PLANT DISEASE AND INSECT ADVISORY

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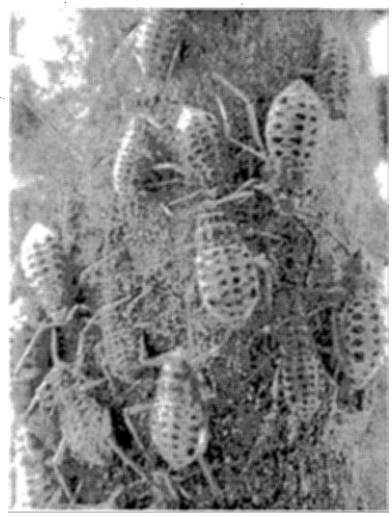
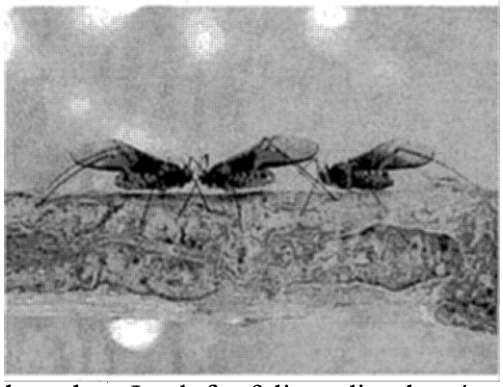
Giant Bark Aphids

Richard Grantham, Director PDIDL



We have been receiving numerous reports this year concerning the Giant Bark Aphid (*Longistigma caryae*). This is the largest aphid in North America with adults averaging about 1/4 inches long. They also have long legs which make them appear even larger. The aphids are grayish in color with rows of dark spots (giving them somewhat of a mottled appearance) and have short, black cornicles. Males and some females are winged but egg laying females are wingless.

Activity usually begins in late April in Oklahoma. An adult female gives birth to live young and a colony is formed on the underside of the branches of the host tree. Several generations occur during the summer and fall. Activity continues into mid-November in some years. Late in the fall females lay eggs in bark crevices or on the smooth bark of smaller limbs. The eggs are yellow when laid but later turn black. These dark colored eggs are the overwintering stage.



Heavy infestations on the leaves and twigs of oaks have been reported over much of central and eastern Oklahoma. This aphid feeds on a wide variety of deciduous trees. Oklahoma reports include American elm, pin oak, live oak, post oak, blackjack oak, pecan, hickory, sycamore, and golden rain tree. Other trees which might be infested include maple, basswood, birch, beech, walnut, chestnut, and willow. This aphid sucks sap through the bark of small branches. Serious damage is seldom reported in Oklahoma but can occur. Heavy infestations can kill infested twigs or branches. Look for foliage discoloration and dieback, with the underside of leaves populated by clusters of dark, large aphids. Often there are signs of sticky honeydew under the trees, and then dark sooty mold will appear. Cars parked under infested trees may be affected by the rain of honeydew.

For control use Orthene, an insecticide containing imidacloprid such as Bayer Advanced Lawn and Garden Spray, Malathion, or Diazinon. If you see that aphid predators are beginning to increase in response to the infestation, let them do their work without further spraying.

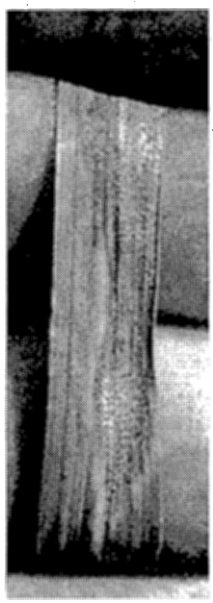
Wheat Disease Update

Bob Hunger, Extension Wheat Pathologist

On Tuesday, April 17th I scouted fields and variety-demos on the station near Perkins and Lahoma. On Thursday, April 19th I scouted mostly variety demonstrations located at Stillwater, Minco, Chickasha, Frederick, and Kingfisher. The maturity/growth stage of wheat on this route was mostly at the full boot to heads-just-emerging, except at Kingfisher where the wheat was at or just before full boot, and at Lahoma where the wheat was mostly just before full boot.

Foliar Diseases: As on previous trips, **powdery mildew (PM)** was the most common disease, with light to moderate levels found on lower leaves and stems of susceptible varieties such as Jagger, Jagalene, and Chisholm. There have been other reports of severe PM at Perkins (Dr. Gene Krenzer) and in plots near Lake Carl Blackwell (Dr. Art Klatt). Usually PM is not considered to cause a problem unless severe PM develops on the flag leaves. If this occurs, responses to fungicides have been documented.

Septoria and tan spot also were observed in fields where significant amounts of residue remained from last season. Some of these fields were no- or low-till fields located in the Walters area. As with powdery mildew, Oklahoma usually does not have the type of weather to facilitate development of these two diseases onto the upper leaves. I did not see lesions of either disease on any flag leaves.



To my knowledge, **wheat leaf rust** has been found only at low levels on the lower leaves of susceptible varieties such as Chisholm. In some areas (e.g., Perkins, Lahoma, Chickasha, and Minco), I couldn't find any rust pustules at all. In others (Frederick) I found only one or two scattered pustules, and at Stillwater on the lower leaves of Jagger I found a few clusters of pustules. This was in an area that had a fairly heavy infestation of leaf rust last fall. **Other states have reported heavier infestations of wheat leaf rust**. Dr. Klatt received a report that a new race of wheat leaf rust may be occurring in south and central **Texas**. Apparently TAM 400 is showing complete (100 S) susceptibility and susceptible-type lesions are appearing on the previously resistant varieties including Lockett and Thunderbolt. Drs. Gene Milus and Rick Cartwright in Arkansas report that there is moderate to heavy leaf rust in **Louisiana**, but only scattered reports of trace levels in **Arkansas**.

Wheat stripe rust is extremely heavy in Arkansas (Drs. Milus and Cartwright), and Dr. Klatt reported that severe stripe rust is occurring in plots in Texas near Uvalde, Castroville, McGregor, and Vernon. However, stripe rust has yet to be reported in Oklahoma. Both Dr. Klatt and I looked at plots and fields across southern Oklahoma yesterday and neither of us found any stripe rust.

I have seen some scattered spots indicative of **barley yellow dwarf virus** (BYDV) around the state, but for the most part, BYDV does not seem to be as common as I would have thought given the number of reports of aphids last fall and through early winter. In wheat and oats at the experiment station at Perkins is the place where BYDV was the most common and severe. The report from Arkansas (Drs. Milus and Cartwright) is that BYDV is widespread in some fields, and symptoms continue to become more obvious as the healthy wheat gets taller and the infected wheat remains stunted.

Finally, Mark Gregory and Ron Justice took me to a couple of fields located in Grady County in which **strawbreaker** was evident (especially after I examined samples this morning in the lab). No lodging had yet occurred, but the wheat was short and the lesions not yet totally girdling the entire stem. I also visited several fields in Cotton County with Jeff Baumann that had suffered to varying degrees from **root rot, most likely common and dryland root rot**. A similar field was observed in each of Grady and Payne Counties. In these fields, the plants that were alive and green showed little lower stem or crown discoloration. However, many plants were killed earlier in the season, and if these fields are subjected to stress during the next 4 weeks, more plants are likely to die.

Summary: Small amounts of leaf rust are scattered across Oklahoma, but to date, no stripe rust has been observed. Other foliar diseases are sparse, with the exception of powdery mildew, which is severe in some areas or fields. The extent and severity of BYDV is not yet obvious, but appears to be less than expected. Although there may be some problems with root rots, take-all, and strawbreaker, no widespread problems from these diseases are indicated at this time.

New and Revised Fungicide Labels to Control Foliar Diseases on Wheat

Bob Hunger, Extension Wheat Pathologist

During the past year, there have been two changes that affect the use and availability of fungicides to control foliar diseases of wheat such as leaf and stripe rust, powdery mildew, septoria leaf and glume blotch, and tan spot. These changes include:

- The approval of a Special Local Needs Label (Section 24c) for Tilt that allows Tilt to be applied through complete ear emergence (the prior label allowed application only up until flag leaf emergence).
- The approval of a Special Local Needs Label for Stratego that allows application to wheat through complete ear emergence.
- Remember, Quadris also is a foliar fungicide labeled for the control of foliar wheat diseases that can be applied to wheat through complete ear emergence.

A brief comparison of these three fungicides (borrowed from Dr. Bob Bowden at Kansas State University) is presented below. **REMEMBER**, always consult the label of any pesticide for the

most current and accurate information. Also, please realize that costs of fungicides are estimates and may vary with time, dealer, rebate offers, etc.

Product	Application cut-off	Rate per acre	Approx Cost **(A)**	Leaf rust	Septoria complex	Tan spot	Powdery mildew
Tilt	Ear emergence complete (growth stage 10.5) 40-day PHI **(B)**	4 fl oz	$2.55/floz	VG **(C)**	VG	G	VG
Stratego	Ear emergence complete (growth stage 10.5) 35-day PHI	10 fl oz	$1.00/oz	VG	VG	G	VG
Quadris	Ear emergence complete (growth stage 10.5) 45-day PHI	6.2-10.8 fl oz	$2.13/floz	E	VG	VG	F

(A) Add $3-5.00 per acre for aerial application.
(B) PHI = pre-harvest interval, that is, the time that must elapse between application and harvest.
(C) E = excellent; VG = very good; G = good; F=fair; P = poor.

Use of fungicides to control foliar diseases can be extremely beneficial, although in many instances their use is not justified. Certainly the best time to apply a fungicide is between the stages of flag leaf just emerging (growth stage 8) to heads (or ears) completely emerged (growth stage 10.5). Other factors to consider include:

- What is the yield potential of the wheat? This should be close to 40 bu/acre, but can go up or down depending on the price of wheat.
- What is the price of the wheat?
- What is the growth stage of the wheat? A foliar disease such as leaf rust does the most harm when it is severe at early stages such as heading, flowering and milk (see table below). Rust development at soft or hard dough is less damaging, and probably won't pay for the cost of applying the chemical.

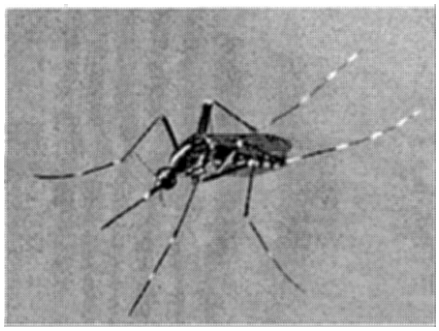
Approximate percent loss of yield due to wheat leaf rust at different combinations of rust severity and growth stage of wheat.

	Severity (%) of leaf rust on the flag leaf				
Growth stage	10	25	40	65	100
Flowering	10	15	20	30	35
Milk	2	5	8	14	20
Soft dough	1	3	4	7	10
Hard dough	1	1	1	3	5

- Know what disease you are hoping to control, and know what the reaction of the variety you are growing is to that disease. Some pathogens that cause disease (e.g., leaf rust) can change and adapt to resistance in varieties. Hence, a variety that initially was considered resistant may become susceptible if a new race of the leaf rust fungus appears.
- What is the weather forecast? Hot and dry conditions will inhibit further disease development and hasten ripening, while cool and moist conditions will promote disease and lengthen the period of time for development and filling of grain.
- Considering these factors will help to make a logical evaluation related to the potential value of the chemical application. Many years of fungicide testing at O.S.U. has indicated an average yield increase of approximately 10%. Hence, the indicators that best support a fungicide application include a high yield potential (≥40 bu/A), high disease pressure on the leaves below the flag leaf, a forecast indicating continued cool and moist conditions, and an acceptable grain price.

Mosquito Outbreaks

Russell Wright, Entomologist



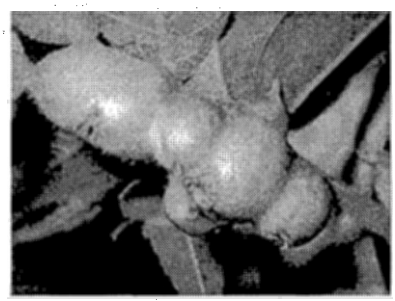
We can expect significant increases of mosquito populations and the resulting complaints anywhere in the state where we have received significant rainfall in the past two to three weeks. This will be particularly the case in southeastern Oklahoma. Most of the species causing a nuisance problem belong to the Genera *Aedes, Ochlerotatus* and *Psorophora.* We often call this group of mosquitoes the "flood water mosquitoes" because their eggs hatch only after they have been flooded, usually from heavy rainfall or flooding caused by such rainfall. Therefore, the adults will be emerging from water that has been standing in roadside ditches, fields, and depressions etc. for over a week to 10 days. Mosquito adults normally live for only two weeks or so, but because of the extensive and reoccurring rains in some areas mosquitoes will continue to be a problem for three to four weeks in some areas as new hatches occurs. For the most recent rainfall data check out: **http://climate.ocs.ou.edu/rainfall_update.html**.

The best defense that folks can take to help prevent bites is to use repellents and to wear lighter colored clothing that is not as attractive to mosquitoes. Folks should also avoid shorts and long sleeve shirts in areas where mosquitoes are abundant. These mosquitoes will be most active in the evening in the two to three hours around sunset. They will also be active if disturbed when walking through an infested area at any time. We do not believe any of the species that will be abundant now are involved in the transmission of any agents causing disease in humans or horses including West Nile Virus.

Time to Control Pecan Phylloxera

Phil Mulder, Extension Entomologist

For commercial growers or homeowners that had that nasty, warty-looking growth all over their pecan tree leaves last year, now is the best time to control it. Damage from pecan phylloxera will

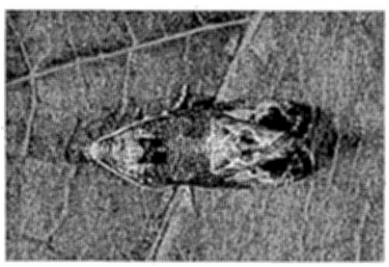


generally not cause the demise of a healthy pecan tree, particularly if the tree is large and has not had a history of phylloxera. In addition, leaf phylloxera is less devastating than stem phylloxera. In extreme cases, stem phylloxera can cut off the transfer of water and nutrients to the pecan crop and eventually kill the tree. Controlling this potential problem does not take a major effort but the timing is very critical. Phylloxera galls generally become evident in mid-season (June to July); however, the time to manage a problem situation is now (April) when the new leaf growth on the trees is less than 2 inches long. Keep in mind, that everyone that sees an occasional gall does not have a treatable problem. This is not a pest that should receive attention in every orchard on every year. If galls were not evident last year, then treatment is certainly not needed this year. Control of phylloxera can be achieved with the use of chemicals such as; Lorsban, Provado or Malathion. Good coverage is a must for such a pest, so be sure to use a minimum of 100 gallons of insecticide mixture per acre. If stem phylloxera is the major culprit or the amount of leaf phylloxera was extensive than two applications might be necessary. These should be applied once at budbreak and then 7-10 days later. Do not use these materials routinely each year for phylloxera, if you do not have the problem, since they can kill beneficial organisms that help keep other organisms in check.

Over the past two years Oklahoma State University and Louisiana State University have been cooperating in studies aimed at developing a degree-day based model for predicting the arrival of phylloxera into an area based on temperature. The first two years of this study are currently being analyzed and data will be presented at this year's Annual OPGA meeting. For those pecan growers that commonly have this problem, please attend the annual meeting to learn more about this pest and its biology and control.

First Capture of Grape Berry Moth

Phil Mulder, Extension Entomologist



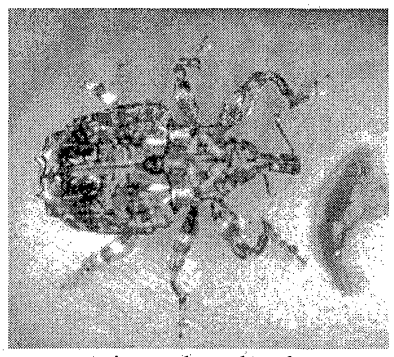
First capture of grape berry moth (GBM) adults occurred in the Perkins and Luther areas between 12 and 14 April. Surprisingly, this coincided exactly with captures in from Arkansas. First capture of moths indicates the biofix for anticipating arrival of damaging larval populations. Based on an April 14 biofix the current number of degree days accumulated from that point, using 50° F is 151.5 and 161.0 degree days in Perkins and Luther, respectively. Furthermore, based on the average number of degrees days, this would mean that larval arrival into the vineyard would be around the 7th and 5th of May for Perkins and Luther, respectively. If these predictions hold true, then scouting for larvae should begin around the 3rd or 4th of May (400 degree days). In Arkansas, entomologists are predicting May 9 as the first hatch of larvae. Growers should be encouraged to check 100 clusters in the edge row closest to the traps and continue to monitor the degree days. During the 400-700 degree day period, if more than 1% damage or larvae are found then treatment should be initiated along the edge rows only. Continue to scout for larvae, but move the three pheromone traps into the center of the vineyard about mid-May. From 1200 degree days on check 50 clusters of grapes in the edge and 50 clusters in the 10th row from the edge. If the 1%

level is reached within the vineyard then treat the entire vineyard. Second generation GBM will occur from1200 to 1600 degree days (dd) while third generation will occur between 2400 and 2700 dd.

Several choices of insecticides are available for GBM control and include both synthetic and organic alternatives. The synthetic choices include; Guthion, Imidan and Sevin while the primary organic choice is Agree or Dipel (or any other Bt formulation labeled for grapes).

Critical Time for Control of Plum Curculio in Fruit Trees

Phil Mulder, Extension Entomologist

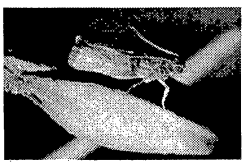


Plum curculio populations in many orchards across the state saw a dramatic increase right about the time of shuck split. This is not an unusual occurrence; however, in some areas, the number of weevils captured was unusually high. In some parts of the station orchard in Perkins, numbers approached nearly 1 plum curculio per trap per day. Keep in mind that the treatment threshold is from 0.06 to 0.1 per trap per day. These high numbers are not indicative of populations across the entire state and probably reflect an increase in the populations for Perkins since we have begun leaving several trees untreated over the past 2-3 years. This further emphasizes the need for thorough treatment in and orchard, once a threshold has been attained. Plum curculio populations will likely be at their highest during the shuck split to second cover spray period.

An important point that should be made concerning treatment of plum curculio, or any other pest, on any commodity is that treatment with Imidan can be very tricky and yet this is probably the number one chemical used by small orchard owners or homeowners. This chemical is extremely sensitive to the pH factor of the final solution; therefore, if Imidan is the chemical of choice then make certain to use some sort of acidifying agent. Ideally, the pH for the spray solution should be around 5.0-5.5, this increases the residual capacity of Imidan. If the solution is neutral (7.0) or higher then breakdown of the chemical is almost immediate (within 24 hrs.). This is often true for many organophosphate chemicals and is easily corrected. Many forms of acidifying agents are available at your nearest chemical distributor; however, one inexpensive source is food grade citric acid. The latter may be hard to obtain in small quantities but it is a efficient and inexpensive way of correcting the pH of a solution.

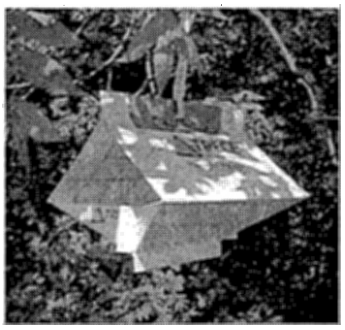
Start Hanging Traps for Pecan Nut Casebearer

Phil Mulder, Extension Entomologist



Now is the time to begin hanging pheromone traps for capturing pecan nut casebearer (PNC) in pecan. Use of 3-5 traps per 50 acre orchard can provide growers the most accurate estimate on when to begin scouting for damaging larval populations of this insect. Separate traps by at least 100

yards, and place each trap at the terminal of a nut-bearing limb. If the orchard is south of I-40 place the traps out by May 1, if it is north of I-40 then you may wait until May 15. Monitor traps regularly, so that you can tell when the first significant flight occurred. Scout for PNC eggs seven to ten day after the first PNC moths are captured in traps. First capture of PNC males generally occurs two to three weeks before the optimum time for application of insecticides. Do not be tempted to apply an insecticide during peak moth capture, since this will usually occur a week or more before a properly timed treatment. Currently, three locations in Oklahoma serve as distributors for traps, trap kits, and pheromone of PNC. These locations in Oklahoma include; Pecan and Ag Company in Bristow, OK, and Helena Chemical Company in Altus and Coweta, OK. In addition, traps and pheromone can be obtained form Great Lakes IPM and Gemplers.



Another useful tool for anticipating treatment of PNC is the predictive simulation model found on the Internet at: **http://agweather.mesonet.ou.edu/models/pecannut/.** This site is only accessible to those who have paid a subscription fee; however, you may obtain local county information on the PNC model from your county extension educator. All county offices have access to the many predictive models used by growers.

Insecticides choices for PNC range from organic materials to synthetic growth regulators and standard chemistries. An excellent choice for homeowners is the product Confirm T/O, which is an insect growth regulator. This material has an excellent residual capacity and does an excellent job controlling PNC larvae. In 2002, Spintor 2SC received a label for use in pecan. The arrival of Spintor into the pecan industry looked very promising, first because of its efficacy in controlling PNC and finally, because there is no grazing restriction. Unfortunately, the biggest restriction of all is likely the price. At the present price of about $550.00 per gallon the cost of using the 4 ounce rate (used in our evaluations) would be $17.18 per acre. This is considerably more than the cost associated with Confirm, which would be around $11.70 per acre at the 8 ounce rate. Unfortunately, you cannot legally have animals graze under pecan trees treated with Confirm. There is no indication that this situation will be remedied in the near future since Dow AgroSciences owns both chemicals. Both of these products provide excellent control of PNC and are gentle on beneficial organisms. In addition, the Dow folks are attempting to pursue an organic label for Spintor.

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