



Pest e-alerts



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Early-Season Pecan Weevil Situation – Hold that Thought

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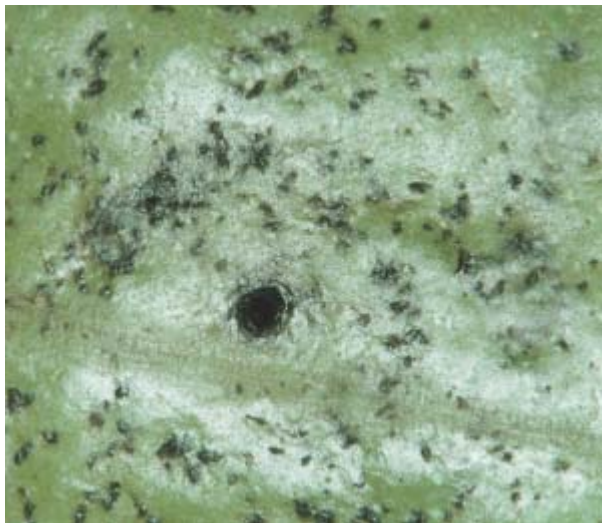


Several phone calls and other inquiries have crossed my desk lately asking about pecan weevils in 2009. The overriding question thus far has been, “with the early rains and recovery of weevils already occurring in traps, should I treat early.” Relatively light populations across the majority of the state have been the norm thus far. Many growers have reported single digit numbers since they began their yearly monitoring and trapping. Heavy rainfall that proceeds the normal

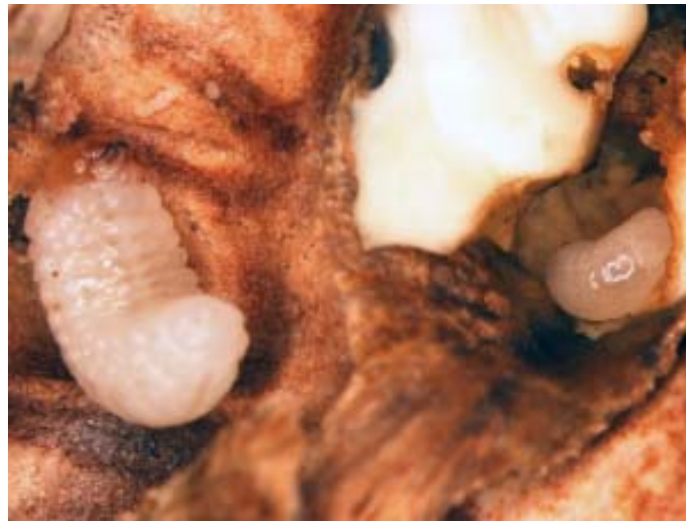
emergence period for adult weevils will often lead to early suicidal emergence. This may be likely in several locations that had heavy rainfall through mid to late July. In fact, some pecan producers located in central and south Central Oklahoma, who began trapping in July, noticed heavy peaks in late July. I would suspect that they may recover very few additional weevils after that time but that remains to be seen. Also, remember that sustained flooding in many orchards can adversely affect the weevil population. In some instances this may be possible since flood waters can sit on orchard floors for weeks. Another scenario and the one that concerns me the greatest is the possibility that weevil populations have not peaked and/or may fly in from adjacent untreated areas. In previous studies conducted throughout Oklahoma using Circle traps, we have consistently seen the peak in emergence to occur about the third week in September.

I am hopeful that the first scenario described above is the explanation for the fate of our weevil population in 2009; however, I caution all growers to please continue to monitor and trap in their areas to be certain we do not have a normal September flush of adult beetles. In years past, some growers suspended treatment about the time that the cultivar Pawnee began shuck split and consequently got burned on their other varieties or natives. Pecans will continue to be susceptible to weevil attack up to shuck split. We must continue to learn from those bad experiences in the past, to avoid falling into the same trap for the future.

After emergence from the soil, adult weevils live for about 2 to 3 weeks, with females surviving longer than males. Female weevils are capable of surviving much longer if nuts are not acceptable for oviposition (egg-laying). If the nuts are not ready for oviposition by female weevils, then adults will cause feeding damage on the nuts (on average about 1 nut per weevil every four days). This damage may consist of feeding punctures, prior to shell hardening, which will cause premature drop of the pecan. Feeding by pecan weevil after shell hardening may cause the deterioration of the gel resulting in "sticktights." If the weevil penetrates only the shuck, then damage may be limited to slight scars, black spots, pits or molds on the kernel near the puncture site.



Oviposition by female pecan weevils can occur as early as 2 days after emergence; however, the majority of egg production occurs 10-12 days after emergence. Regardless of how soon oviposition begins, it is initiated on early maturing varieties sooner than on trees that have late maturing nuts. Each female can average around 35-55 eggs deposited during her life. She will average about four eggs per nut. With a healthy weevil population, this can account for a great amount of damage.



In relationship to insecticide control, many growers are making a transition from traditional use of Sevin to use of some formulation of pyrethroid insecticide (Warrior, Proaxis, Asana, Mustang-Max, etc.) instead of Sevin. The reasoning behind this change has been economics, with costs for Sevin continuing to rise and pyrethroid costs remaining steady to lower in some cases. While this may be a good choice for some, it could create a potentially greater problem for others. If you do not have a closed cab system, some pyrethroids (the newer ones in particular) could be potentially more toxic than Sevin. The active ingredient in Sevin, known as Carbaryl has an oral and dermal LD50 of around 260 and 4000 mg of chemical/Kg of body weight, respectively, while those same numbers for Warrior (lambda-cyhalothrin) are 68 and

664, respectively. Remember, the lower the number, the more potentially toxic the chemistry. Proaxis, which is simply a different isomer (gamma-cyhalothrin), very similar to Warrior, has an oral and dermal LD50 of 79 and 632, respectively. This suggests that these newer pyrethroids are potentially more toxic to the applicator than Sevin insecticide.

Over the last two years, several combination products have been labeled. These products generally contain some type of pyrethroid and another active ingredient that may or may not be more efficacious on aphids. One such product is Endigo[®], which contains a pyrethroid (lambda-cyhalothrin) plus a neonicotinoid (thiamethoxam). The latter ingredient is effective on aphids while the former chemistry is essentially Warrior[®], which is an excellent product for weevil control. Some of the other combination products simply contain two pyrethroids (e.g. - Hero[®]) or a pyrethroid in conjunction with chlorpyrifos (Cobalt[®]). While the former type of product may be effective on weevils, it likely has the same limitations of most pyrethroids for aphid control (i.e. – resistance, resurgence or replacement issues). Chlorpyrifos may be somewhat efficacious on aphids, but does not effectively control weevils and is not considered to be translaminar (translocating into peripheral leaf tissue). Thiamethoxam and Imidacloprid are both effective on aphids and have some translaminar activity. The latter product is another neonicotinoid found in the combination product known as Leverage[®].

A final word about switching chemicals too quickly before examining the information at hand is when making your choices, carefully examine university trials and ask others about performance of new materials. While many of the newer pyrethroids are similar, their active ingredients may vary in activity on pecan weevil. In OSU trials, Warrior[®] has proven to be more efficacious than Mustang-Max[®] or Proaxis[®] and grower testimonies have borne this out. Different active ingredients may be the answer to this puzzle between Warrior[®] and Mustang-Max[®], but why are the two isomers of cyhalothrin (Proaxis[®] and Warrior[®]) different? The answer is on the label. Warrior[®] contains twice as much active ingredient per gallon than Proaxis[®] and yet the usage rates for pecan are identical. All of this latter information on chemicals points to the most important aspect of making applications, read the label and know what you're getting for your money.

Grape Bunch Rots

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As the grape season is now progressing towards harvest season, the rainy, humid weather brings a reminder to be on the lookout for various bunch rots that can afflict the grape clusters as they mature. While many of the tablegrapes and white winegrape cultivars are nearer to harvest compared to the red winegrape varieties, bunch rots can appear at any of the cluster development stages.

Moderate temperatures and wet weather, like much of Oklahoma has experienced over the last week, are conditions that are conducive for bunch rot diseases. Fungicides may be warranted for some situations. Hopefully most growers have maintained an adequate black rot

prevention program, which will also translate to improved bunch rot control late in the season. Growers should stop spraying as soon as possible, but in some cases it will be necessary to make late-season fungicide applications to prevent damage to fruit and foliage by disease causing agents. Keep in mind, some fungicides can cause “off-flavors” in wine or disrupt the fermentation process if applied too close to harvest. Compounds like sulfur, copper, and captan should not be applied within 30-45 days of harvest. Also, note the pre-harvest interval (PHI) for fungicides. This interval can be found on the product label and should be followed. The following diseases may become an issue in the next few days as the rainy, overcast weather persists.



Botrytis Bunch Rot

Botrytis bunch rot can occur throughout the season, but can be severe near harvest. Tight clusters, other fungal infections, bird damage, hail damage, etc. can increase the occurrence of botrytis bunch rot. Infection by the pathogen is favored by moderate to cool temperature, free water, and high humidity while fungal spread can be rapid during moist periods, especially near harvest.

(Photo Credit: Tuner Sutton, NC State University)

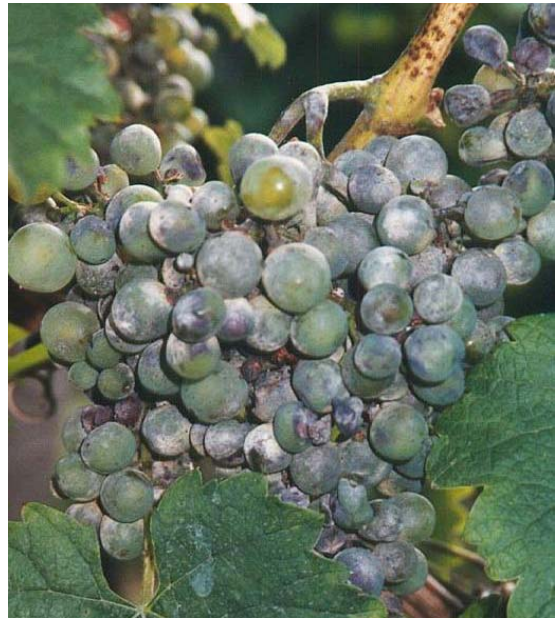
Pre-harvest Management

- Anticipate prolonged wet and humid conditions for fungicide applications. If sufficient dry-time (4-6 hour minimum) is anticipated, fungicides should be applied prior to rain events.
- Elevate is a protectant fungicide (does not enter the fruit or other plant material) that is effective in controlling botrytis bunch rot and is rain fast.
- Pristine at the higher labeled rate is also effective in controlling botrytis bunch rot. Observe the PHI of 14 days and DO NOT use this product if you have already made 4 applications of a strobilurin fungicide (MOA class 11) this season.
- If application of a fungicide is not an option, then pick fruit as soon as possible and before wet conditions arrive.

Powdery Mildew

Warm and humid conditions, without free-moisture and widely fluctuating temperatures can be very conducive for powdery mildew. It is critical that fruit are protected until 8° Brix. Fruit are considered resistant to infection by the fungus after this point. However, the canopy should be protected until harvest to facilitate ripening of fruit.

(Photo Credit: Tuner Sutton, NC State University)



Pre-harvest Management

- Quintec, Endura, Pristine, stilet oil, and potassium salts (Armicarb, Nutrol, etc.) can be used for late-season powdery mildew control and will not affect the wine-making process.
- Sterol-inhibiting (SI) compounds such as Nova/Rally, Elite, and Procure are also effective in areas where populations of the fungus are not resistant to those products.

Late-season bunch rots

Black rot and powdery mildew will not be of concern late in the season as Brix rise above 8°. However, as fruit continue to ripen “**bitter rot**”, “**ripe rot**”, and “**Macrophoma rot**” can be a problem on intact berries.



Bitter rot on ‘Vignoles’



Ripe rot

(Photo Credit: Tuner Sutton, NC State University)



Macrophoma rot

(Photo Credit: Tuner Sutton,
NC State University)

Pre-harvest Management

- Strobilurin fungicides, such as Pristine or Abound can be used to protect healthy fruit from these bunch rots. DO NOT use these products if you have already made 4 applications of a strobilurin fungicide (MOA class 11) this season.

“Sour rot” can be a problem on fruit that has been “wounded”. This problem is a complex of fungi, bacteria, and insects that gain entry via wounds of fruit. Fungicides are not effective for this disease. The best method of managing this problem is to be diligent about preventing damage to fruit and controlling insect pests. I have received several reports of sour rot already this season. Frequent hail events this year have made conditions conducive for the occurrence of sour rot.



Sour rot

(Photo Credit: Eric Stafne,
Oklahoma State University)

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