

PLANT DISEASE AND INSECT ADVISORY



Entomology and Plant Pathology
Oklahoma State University
127 Noble Research Center
Stillwater, OK 74078



Vol. 3, No. 15

Website: <http://entopl.okstate.edu/Pddl/advisory.htm>

Aug 30, 2004

Pecan Weevil Season in Full Swing Phil Mulder – Extension Entomologist



By now, many growers and educators have realized that with all the July rains throughout the state, pecan weevils have begun to emerge earlier than usual. This insect undoubtedly represents one of the major pecan pests that can severely limit production and quality of the pecan crop. Pecan weevils begin emerging anytime from late July through October and can occasionally be a problem even after shuck split. The amount of damage that occurs from adult feeding on nuts is minor, with weevils feeding on about 1 nut every four

days; however, once nuts reach the gel and/or dough stage of development they become prime targets for egg laying by adult female weevils. Pecans mature from the tip end towards the stem end so always check the tip end for the most mature kernel development. One female can oviposit anywhere from 1 to 4 eggs across several nuts. On average, female weevils will lay four eggs per nut. Subsequent feeding by larvae within the nut will naturally destroy the overall quality of that nut and can have the potential of scaring off customers from retail sales. This is why damage tolerance from pecan weevil varies with the market strategy for the crop. Producers selling pecans to a sheller normally tolerate some weevil damage, although it does reduce crop value. Producers that plan to market their crop directly to the public or wholesale their crop to retailers have no tolerance for pecan weevil larvae infesting the nuts.



Pecan weevil control requires from one to four well-timed insecticide applications. The number of insecticide treatments required varies across years, and according to producer tolerance to weevil damage. For several years, Sevin 80S has been the insecticide of choice to control pecan weevil. It continues to be a good choice, and has relatively long residual activity – 10 to 14 days in most cases. However, price increases for Sevin have caused many producers to seek alternative insecticides for weevil control. Mustang-Max, Asana XL, Ammo and Warrior are synthetic pyrethroids that are also labeled for control of pecan weevil. Pyrethroids tend to be very efficacious, but have shorter residual activity (5-10 days) than Sevin. Keep in mind, that most

insecticides applied for pecan weevil are directed at making direct contact with weevils and thereby directly producing the desired result, mortality of the insect. With this scenario in mind, any of the four pyrethroids mentioned should control pecan weevil well when timed properly (see OSU Facts F-7190). However, producers should be aware that residual activity of pyrethroids is shorter than Sevin and that the formulations differ. Synthetic pyrethroids are formulated as suspension or emulsifiable concentrates, while Sevin 80S is a soluble powder. While both types of products go into solution well; when applied to a leaf or nut surface, liquid formulations will dry as a fine film and spread readily to the foliage. Powder formulations of Sevin will dry in an almost blotchy coating. The consequence of the film left may relate to the amount of residual left behind for an adult weevil to pick up when penetrating a pecan. In addition, if a spreader-sticker is added to the tank, this could further spread the material thinner. While this practice is a good approach with foliar feeding caterpillars, it is likely not a good direction with pecan weevil and may ultimately affect the toxic dose consumed by the weevil as it penetrates the nut. In 2003, several growers experience problems associated with control of pecan weevil with synthetic pyrethroids. It is likely that their problems may have been connected to these aforementioned limitations. We are continuing to evaluate the utility of these new and old chemistries in managing pecan weevil and anticipate that their usefulness will be discerned in controlling this important pest of pecan.

For retail pecan sells, growers can not afford the enigma associated with “weevily” pecans, therefore, multiple applications of insecticides during this time of year may be a standard practice. To reduce those applications or at least to time them more precisely, producers should be encouraged to use adult emergence traps. These include wire-cone emergence, pyramid or Circle traps. For a treatise on construction and use of these traps consult OSU Facts No. 7190.

Soybean Aphid Approaches the State

Phil Mulder – Extension Entomologist



Kansas State Entomologists have reported soybean aphids, *Aphis glycines* working their way across the state of Kansas. In all, about 29 counties have reported infestations and these populations have ranged from as far east as Johnson County, Kansas (Missouri border), as far north as Marshall and Nemaha counties (Nebraska border), as far west as Greeley and Wallace counties (Colorado border) and as far south as Meade county in Southwest Kansas (Oklahoma

border). The first and last locations mentioned are areas that are certainly of concern to growers in Oklahoma. Soybean aphid populations have been expanding rapidly throughout the Plains states this year because of the cool, wet conditions. With temperatures around 77° F aphid populations can increase 10 fold in just one week. In some instances, populations of 500-1000 aphids per plant have been reported. When numbers of aphids reach these levels, plants become laden with honeydew and bottom leaves will take on a darkened appearance from sooty mold.

The generally accepted action threshold is about 250 aphids per plant if populations are actively increasing. This threshold has reportedly worked well in late vegetative (right at first bloom) to R4 soybeans (full pod). Spraying after R6 (full seed) has not been documented to increase yield, especially if the crop has grown well through the vegetative stages.

Late in summer, a sexual cycle of the aphids takes place, producing both male and female winged forms. These aphids migrate back to the woody shrubs (primarily *Rhamnus* species, or buckthorn) where females eventually lay eggs that complete the seasonal cycle. Thus, if winged aphids begin to appear, populations can decline fairly rapidly. The overwintering host is not extremely common in Oklahoma, which may be part of the reason why the soybean aphid have not become established thus far in our state.

Don't assume that any aphid seen in soybean is indeed the soybean aphid. The cotton aphid is also found occasionally in soybean. In addition, most soybean aphid numbers reported in Kansas are relatively light and predator populations (primarily lady beetles, lacewings, minute pirate bugs, syrphid flies and parasitic wasps) appear to be abundant. Also, many of the soybeans are nearing a stage where the aphids pose little threat to the crop. Fields still in the early stages of pod development are those at greatest risk.



Anyone needing more information on the soybean aphid should consult the National Pest Alert news release. This two-page information sheet is available from Dr. Patricia Bolin, OSU Interim IPM Coordinator. On another note, Dr. Bolin and her crew monitored for soybean aphid in 2001, 2002 and 2004. No monitoring was conducted in 2003 because of two years of negative results (none found). Thus far in 2004, monitoring conducted in the two northeast counties nearest the Missouri line revealed no soybean aphids.

Africanized Honey Bees in Oklahoma

**Richard Grantham, Dir., PDIDL, Phil Mulder, Extension Entomologist, and
Russell Wright, Head, Department Entomology & Plant Pathology**

During the second week of August two samples of honey bees from Tillman County were sent to the Plant Disease and Insect Diagnostic laboratory for testing. At least one of these bee colonies were involved in a serious stinging incident when a work crew cut through the limb of a storm-damaged tree in the southwest Oklahoma community of Tipton. Seven members of the work crew were treated at a local hospital. Using a new PCR technique developed and validated by researchers at Texas A&M and the USDA-ARS bee unit in Weslaco, TX, our lab identified both samples as matching the profile for Africanized honey bees (AHB) and not European honey bees (EHB). These preliminary results were immediately reported to the Oklahoma Department of Agriculture, Food, and Forestry in Oklahoma City and samples were sent to the USDA-ARS bee identification laboratory at the Carl Hayden Bee Research Center in Tucson, Arizona. On Friday August 20 the USDA laboratory called and gave us the preliminary report that sample 1 and sample 2 had 80% and 96% probabilities that they were not EHB and would need to be subjected

to more thorough morphometric analyses. This process will take about 2-3 weeks and will determine if they are AHB or feral EHB.

ODAFF personnel and/or Department of Entomology and Plant Pathology personnel will respond to reports of unusual stinging incidents, but we will need to receive appropriately collected and packaged samples of bees (>25-50 or more) to examine before we can list them as suspected AHB. Aggressive honey bee behavior and severe sting incidents can be considered as possible evidence of AHB and the general public should be aware of any unusual honey bee activity and certainly should report such activity to their County Extension Educators and ODAFF. At **no time** should any County Extension Educator risk collecting a sample from a suspect bee colony.



Africanized and European honey bees are the same species. They look the same, sting in defense of themselves or their nest, can only sting once, and have the same venom. Africanized honey bees differ in that they respond more quickly and more bees sting, can sense a threat from people or animals 50 feet or more from their nest, sense vibrations from power equipment 100 feet or more from nest, may pursue a perceived enemy 1/4 mile or more, swarm frequently to establish new nests, nest in smaller cavities and sheltered areas, and move their entire colony readily (abscond) if food is scarce. Away from the hive, however, they are no more aggressive than other bees or wasps. They will not form large swarms and hunt for you.

The best safety advice is to avoid any encounters with unfriendly honey bees. **Be alert** for danger especially if bees are acting strangely. Remember that honey bees sting to defend their colony, so be on the look out for honey bee swarms and colonies. Quite often bees will display some preliminary defensive behavior before going into a full-fledged attack. They may fly at your face or buzz around over your head. These warning signs should be heeded, since the bees may be telling you that you have come into their area and are too close to their colony for comfort both theirs and yours!

When you are doing outdoor activities, be aware of your surroundings and keep an eye out for bees. Don't panic at the sight of a few bees foraging in the flowers. Bees are generally very docile as they go about their work. Unless you do something out of the ordinary, such as step on them, they will generally not bother you.

There are a few things you can do to be prepared.

- Wear light-colored clothing. Experience has shown that bees tend to attack dark objects such as clothing or hair.
- Avoid wearing floral or citrus aftershaves or perfumes when hiking. Bees are sensitive to odors, both pleasant and unpleasant. The smell of newly cut grass has been shown to rile honey bees.

- Check around your house and yard at least once a month to see if there are any signs of bees taking up residence. Africanized honey bees will live about anywhere they can find shelter. This means they are more likely to be found in trees, in the sides of buildings, in drain pipes, in water meter boxes, in old abandoned appliances, in piles of junk, and even in holes in the ground. Sealing or covering cracks and holes is good prevention.



- Don't panic if you find an established honey bee colony in your neighborhood. Keep every one away. Check the Yellow Pages for pest control operators, beekeepers or other bee removal experts in your area who will remove the colony. Do not try to remove colonies yourself.

Most people taking part in normal outdoor activities do not have to go to any extraordinary lengths to be prepared, just keep in mind where you would go to escape honey bees, and be on the look out for danger. In the event you are attacked by honey bees here are a few good tips.

- **RUN** away as fast as possible! Do not try to retrieve your belongings and do not try to stand still in an attempt to fool the bees. The more you flail your arms, the madder they will get. Get indoors or in a car as fast as possible. If you can't get indoors, keep running. A bee can obtain speeds of from 12 to 15 miles per hour, but most healthy humans can outrun them. They will usually follow you for several hundred feet but Africanized honey bees have been known to follow people for more than a quarter mile.
- Almost all cases of Africanized honey bee attacks can be traced back to some provocation, such as some noise or vibration, i.e. a lawn mower, weed eater, or tractor.
- Any covering for your body, and especially for your head and face will help you escape. People who have been attacked say the worst part is having the bees sting your face and eyes. Any impairment of your vision will also make it more difficult to escape. If you do not happen to have a net with you, grab a blanket, a coat, a towel, anything that will give you momentary relief while you look for an avenue of escape. But the covering device is not going to protect you for long. The idea is to use it to help you get away. If you have nothing else, pull your shirt up over your face. The stings you may get on your chest and abdomen are far less serious than those to the facial area.
- **DO NOT JUMP INTO WATER!** The bees will wait for you to come up for air.
- Once you are away from the bees, take a second and evaluate the situation. If you are stung by one Africanized honey bee, it will be the same as a sting from the common European honey bee. The individual stings are not more powerful or painful. Even one honey bee sting can be dangerous, however, if you are allergic to them. Once you are away from the bees, remove all stingers from your body. Do not pull them out with tweezers or your fingers, as this will only squeeze more venom into the wound. Scrape them out sideways using your fingernails, the edge of a credit card, or with a dull knife. If you have been stung more than 15 times, are having symptoms other than pain and localized swelling, you should always seek medical attention immediately.

We will keep you updated concerning additional stinging incidents and reports of newly confirmed colonies reported by County Extension Educators and/or Oklahoma Department of Agriculture, Food, and Forestry inspectors. We will also be putting together a new website in the coming weeks (<http://entopl.okstate.edu/ahb/>) which will contain all of the information in this release as well as additional historical background, etc. I will include a note in the PDIA when the site is active.

Thanks to Texas A&M Entomology and University of Arizona AHB Education Project for providing much of this information.

Dr. Richard Grantham
Director, Plant Disease and Insect Diagnostic Laboratory

Oklahoma State University, in compliance with Title IV and VII of the Civil Rights Act of 1964, Executive Order of 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Ed Miller, Interim Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of Agricultural Sciences and Natural Resources.