check trees averaged 13.2% (Fig. 4). Treatments that significantly reduced seed bug damage included acephate (60%, drill hole), acephate (60%, Wedgle Tip), thiamethoxam (5%, Wedgle Tip), and imidacloprid (5%, 2 X Wedgle Tip) (Fig. 4). Incidence of damage was reduced by 80.3%, 50.5%, 55.6%, and 69.4%, respectively.

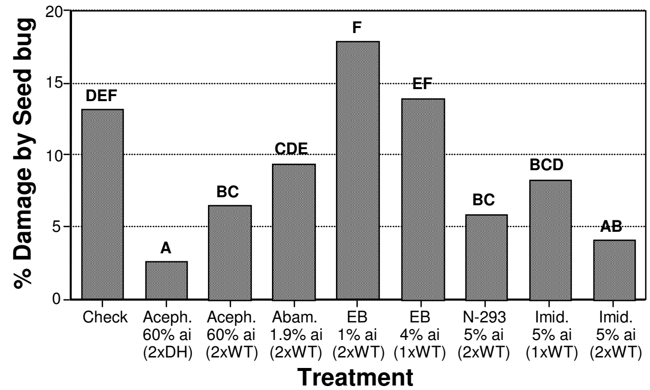

Figure 4. Loblolly pine seed damaged by seed bugs. Bars with the same letters are not significantly different at the 10% level (Fisher's Protected LSD).

The persistent problems with keeping the insecticide in the tree suggest that the Wedgle Tip™ injection system may have only limited potential as an alternative to foliar or drill hole applications. The 1998 data further suggest that higher volumes of insecticides may be needed to get the desired 80% reduction in coneworm and/or seed bug damage. A new pressurized injector is currently being evaluated for its potential to deliver a higher volume of insecticide into the tree. A field trial was initiated in the fall of 1998 to evaluate the effects of high volume injections of emamectin benzoate alone, imidacloprid alone, and a combination of emamectin benzoate and thiamethoxam.

Pounce® Trials

In 1997, Texas received a 24C label allowing application of Pounce® (permethrin) to pine seedlings prior to lifting for protection against pine reproduction weevils. The following summarizes some recent research conducted by the WGFPMC in the laboratory and field to determine the longevity of Pounce® protection against weevils and to evaluate the effectiveness of Pounce® in the field in protecting seedlings against weevils and leaf-cutting ants.

Laboratory Trial - Weevils

A laboratory colony of pales weevil, *Hylobius pales*, and pitch-eating weevil, *Pachylobius picivorus*, was established during the winter of 1997-98. Two hundred loblolly pine seedlings (100 Pounce®-treated and 100 untreated) were obtained from the TFS Indian Mound Nursery in mid-February, 1998. Seedlings were treated prior to lifting on February 2 with Pounce® 3.2 EC per label recommendations (2 qt / 100,000

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seedlings). All seedlings were replanted in 1/2 gal pots and placed outside for exposure to the elements. The seedlings were watered once a week or as needed.

At two-week intervals for the first three months and once a month thereafter for four additional months, 32 weevils were collected from the colony containers. The weevils were starved for 24 hours. After 24 hours, eight seedlings (four treated, four untreated) were selected and pulled from their pots. The root ball was clipped off at ground level and all lateral branches were removed. The remaining seedling stem was clipped into four equal lengths. Each section was placed in a moistened paper sleeve in a petri dish containing a single weevil. Each dish/weevil was examined every 24 hours for 3 days and the number of sick or dead weevils was recorded. The amount of weevil feeding on each seedling section also was measured in mm^2 at 24 hour intervals.

Results showed that, overall, Pounce® caused better than 50% weevil mortality even after exposure to seedlings treated nearly four months earlier (Fig. 5). However, it became evident

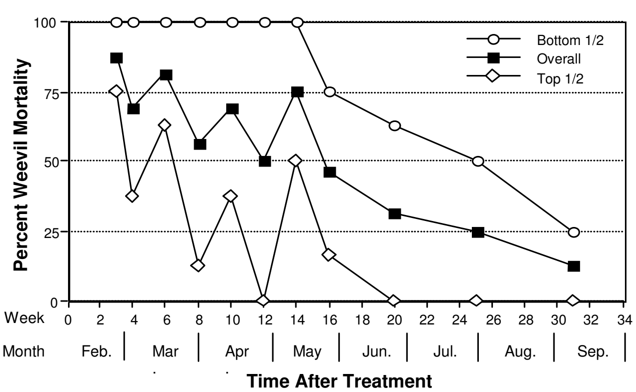


Figure 5. Reproduction weevil mortality after exposure to Pounce®-treated loblolly pine seedling sections.

early in the experiment that the top half of the seedlings had not been treated as well with Pounce® as had the lower half. By separating mortality data for the two seedling halves, it is clear that when seedlings are thoroughly covered with Pounce®, as was the bottom half of the seedlings, treated seedlings can be protected from weevils for as long as six months post-treatment. In addition, measurement of feeding areas on treated and untreated seedling sections showed that Pounce® is capable of significantly reducing the amount of feeding damage for eight months or longer (Fig. 6).

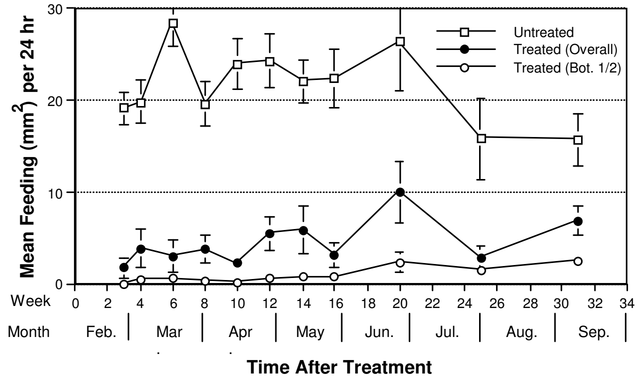
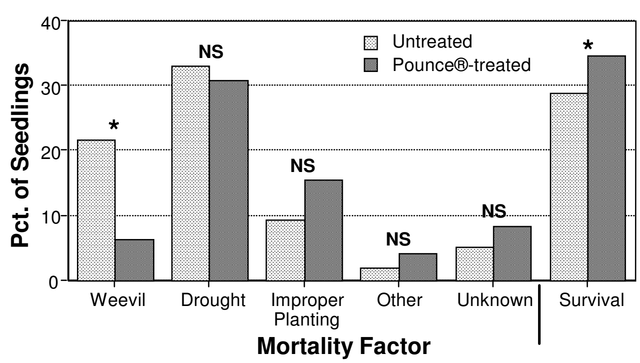


Figure 6. Reproduction weevil feeding on Pounce®-treated and untreated loblolly pine seedling sections.

<u>Field Trial - Weevils</u>

Thirty-six plantation tracts were selected during the late winter of 1998. Twenty-one sites were replanted with untreated loblolly pine seedlings and 15 with Pounce®-treated seedlings. Once each site was planted, a survey of 100 marked pine seedlings (10 plots, each containing 10 flagged seedlings) was conducted at least three times (May, July, and November) to determine the percent mortality attributed to weevils and other causes.

Total mortality on 21 untreated sites average 71.1% with a range of 5 to 92%. Drought and weevils were the major causes of mortality, accounting for 33.1% (range: 2 to 83%) and 21.6% (range: 0 to 65%), respectively (Fig. 7). In contrast, Pounce®-treated sites had significantly less weevil-caused seedling mortality (6.3%). Although overall survival of seedlings on treated sites was still very low, the planting of treated seedlings significantly increased survival compared to untreated sites (Fig. 7).



= Significantly different at the 10% level; NS = not significant

Figure 7. First-year loblolly pine mortality and survival on east Texas sites planted with untreated (N = 21) and Pounce®-treated (N = 15) seedlings in 1998.

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Field Trial - Leaf-cutting Ants

One hundred loblolly pine seedlings were planted on each of five active leaf-cutting ant colonies (two in Jasper Co. and three in Nacogdoches Co.) between February 19-22, 1999. Ten seedlings were planted along each of ten rows at 4 foot spacing. The seedlings were tagged and numbered sequentially. Even-numbered seedlings were left untreated. Odd-numbered seedlings were sprayed to runoff with Pounce® 3.2 EC at a rate comparable to that applied in the nursery (10.65 oz/gal). The condition of the seedlings has been monitored weekly for the past 4 weeks.

After 4 weeks, 242 of the 250 untreated seedlings (96.8%) have been completely defoliated by the leaf-cutting ants. Surprisingly, none of the 250 Pounce®-treated seedlings (0%) were defoliated at all. We will continue to monitor the seedlings periodically through the remainder of 1999 to determine if any of the defoliated seedlings recover and if the Pounce® treatment is capable of protecting the seedlings through the winter of 1999-2000.

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More Announcements

NAPIAP Proposals Funded for 1999: Drs. Don Grosman and Ron Billings, Texas Forest Service, recently were awarded two one-year grants of $15,000 and $16,000 by the National Agricultural Pesticide Impact Assessment Program (NAPIAP) to 1) continue Texas leaf-cutting ant research to determine the optimal application rates of sulfluramid as an alternative to methyl bromide which is scheduled to be phased out by 2005, and 2) evaluate the effects of systemic injections of emamectin benzoate, imidacloprid, and thiamethoxam for control of cone and seed insects in seed orchards.

The annual Southern Pine Beetle Prediction Survey is currently underway in most areas of the southern United States. The prediction results for the Western Gulf region should be available by mid-April and will be presented on the Texas Forest Service web site at http://txforestservice.tamu.edu/.

Pesticides and the Forest Environment. April 13-15, 1999. Fredonia Hotel, Nacogdoches, TX. Hosted by the Arthur Temple College of Forestry, Stephen F. Austin State University. Contact: Denise Munday, P.O. Box 6109, Nacogdoches, TX 75962, Ph: (409) 468-3301, Fax: (409) 468-2489. Registration is $140.

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Pest Spotlight

Pine Sawflies, *Neodiprion spp.*

In the beginning of March, a report came into the TFS Pest Control Section of the beginnings of an outbreak of blackheaded pine sawfly in the Lost Pines area in Bastrop County. The sawfly is reported to be defoliating older trees near Rosanky, south of Bastrop. The outbreak currently covers 10 hectares. A similar outbreak also began in Bastrop in 1981 and eventually expanded to three additional counties. I thought this would be a good time to describe the biology and control options for three of the more common pine sawflies found in the Western Gulf region, including the blackheaded pine sawfly, redheaded pine sawfly, and loblolly pine sawfly.

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

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Sawflies (Continued from Page 6)

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; however, they subsided after one or two seasons. Starvation and reduced reproductive capacity of the females are among the factors that help bring outbreak to an end. Several hymenopteran parasites also are important in population control.

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 20 to 30 mm long. The head is reddish and the body is yellowish white, with six rows of black spots.

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 0.3 to 4.6 m 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 1.8 by 1.8 m (6 ft X 6 ft).

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, southeast 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. There are heavy black stripes along each side and often two lighter stripes below the heavier, black ones.

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.

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Sawflies (Continued from Page 7)

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 1.2 million hectares 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 larval parasites.

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Thought You Might Be Interested to Know . . .

"Bee" on the Lookout for Feral Bees in East Texas

(from Texas AgriNEWS, March 8, 1999)

Due to the varroa mite, a parasite that kills or deforms honeybee larvae, approximately 90 percent of the wild bee colonies in east Texas have been eliminated, according to Dr. Rodney Halloway, an entomologist with the Texas Agricultural Extension Service. While the mite has nearly wiped out feral colonies, it also is decimating domesticated hives both in the United States and Europe.

Those wild bees that have survived may possess some degree of genetic resistance to the varroa mite, said Holloway, speaking to 140 people attending a recent pesticide applicator recertification conference at the Texas A&M University Agricultural Research and Extension Center at Overton. Finding genetic strains of wild or "feral" honey bees that are resistant to the varroa mite is essential to the raising and care of bees for commercial or agricultural programs. Honeybees not only produce honey for human consumption but pollinate many important east Texas crops, including, cantaloupes, cucumbers, pumpkins, pears, apples, and watermelons (that are sometimes interplanted with pine).

Watermelons are particularly dependent upon pollination. Each watermelon blossom requires about 1000 grains of pollen, or about eight bee visits, to be pollinated. Just as critical, a blossom is only open during one day of the growing season. Without pollination, the melon will grow to about 1-1/2 inches long and abort. If it's not fully pollinated, the watermelon may be undersized or misshapen.

Fortunately for east Texas, Apistan strips, the only chemical control for varroa mites, still rids hives of the pest. But care must be taken to prevent development of mite populations resistant to the strips as has been case with a related chemical in the Southeast. If Texas varroa mites become resistant to Apistan, then it would be "a very serious situation", said Holloway, because there is no other product available to control the parasite. If this happened, then finding genetically resistant lines in the feral bee population might become essential to a domestic honeybee breeding program. Anyone finding a colony of wild honeybees in Texas is encouraged to contact Dr. Halloway at (409) 845-3849.

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SAFETY FIRST!!!!

Before using any pesticide, READ THE LABEL and follow indicated application procedures and safety precautions.

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