

# PLANT DISEASE AND INSECT ADVISORY



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



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

July 2, 2002

## **Karnal Bunt Testing Available** **Bob Hunger, Extension Wheat Pathologist**

Recently there have been several inquiries regarding the availability of testing wheat (mostly wheat grown for certified seed) for the presence of Karnal bunt. Hence, we have decided to offer this testing to accommodate producer requests. However, keep in mind that **any suspect positive samples must be reported to USDA-APHIS.**

Also, please remember that there are different "levels" of testing wheat for Karnal bunt as described below.

**SEED WHEAT:** If wheat is to be used for seed, such as certified seed, then the wheat is tested for the presence of Karnal bunt-like spores. If Karnal bunt-like spores are found, the sample is sent to USDA-APHIS for confirmation that Karnal bunt is present.

**GRAIN:** If wheat is to be used as grain, then the wheat sample is examined for the presence of bunted kernels. If no bunted kernels are found, then the wheat is considered negative. If bunted suspected Karnal bunted kernels are found, then the sample is sent to USDA-APHIS for confirmation.

**BE AWARE THAT FORWARDING SUSPECT SAMPLES TO USDA-APHIS IS MANDATORY!** However, if testing is conducted by a private lab, results are confidential.

With this in mind, the Plant Disease and Insect Diagnostic Lab at OSU will test wheat samples for the presence of Karnal bunt. The **cost of this testing will be \$20.00 per sample**, which is consistent with the cost of other diagnostic tests for which specialized diagnostic effort is required. When possible, seed lots from the same producer will be bulked, which is an acceptable procedure for testing for Karnal bunt. Additionally, this minimizes expense and effort. Please send **a maximum of one pound of each seed lot in a labeled paper bag** for testing to:

Plant Disease and Insect Diagnostic Lab  
127 Noble Research Center  
Oklahoma State University  
Stillwater, OK. 74078-3033

If testing of seed wheat is desired, producers can indicate such to the Oklahoma Crop Improvement Association (OCIA). The OCIA will then forward a sub-sample to us for testing; however, a bill for the Karnal bunt testing will come from the Plant Disease and Insect

Diagnostic Laboratory that is separate from the bill the OCIA will send for the certification testing.

If you have questions pertaining to sample submission, the testing procedures, costs, etc., please direct these to Drs. Bob Hunger (405/744-9958), Larry Singleton (405/744-9956), or Mr. Brian Olson (405/744-9784).

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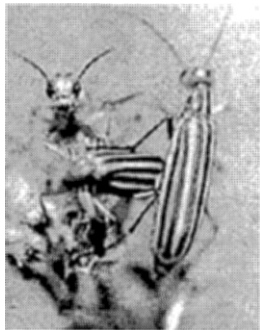
## **Alfalfa Growers Who Market to Horse Owners Should Watch for Blister Beetles**

**Phil Mulder, Extension Entomologist**

Scouting alfalfa fields, taking precautions while harvesting, spraying fields or infested areas, and inspecting baled hay all help prevent toxicity in horses from consumption of alfalfa containing blister beetles. Recently, specimens of the black blister beetle have been coming into the office. This is usually a precursor to the arrival of the more dangerous striped species.



Blister beetles contain a toxic blistering agent, cantharidin, which can cause irritation or serious damage to the stomach lining and other organs of the digestive and urinary tracts of horses. According to some reports, ingestion of as few as 15 beetles can cause illness, and consumption of 50-100 can cause death. Irrespective of an exact figure, these beetles are toxic in their fresh or dead, dried form. If toxicity symptoms are seen in horses, a veterinarian should be called immediately. If a large amount of cantharidin is consumed, a horse may die within six hours. Small amounts consumed may cause mild colic. A frequent symptom of cantharidin toxicosis in horses is placing the muzzle in water and playing in the water with the lips and tongue. Severe poisoning may result in low blood calcium and magnesium, which can cause stiffness and an exaggerated "goose-stepping" gait. Horses that survive 24 hours may strain frequently, and small amounts of blood may be seen in the urine.



Blister beetle adults emerge from the soil in late spring or early summer, and large numbers normally will congregate in small areas of fields, usually within 50 yards of field margins. The predominant species found in Oklahoma is the yellow and black striped blister beetle. Because of the congregating nature of this species, remains of beetles can be easily killed during the alfalfa harvest operation and they may be concentrated in only a few hay bales or small portions of bales.

When infesting alfalfa, blister beetles prefer to feed on blossoms. Swarms of beetles can be crushed by crimper rollers of the swather and are trapped in the windrowed hay. If beetles remain alive in the windrows, most of them will crawl out. They also can be trapped and killed in hay if windrows are driven on before beetles have had time to escape. Therefore, two of the best ways to avoid blister beetle problems in hay from an infested field are swathing without the crimpers and avoiding wheel traffic on freshly cut windrows.

Application of a short-residual insecticide to infested areas, entire fields, fence rows, and borders can kill beetles just before harvest. Sevin and WarriorT can provide good results; however, both

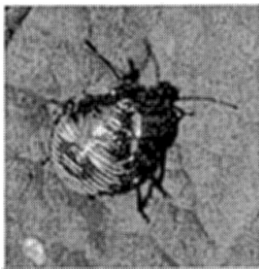
products have a seven-day waiting period before harvest. Parathion also can be effective, but it has a 15 day waiting period before harvest. Some other products have shorter waiting periods (Malathion – 0 days; Fury – 3 days) but their labels do not list blister beetles as a target pest, and effectiveness of their potential to effectively control the beetles in Oklahoma has not been tested thoroughly.

Part of the responsibility associated with feeding hay that is at risk for a blister beetle problem should fall on the livestock owner that purchases the hay. Buyers that purchase alfalfa should know their supplier well and find out what precautions were taken to avoid blister beetles in hay. If presence of beetles is suspected, hay should be inspected thoroughly before feeding. In addition, purchase of alfalfa harvested before May or after September reduces blister beetle risks significantly. This means essentially first and last cuttings are the least at risk from a blister beetle problem. For buyers that have a good relationship with their hay grower, it would not be inexpensive insurance to insist on an application of insecticide before harvest of summer cuttings. The cost of this application can be paid for by the purchaser or split among the two parties however they see fit. Although this treatment is contrary to IPM principles, with a million dollar horse at risk, sometimes principles get outweighed by good ole fashioned “horse sense.”

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## **Grape Insect Pest Problems to Watch for in Mid-Season**

**Phil Mulder, Extension Entomologist**



Mid-season is definitely not the time to abandon management of grape insect pests. We are continuing to see problems with grape berry moth and now the start of the arrival of grape root borer is upon us. On top of all this, the stink bug population in many vineyards across the state has literally exploded over night. We had hoped that not much damage would be witnessed from this hoard of sucking insects; however, in observations across some of the established orchards in Northeast Oklahoma, damage is approaching severe levels. We have also witnessed a prolonged oviposition and hatching period for stink bugs, which simply means all nymphal stages can be found at any single time. Management of these and other pests is a real challenge for many growers, in particular, those that are trying to avoid the use of more toxic insecticide choices, and those that have a thick canopy of leaves.

Associated with the problem of insecticide use, comes many issues. First, biological insecticides like B.t. (e.g.- Agree or Dipel) are virtually ineffective on stink bugs, therefore, an application to combat grape berry moth will not control the stink bug population. Second, organophosphates, such as Imidan or Guthion, are effective on all of these insects but are more toxic to the user and beneficial organisms. Third, many of the organophosphates, such as Imidan, work effectively when mixed with an acidifying agent, but may provide only partial control with little residual when used without something to modify the pH of the solution. This is where it pays to read the label in its entirety. The label suggests that the pH of the solution be below 6.0 for the chemical to be optimally effective. This will also prolong the residual capacity of the chemical. For grape growers this is often an easy solution, since many have food grade citric acid available. Simply modify the solution pH down to about 5.5. This is often critical with many organophosphates, but in particular with Imidan. Finally, in a thick canopy and with a good to excellent crop, stink bug nymphs will often hide in the heat of the day wherever they can find protection. This may be under leaf tissue or inside the grape clusters. This suggests that good coverage is a must,

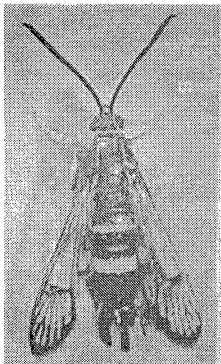
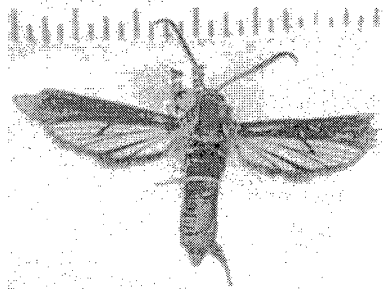
therefore, if the canopy is very leafy, use as much liquid as possible. Remember, rates of insecticides are expressed in the amount of active ingredient or amount of formulated product per acre. This means that, regardless of the amount of water applied over a given area, the same amount of pesticide will always be applied. The increased volume of liquid will insure that the entire canopy is adequately covered.

According to the latest calculations, we are toward the end of the second generation of grape berry moth (1200-1600 degree days). Numbers at Luther, Haskell and Perkins currently stand at 1555.6, 1457, and 1588.2, respectively (through 6-30-02). We are still catching moths from the second flight. The third flight will begin between 2400 and 2700 degree days. Some damage is being recovered in the Haskell area but the remaining sites are relatively clean.

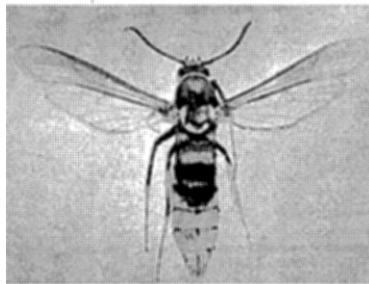
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### **Identification, Biology and Management of the Grape Root Borer** **Phil Mulder, Extension Entomologist**

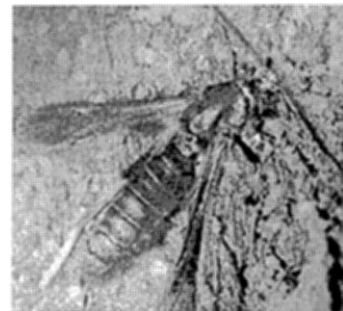
Currently, no grape root borer adults have been captured at any of the three locations being monitored. Many “look-a-like” moths are being captured in traps. These include dogwood borers, oak borers and lilac borers. The former two species have relatively clear wings (both fore and hindwings) and many yellow stripes or patches along the top of the abdomen. The lilac borer possesses darker wings, but lacks any yellow patches on the abdomen. The grape root borer male is characterized by the unique presence of four pencil-like tufts on the tip of the abdomen; however, these are probably not retained in sticky trap specimens. The grape root borer also possesses one single yellow stripe across the back, near the base of one of the first abdominal segment. In addition, the grape root borer has a dark forewing and clear hindwing.



Dogwood borer



Oak borer



Lilac borer

Flights of this species generally begin in earnest sometime in the middle of July. If pheromone traps have already been set out for this insect, be certain to change the pheromone source once a month. Female borers lay 300 to 400 eggs on foliage, stems or the ground. These eggs hatch in about two weeks, with the larvae subsequently tunneling into the soil to feed on the roots for the next 1 ½ years. Larvae mature in the early summer of the second year and pupate near the soils surface. This pupation characteristic allows for scouting and control without the use of chemicals. If regular examination of the soil, around the base of the vines, reveals any pupal

skins, then pupae can simply be covered with 6 inches of soil and this effectively aborts emergence.

For growers that insist on chemical control, then 2 weeks after first moth capture, treat with Lorsban 4E at the base of each vine. Do not treat the foliage or fruit, and this chemical requires a 35 day pre-harvest interval. This is likely a major issue for Oklahoma growers who may generally be in the heart of harvest by mid August. Applications would have to be made very soon to allow a sufficient amount of time.

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### **Pecan Nut Casebearer; After the First Battle** **Phil Mulder, Extension Entomologist**



First generation casebearer populations have come and gone. Many growers elected not to treat for this insect either because they did not experience significant egg deposition by moths or because they had a heavy crop load and did not mind the loss of a few nuts. The latter scenario is a tricky direction to go, simply because you put the casebearer population in charge of thinning. This is analogous to letting the fox take care of the hen house. If you did not guess right you could be experiencing 10% or more damage at this point. Maybe that amount is not bad if you have a particularly heavy crop; however, when subsequent casebearer generations surface later in the season and you let them continue to thin the crop, they likely may take more than you can tolerate. Growers who let first generation casebearer populations get by should carefully monitor for the second flight using pheromone traps and then begin to scout for larvae 7 days after moths are caught in traps. If new damage is observed then treat when 2 eggs or one damaged nut is observed after checking 310 nut clusters. It is important that you check at least 310 clusters before making a decision. Many growers that I spoke to checked about 100 or 150 clusters during the first generation and felt pretty proud until they were informed that they should have checked twice that number. These thresholds are often based on a minimum in scouting to represent the entire orchard. Obviously, if you reach the threshold before checking 310 clusters then treatment should be made, but don't give up if a threshold is not reached before you attain the minimum number of clusters to check (310).



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### **Fall Webworms Relatively Thick in Homeowner Pecans** **Phil Mulder, Extension Entomologist**

Fall webworms are quite common on pecan across the state with the heaviest infestations occurring in town. Most of the time in commercial orchards they are not an economic problem, simply because management of the more important pests (pecan nut casebearer) is handled adequately and this often controls fall webworm. This is particularly true since the advent of Confirm® which will has a longer residual than

many of the other previous chemistries.

Fall webworm, often mistakenly called bagworms (which is another pest not commonly found on pecan), creates a massive web on the terminal portion of branches. They do not feed on foliage inside the canopy and will remain within the webbing for their entire larval cycle. If they run out of food within the webbing, they will simply enlarge the size of the web to accommodate more foliage.

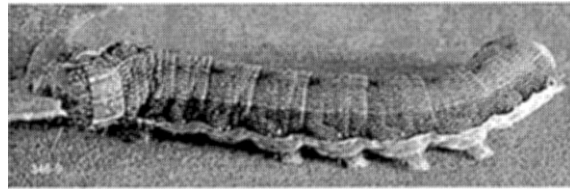
Treatment for webworms can take some very creative routes for homeowners; however, the safest way is simply to remove (prune) the effected limb and destroy or dispose of it and the insects. As long as the tree is healthy and has good foliage, a little pruning will not hurt; just don't trim past the one-third rule. If the infestation is located too high up on the tree or is too extensive to cut out then insecticide treatment may be the only recourse. The chemical Confirm T/O®, is available for homeowners and will be effective on any of the caterpillar pests (fall webworm, walnut caterpillar, pecan nut casebearer and hickory shuckworm). This product is safe to the user and gentle on beneficial organisms because it is an insect growth regulator that is specific to caterpillar pests.

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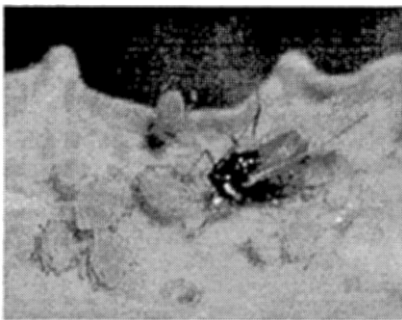
## Cotton Insecticide Section 18 Labels for 2002

Miles Karner, Area Extension Entomologist

Denim 016E (emamectin benzoate) for beet armyworms and Furadan 4F (carbofuran) for cotton aphids has Section 18 labels approved for use if an outbreak occurs in 2002. Currently insect pressure remains extremely light. Hopefully neither pest will reach levels to enact use of either of these products.



Denim specific requirements remain similar to last year's section 18 labels. No more than three (3) applications at rates of 0.0075 – 0.01 lb. A.I. (6 oz to 8 oz) per acre can be applied. A 5-day application interval and a 21-day pre-harvest must be observed. Denim cannot be applied through any type of irrigation system. A restricted entry interval (REI) of 48 hours must be observed. This specific exemption expires October 31, 2002. I strongly suggest consultants and producers keep written record of beet armyworm numbers in each individual field. This documentation can be as simple as a weekly scouting form denoting worm numbers per foot of row prior to and after each insecticide application.



Furadan requirements have changed considerably from previous seasons' requirements that could cause some confusion this summer. Previously, Furadan was released after each geographic district met the imposed EPA requirements. No such criteria are required in 2002 except that other aphicides were used prior to use of Furadan on some of the fields in questions. I strongly suggest consultants and producers keep a written record of aphid numbers and prior treatments in each individual field before Furadan is applied. This documentation can be as simple as a weekly scouting form denoting aphid numbers per leaf prior to and after each insecticide application. A

maximum of two (2) applications at a rate of 8oz (.25 lb. A.I.); not to exceed .5 lb. A.I. per acre is allowed and 27-day pre-harvest interval must be observed. Also remember each producer who uses Furadan must have a copy this section 18 labeling in their possession at the time of application. All fields must be posted in accordance with EPA's Worker Protection Standards and remain throughout the 14 re-entry period. The most interesting part of this specific exemption deals with EPA's non-binding goal (endorsement) for this use season *that 25% of all cotton insecticide treatments in Oklahoma involve materials other than Furadan*. It will be the responsibility of ODA to monitor and submit monthly reports summarizing aphid levels, acres infested, and insecticide use pattern.

I suggest you contact FMC, and Syngenta field representatives for more information concerning individual needs.

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