Texas Cooperative Extension
TEXAS PECAN PEST MANAGEMENT NEWSLETTER

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Anyone wanting this newsletter by email please send me a note at the above address and I'll put you the list. If any one has had an address change from a rural route box number to a 911 address please let me know so I can make the change. I have had to drop several producers because of returned letters with incorrect/old addresses.

GENERAL

Overall I think we still have a pretty good crop. Pecan scab has been a problem in some areas most of the season due to all of the rain. Concerns this time of year include insects - pecan weevil, hickory shuckworm, stink bugs/leaffooted bugs and black pecan aphids; wildlife management- crows and squirrels and getting orchard floors ready for harvest.

INSECTS

Black Pecan Aphid: I've received one report of black pecan aphid activity this week. Although BPA can be found all season it is generally a late season pest. The treatment threshold for black pecan aphids is when populations reach an average of 3 per compound leaf (both adults and immatures). Adults and immatures can be found on both the upper and lower surfaces of the leaflets and watch for infestations to begin in the interior portion of the tree. Feeding by both immatures and adults cause the characteristic yellow rectangular blotches. Feeding damage will result in early or premature defoliation. From the literature I have read the worst time for a pecan to defoliate is during September. This late summer/ fall time of year is very important in that pecans are trying to fill out this years set of nuts plus trying to store up energy for next year. It is important that trees retain their foliage up to first frost.

Insecticides for BPA include: dimethoate (Dimethoate E267) @ 1 pint per acre; imidacloprid (Provado 1.6F) @ 7 - 14 oz per acre; chlorpyrifos (Lorsban 4E) @ 2 - 4 pints per acre; pymetrozine (Fulfill) @ 4.0 oz per acre; thiamethoxam (Centric 40WG) @ 2.5 oz per acre and malathion .(Malathion 57EC) @ 1-2 pints per 100 gallons.

Pecan weevil: The first insecticide application for pecan weevil should have gone out by this time. I included a section on pecan weevil in my last newsletter and will rerun it. Pecan weevil is a very important insect and it can be managed.

The objective of the pecan weevil management program is pretty simple - that is, prevent female weevils from ovipositing in nuts. In order to do this we recommend you do three things: 1) monitor kernel development to know when pecans are susceptible to oviposition; 2) use some type of adult emergence trap (wire cone, pyramid, Circle) to monitor adult activity and 3) use carbaryl insecticide.

Adult female pecan weevils are not able to successfully oviposit in pecans until the kernel is in the late gel stage/early dough stage. Pecans mature from the tip end towards the stem end so always check the tip end for the most mature kernel development.

The first insecticide application should go out around August 20 or when kernel development of the earliest maturing varieties you want to protect reach the late gel stage. This initial treatment will go out regardless if you have collected adults in your traps. A second application should go out 10 days later if you are collecting adults in traps. Continue to monitor traps up to harvest. A pecan

weevil management program will take at least 2 treatments but sometimes additional applications will be needed.

Our recommended insecticides for pecan weevil include carbaryl (Sevin 80S, Sevin 50WP) and cypermethrin (Fury 1.5ES). Do not add any binding or sticking agent with your spray. For pecan weevil control you do not want your insecticide bound to the foliage. **Note**: Fury is being fazed out and replaced with a similar product called Mustang Max. These two products are almost identical, however, the active ingredient in Fury is 1.5 lbs AI per gallon and Mustang Max is only 0.8 lbs AI per gallon and the labeled rates per acre for both products are almost identical.

Pecan weevil is not distributed across all of Texas and we are always watching for new infestations and county records. To date our distribution records of pecan weevil infesting pecan in Texas include the following counties: Anderson, Angelina, Archer, Bandera, Baylor, Bell, Blanco, Bosque, Bowie, Brown, Burnet, Callahan, Camp, Cass, Cherokee, Childress, Clay, Coke, Coleman, Collin, Comanche, Concho, Cooke, Coryell, Crockett, Dallas, Dawson, Delta, Denton, Dickens, Duval, Eastland, Edwards, Ellis, Erath.

Falls, Fannin, Fisher, Foard, Franklin, Freestone, Frio, Glasscock, Gillespie, Grayson, Gregg, Hall, Hamilton, Hardeman, Harrison, Haskell, Henderson, Hill, Hood, Hopkins, Howard, Hunt, Irion, Jack, Jim Hogg, Johnson, Jones, Kaufman, Kendall, Kent, Kerr, Kimble, King, Knox, Lamar, Lampasas, Leon, Limestone ,Llano, Lubbock, McCulloch, McLennan, Madison, Marion,Martin, Mason, Menard,Midland Mills, Mitchell, Montague, Montgomery, Morris, Nacogdoches, Navarro, Nolan, Palo Pinto, Parker, Polk, Rains, Red River, Regan, Rockwall, Runnels, Rusk.

Sabine, San Augustine, San Saba, Schleicher, Schackelford, Smith, Somervell, Stephens, Sterling, Stonewall, Sutton, Tarrant, Taylor, Terry Throckmorton, Titus, Tom Green, Upshur, Upton ValVerde, Van Zandt, Walker, Webb, Wichita, Wilbarger, Williamson, Wise, Wood, Young and Zavala.

If you should observe an infestation and your county is **NOT** listed please contact me.

Pecan weevil damaged nuts

Hickory shuckworm:
In commercial orchards we recommend two insecticide applications beginning at half shell and a second application 10 to 14 days later. Recommended insecticides include: tebufenizide (Confirm 2F) @ 8 - 16 oz per acre; chlorpyrifos (Lorsban 4E) @ 2-4 pts per 100 gallons; esfenvalerate (Asans XL) @ 2.56-4.27 oz per acre; phosmet (Imidan 70WSB) @ 1.5-2.0 lbs per 100 gallons; spinosad (SpinTor 2SC) @ 4 - 10 oz per acre and methoxyfenozide (Intrepid 2F) @ 4 - 8 oz per acre.

Stink bugs/Leaffooted bugs
This is the time of year when adult stink bugs and leaffooted bugs start leaving some of their primary host plants and can migrate into pecans. Watch for adults on clusters on the border rows. There are no treatment thresholds for managing this complex of true kernel feeding insects. Treatment of border rows can help reduce infestations without having to treat the entire orchard. For those producers that planted trap crops watch for adults in these alternate hosts. Treat the trap crop with an insecticide once the host plants start to senesce.

Insect of interest: In case you think that the stink bug /leaffooted bug complex doesn't have any natural enemies think again. It is common this time of year to see stink bugs with parasite eggs attached (see picture). The following is some information on one of the main parasites of stink bugs - the feather legged fly.

Feather-legged fly: *Trichopoda pennipes* (Diptera: Tachinidae) is a tachinid parasitoid of members of the stink bug and leaffooted bug families. It has a wide distribution in both North and South America.

It occurs throughout much of the United States, and in the southern states its major hosts are the southern green stink bug *Nezara viridula* and leaffooted bug *Leptoglossus phyllopus*. It is sometimes referred to as the "feather-legged fly" because of the prominent fringe of feather-like bristles on its hind legs. This distinctive and conspicuous fly is bright orange with a velvety black head and thorax. It has dark legs with a fringe of short black hairs on the hind leg and yellow feet, large brown eyes and brown and black wings. The tip of the female fly's abdomen is black. *T. pennipes* is highly attracted by an aggregation pheromone produced by male southern green stink bugs, which results in the males being parasitized at a consistently higher level than females. Each female fly lays on average 100 eggs, which are placed singly on the body of a large nymph or adult bug. Most of the small, white or gray, oval eggs are placed on the underside of the thorax or abdomen, but they can occur on almost any part of the bug. Many eggs may be laid on the same host, but only one larva will survive in each bug. The young larva that hatches from the egg bores directly into the host body. The maggot feeds on the body fluids of the host for about two weeks, during which time it increases to a size almost equal to that of the body cavity of its host. When it has completed its development, the cream-colored third instar maggot emerges from the bug between the posterior abdominal segments. The bug dies after emergence of the fly, not from the parasitoid feeding, but from the mechanical injury to its body. The maggot pupates about an inch down in the soil in a dark reddish-brown puparium formed from the last larval skin, and an adult fly emerges about two weeks later. There can be three generations per year depending on location.

The fly overwinters as a second instar larva within the body of the overwintering host bug. Adult flies emerge in late spring or early summer. The only bugs large enough to parasitize at this time are overwintered adults. Subsequent generations develop on both nymphs and adults of the next generation.

Adult flies feed on nectar, especially from plants such as wild carrot (Queen Anne's lace) and meadowsweet, *Spiraea salicifolia*. The rate of parasitism can be as high as 93% on southern green stink bug and up to 80% on squash bug. But because the bugs continue to feed after parasitization, *T. pennipes* will not always prevent crop damage. However, the reproductive organs of the host bug begin to atrophy when the parasitoid reaches the second instar, so pest population increase will be reduced somewhat. The fly is most effective when it parasitizes nymphs, since 50% die before becoming adults and the remainder that become adults and overwinter will die before laying eggs.

(Information on the Feather legged Fly was from Susan Mahr, University of Wisconson - Madison)

Southern green stink bug with *T. pennipes* egg. Photo by Juan Lopez - USDA, APHIS, College Station TX

MEETINGS:
Texas Counties
Fort Bend county
November 16, 2004
Contact: Sarah Lineberger CEA-Hort

National/State Meetings
September 15-16, 2004
Alabama Pecan Growers
Fairhope, Al
Contact: Monte Nesbitt, gcspecan@bellsouth.net

September 17, 2004
Arizona Pecan Growers
Palo Verde Holiday Inn, Tucson, AZ
Contact: Mike Kilby, Phone: 520-403-4613 or email mkilby@ag.arizona.edu

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