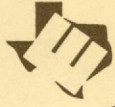


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TEXAS AGRICULTURAL  
EXTENSION SERVICE

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# Texas Pecan Pest Management

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**Newsletter**



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## Insects

During August and September there are several nut and foliage pests that will need to be monitored and controlled. Although control measures are not needed at this time, it is time to make some management plans.

Hickory shuckworm, pecan weevil and stink bugs can be serious threats to developing pecans while black pecan aphids can be a serious problem on the foliage.

This newsletter will discuss possible management options for these pests.

**Stink Bugs:** There are several species of stink bugs and leaffooted bugs that can cause black spots on pecan kernels. One of the biggest culprits is the southern green stink bug, *Nezara viridula*.

Damage from these kernel feeding "bugs" occurs more on an orchard to orchard basis than on a wide scale. Stink bugs and leaffooted bugs are a difficult group of insects to control. Some of the reasons are:

- only the adult stink bugs feed on pecan.

- These insects have a wide host range and are very mobile.

- There are no established treatment guidelines or thresholds.

- These insects are hard to scout for.

- The damage is not observed until the pecans are marketed.

- damage can occur up to shuck split.

The current recommendations for managing stink bugs include keeping the orchard floor shredded and free of weed hosts and to be aware of surrounding crops such as soybeans, hayfields etc. that may harbor these pests. As these crops mature or are harvested adult stink bugs can migrate to pecan. Watch border trees for migrating adults. Some stink bugs will be controlled when insecticides are applied for hickory shuckworm or pecan weevil. However, stink bugs can damage pecans up to shucksplit which is several weeks after the last weevil application.

Over the past three years tests have been conducted on an alternative control method which is called trap cropping. This technique involves planting small plots of a very desirable host

plant to draw stink bugs away from pecan during September and October. The small plots can then be monitored and insecticides applied when populations start to build.

In Longview, Texas small plots of pinkeye purple hull peas were planted during July and early August in a 60 acre orchard. After bloom and pod set the plots were monitored for stink bugs and leaffooted bugs. As adults and immatures were observed to increase the plots were treated rather than the orchard.

Ideally trap crops should be planted on the outside edge of an orchard to attract these insects as they migrate in from other food hosts, however, in some orchards this may not be possible.

Theoretically trap crops should attract a large number of adults into a small area where less insecticide will be needed. Also, treatments can be applied closer to harvest. Most of the insecticides labeled on pecan have a 21 to 28 day preharvest interval, except for Sevin®.

Although this system may sound ideal on paper it does have a few problems. Some of the problems encountered during testing have been:



1) obtaining a good stand. Since the trap crop is planted during a hot, dry time of year, some irrigation or watering will probably be needed to get a stand.

2) In one instance weeds (Johnson grass) was a problem. Plots may need to be treated with roundup prior to planting

3) Deer feeding on plots.

4) Planting the plots to early which results in a nondesirable trap crop during a critical time (September and October).

Trap cropping is not intended for every orchard, but in areas where stink bugs and leaf-footed bugs are a chronic problem this system may be a viable option for reducing damage. Other host plants for a trap crop could be utilized. Research is still being conducted on this technique.

#### **Hickory Shuckworm:**

Unfortunately treatments for the hickory shuckworm are applied only based on the previous seasons damage and are timed according to a crop development stage.

Hickory shuckworm pheromone traps are commercially available, but they have not proven reliable during July and August. For some reason the traps do not give an accurate account of activity during August when treatments need to be applied.

It is recommended that the first application be made when pecans reach the half shell hardening stage. This stage can be determined by making cross sectional cuts on pecans, starting at the tip end and working toward the stem end. When the

shell can be felt about half way down the shuck is when the first treatment should be applied.

Different varieties may reach this stage at different times so an average development for the orchard will need to be considered. The only exception to this is Pawnee which will reach this stage several weeks before most other varieties.

A second application should be made in 10 to 14 days. Recommended insecticides include: azinphosmethyl, (Guthion® several formulations); carbaryl (Sevin® several formulations); chlorpyrifos, (Lorsban® 4E and 50W), cypermethrin, (Ammo® or Cymbush®) and esfenvalerate, (Asana®). Of these products only carbaryl allows grazing.

If carbaryl, esfenvalerate or cypermethrin are used, orchards should be monitored closely for mites and aphids.

Although insecticides containing *Bacillus thuringiensis* should kill shuck worm larvae these products have not proven to be effective. The ineffectiveness is thought to be due to the fact that shuckworm larvae have limited feeding outside the pecan shuck and Bt products have a short residual.

#### **Pecan Weevil:**

Management of the pecan weevil should be directed at preventing female weevils from laying eggs in pecans. In a weevil management program producers should monitor adult emergence, monitor kernel development to determine when pecans will be susceptible to oviposition and use

carbaryl insecticide.

Because female weevils can not lay eggs in pecans until the pecan has reached the late gel stage, treatments can be delayed until the gel stage has been reached on the earliest maturing varieties.

Adult male and female weevils will feed on pecans prior to the gel stage which will result in some nut loss, but insecticides are usually withheld until pecans reach the gel stage.

Feeding damage by males and females has been estimated at approximately 0.25 nuts/day/weevil. An orchard with a light crop and heavy weevil infestation may have to be treated before the gel stage.

Adult emergence traps should be in place by early August. Emergence traps are important in detecting a delayed emergence due to drought.

When using an insecticide for the weevil a spreader sticker should not be used.

**Black Pecan Aphids:** Black pecan aphids are generally considered easy to control with most insecticides. Insecticides applied for the hickory shuckworm and pecan weevil will do a good job against black aphids. However, populations of black aphids can build up after the last weevil or shuckworm insecticide has been applied. Close monitoring of the orchard during September and October is needed to detect these late season populations.

#### **Beneficial Insects:**

*Euderus acrobasis* (Crawford) (= *Secodella acrobasis*) is a



solitary external parasite of the pecan nut casebearer. In a 1932 and 1933 study of casebearer in central, western and southern Texas this parasite was reared only from overwintering larvae. Parasitization of overwintering casebearer larvae average 11.3 percent in both 1932 and 33.

A high percentage of larvae of this parasite pupated in March and the adults emerged during the latter part of March and early April.

**Harmonia Lady Beetle:** The lady beetle *Harmonia axyridis* was observed in a pecan nursery in Bastrop county on July 19. This was a new county record.

## Yesterday

The nineteenth annual meeting of the Texas Pecan Growers Association took place in College Station on November 7-8, 1939. During the meeting there were three presentations on controlling pecan insects.

C.B. Nickels, USDA spoke on "Insecticide Tests Against The Pecan Nut Casebearers in Texas In 1938". The purpose of the test was to determine the effectiveness of single applications of seven spray combinations, four of which had apparently not been previously tested against the casebearer.

Treatments and rates per 100 gallons in the test included: 4 pounds lead arsenate; 6 pounds lead arsenate; 6 pounds lead arsenate plus 1 gallon summer oil emulsion; 6 pounds lead arsenate plus 1 pound soybean flour; 6 pounds lead arsenate plus 1 fluid ounce sulfated alcohol; 6 pounds cryolite; 6 pounds cryolite plus 1 gallon summer oil emulsion; 2 pounds zinc sulfate.

The tests were conducted in Crystal City, Texas during 1938. All of the treatments increased yield with the largest increase from trees sprayed with 6 pounds lead arsenate in combination with the summer oil.

Mr. S.W. Price, Jr., Gustine, TX spoke on "Observations of the Pecan Weevil". In Commanche county there were severe infestations of pecan weevil in 1926, 31, 35, and 39. At this time there was know known control for the weevil. "Complete orchard sanitation, controlled weed and grass growth, and possibly cultivation accompanied with natural handicaps are the present recommended measures for hope of control of the pecan weevil".

S.W. Bilsing, Dept of Entomology spoke on "Combination Sprays For The Control of Common Insects of The Pecan".

Combination sprays in this test included materials for insects such as lead arsenate and nicotine sulfate or Black Leaf 40 in various combinations of Bordeaux mixture for pecan scab and zinc sulfate for pecan rosette. Spray combinations were need that were effective but not cost prohibitive.

## Meetings

### County

#### August 25

Multi County meeting in Montague County.  
Rayford Pullen, CEA Montague County: 817-894-2831  
Mark Terning, CEA Wichita County: 817-766-0131

### State Meetings

## September 15-16

Alabama Pecan Growers  
Gulf Coast Experiment Station,  
Fairhope, Al  
Bill Goff: 205-844-5480

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