



# OKLAHOMA PECAN GROWERS ASSOCIATION

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Michael Smith, Editor

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### President's Corner

*Robert Schoenecke, OPGA President*

Harvest time 2005 is now here. I trust that everyone is ready and realize that some are now in full harvest. It seems that Oklahoma has in store another good harvest from the reports that I have. Many have indicated that it is as good as 2004. The report on prices may not be as encouraging, however. Guess we will just have to wait and pray for the best.

I was very excited to be able to meet and visit with Dr. Eric Stafne, the new extension specialist. Dr. Stafne has some very good ideas and experience, and is open to suggestions. I believe he will be an outstanding asset to all pecan growers. I look forward to working with him and I would encourage you to get to know Dr. Stafne and welcome him to Oklahoma.

The OPGA Board has had two meetings and identified some goals they want to accomplish this year. First, promote OPGA and work toward making our organization more visible to the consumers of Oklahoma. We are looking for opportunities to set up booth displays to increase membership and promote pecans. We have currently committed to attending the Oklahoma Farm Bureau Convention at Oklahoma City in November and attending Ag Day at the state capitol in April. If you know of any place we should promote the Oklahoma Pecan Growers' Association, please let us know. Visibility and public awareness of our association are key issues to getting producers involved and ultimately working toward another self-help program.

Many good ideas on promotional materials have been suggested and are being pursued. If you are interested in helping promote the health aspects of our product, you can view and print good information from the internet at [ilovepecans.org](http://ilovepecans.org). This information would work well with retail sales on informing your customers.

In closing, I want to thank the officers and directors for their commitment, ideas and their work which has already showed their excitement and enthusiasm toward making our association successful. As you enter the 2005 harvest, may the Lord Bless You with a safe and bountiful harvest.



## Tree Setting Depth Affects Wind Resistance in Pecan

Darrel Sparks

*Journal of the American Pomological Society* 59(3):134-140 2005

### Abstract

Hurricanes Frances, Ivan, and Jeanne inflicted widespread damage to pecan [*Carya illinoensis* (Wangenh.) K. Koch] trees in Georgia during September 2004. Tree damage was either limb breakage, uprooting, or varying degrees of tree tilting without uprooting. The relationship of degree of tree tilt to setting depth at planting was examined. Trees that were set at the same level at which they grew in the nursery did not tilt. Tilting of trees which had been set at a lower depth ranged from a few degrees from upright to total blow over.



Fig. 1. A pecan tree set too deep at planting. The wallowed-out basin at the tree base was created by the tree trunk swaying in the winds. Note the weak lateral root (triangle).



Fig. 2. Pecan trees set too deep at planting. (A) Tree tilting a few degrees from vertical; (B) tree blown over



Fig. 3. Control trees. At planting, these pecan trees were set at the same depth as they sat in the nursery. (A) Well-developed brace roots; (B) weakly developed brace roots and a wallowed-out basin. In B, the weakly developed brace roots were pulled from below ground and one root broke away from the taproot.

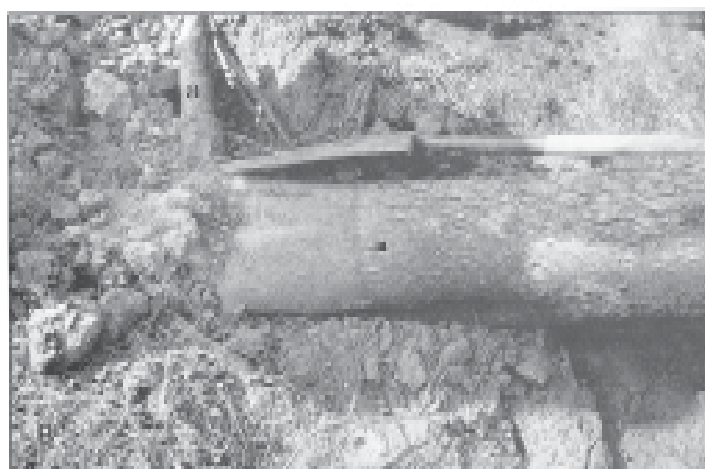


Fig. 4. (A) A 20 year-old pecan tree (trunk circumference 91 cm) that blew over without uprooting due to being set too deep (B) at planting (i.e. 28 cm too deep). The exposed subsurface lateral root (a) in B was dead. Note the soil surface line mark (triangle).

### True bugs in Pecan can Still be a Problem

*Phil Mulder, Extension Entomologist*

Now that many of the early varieties of pecan (Pawnee, Perouque, etc.) have reached shuck split, growers feel their concerns about insect pests are over. This may not be the case for many folks. In areas that have large acreages of soybean, peanut, cotton or alfalfa; stink bug and leaf-footed bug populations can quickly move from one crop to the other, particularly if the orchard environment adjoins any of these types of cropping systems. Damage from these insect pests can occur even in mature pecans that are ready for harvest. Damage from this insect is further compounded by the fact that it is completely invisible until you spend the time, effort and expense to grade or sell the pecans. Once the nut shell is cracked and the kernel meats become visible the edible product may appear very inedible. Black-

ened pits across the kernel meats are characteristic of stink bug and leaf-footed bug feeding. Someone consuming a pecan damaged by these bugs, will be very shocked at the bitter taste associated with this normally delicious treat. Growers retailing shelled or unshelled pecans run an enormous risk in dispersing a very low quality product to consumers. Therefore, caution should be used when growing pecan in areas surrounded by these leguminous crops.

Stink bugs and leaf-footed bugs feed on a wide variety of crops and weeds. Basically, they need seed heads or nuts on which to feed. They have several native weed hosts on which they can survive including; thistle, golden crownsbeard and silver leaf nightshade. For many growers that experience just an occasional problem with these pests, just simply switching to a synthetic pyrethroid (e.g. – Warrior) during the latter half of pecan weevil season, can help reduce or eliminate this problem. If the problem is chronic, late and historically heavy then we suggest growers think seriously about using a trap crop. Trap crops are placed outside a tree planting and are used to serve as a site to attract the bugs in and then monitor, manage and treat them on a much smaller scale. Using small plantings of purple-hull peas, soybeans, cowpeas or pearl millet can serve as excellent trap crops for keeping the true bugs out of your pecan orchard. In addition, for some stink bug species there are pheromones available that can be used in conjunction with the trap crop to add additional attractant to the monitoring and treatment area. Likely, one of best choices of trap crops for our state is pearl millet. This plant is relatively drought tolerant, lasts a long period of time with seed heads, and attracts a wide variety of true bug species. Peas are only a fair choice because they are too determinant and therefore, pods are available for the bugs 30-35 days after planting. Once the pods are gone the crop loses its attraction. In Oklahoma, stink bugs and leaf-footed bugs are normally late season pests, so the trap crop must be one that remains attractive late into the season.

Regardless of trap crop, it should be planted about 50 feet from the edge of the orchard in such a way to allow treatment on both sides. Many growers may not have a boom sprayer (especially if they farm pecans exclusively), therefore, an air blast sprayer with the spray pattern directed into the trap crop from one or both sides can provide excellent control of these pests. The choice of insecticide can be quite broad as long as the trap crop is not harvested or used for seed or feed.

A discussion on using any type of trap crop would be incomplete unless we addressed the three “W’s”; water,

wildlife and weeds. Every plant needs water to grow, so if you wait three weeks after planting to figure out that your pearl millet has not grown much, it may be too late. There can be a negative side to this, since pearl millet can reach eight feet in height with good irrigation or rainfall. This could make it more of a challenge to treat with a boom sprayer. While peas may seem like a good, cheap choice as a trap crop, deer and other wildlife love it more than stink bugs, be certain you select the best option for your trap crop. Finally, like any other plant, the young trap crop cannot compete with an equally good stand of johnsongrass, so good weed control is a necessity.

### New Pecan & Fruit Extension Specialist

Eric T. Stafne has recently been appointed extension horticulturist at Oklahoma State University with responsibilities in pecans, grapes, and peaches. Stafne has a 75% Extension and 25% research appointment. Originally from Michigan, Stafne received his bachelor of science degree in Forestry from Michigan State University in 1993. His graduate work was done at the University of Arkansas, where he completed his M.S. degree in horticulture (1999) and Ph.D. in Plant Science (2005).

Stafne's professional experience includes a stint as a U.S. Peace Corps agroforestry extension volunteer in Senegal, West Africa from 1994 to 1996. After receiving his master's degree he was employed by the Agricultural Research Service (ARS-USDA) at the Sugarcane Field Station in Canal Point, Florida. There, he was an agricultural research technician in the sugarcane breeding program. He returned to Arkansas in 2001 to start his doctoral program, and also work as a research specialist in the small fruit breeding program under Dr. John R. Clark.

### NEW Pecan Scab Model

*Albert Sutherland, CPH, CCA*

*Oklahoma Mesonet Agricultural Program Coordinator*

WOW, the NEW Pecan Scab Model

It's new, it's improved, it's 100% natural!

These phrases have been used so often in product advertising that they have become words that prompt us to tune out to what comes next. In most cases, if we keep listening we had better be prepared for a large helping of

grandiose claims and wildly stretched truths.

While all of the claims above fit the Oklahoma Mesonet's NEW Pecan Scab Model, I hope this won't cause you to shy away. If you'll spend just a few minutes of reading, you'll find out why this new Oklahoma Mesonet product provides a whole new level of disease management decision support.

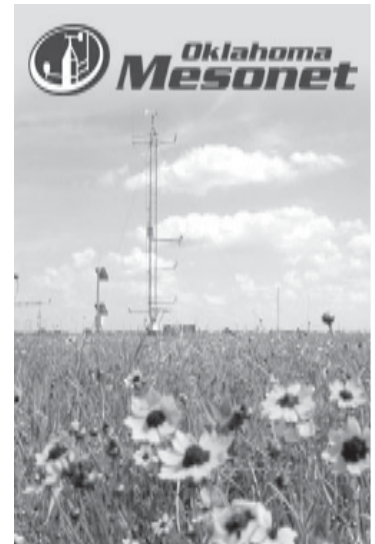
The intent behind the Oklahoma Mesonet pest models is to provide an additional management tool to help you decide when pest control measures are needed. The Oklahoma Mesonet NEW Pecan Scab Model builds on work done for the original Pecan Scab Model. In research conducted by Sharon von Broembsen and others at Perkins Research Station, disease hour parameters were established for pecan varieties. These researchers found that the "scab" hours during the last 14 days were an excellent indicator of the likelihood of pecan scab infection. For scab sensitive varieties, infection was likely after 10 scab hours. For moderately susceptible varieties, such as Maramec or Shawnee, the threshold is 20 scab hours. Native pecans and resistant varieties can be exposed to 30 scab hours before an infection becomes likely. If a fungicide is applied at or just before these scab hour thresholds are reached, the pecan crop will be protected from scab infection. A scab hour is defined as one hour of air temperature at or above 70°F and relative humidity at or above 90%.

Based on this pecan research, the Oklahoma Mesonet created the original Oklahoma Pecan Scab Model. This model is still available at no cost on the Oklahoma AgWeather website, <http://agweather.mesonet.org>. The model output is a table showing the accumulation of scab hours for each day from March 1 of the current season for each Oklahoma Mesonet tower location.

So now let's look at how the NEW Pecan Scab Model is a new and improved version of the older Pecan Scab Model?

### GRAPHICAL DISPLAY

One of the first things you'll notice is a new graphics-based data display format. You can still look at tables, such



as the Seasonal Scab Hours Table, but the new graphs make it easier to see scab hour trends. Both the Fungicide Timing Decision Support and 18-Day Scab Hours Graph products are presented as graphs that show scab hours over an 18 day period. When the graph lines are flat, no scab hours are accumulating. When the graph lines are climbing, so are the number of scab hours. If a Last Fungicide Application date is entered, the Fungicide Timing Decision Support graph will show no infection hours for 14 days after the date entered. The model assumes a 14 day “fungicide control window” following an application of a labeled fungicide.

### FORECAST

The National Weather Service ETA forecast is being used to calculate a forecast of pecan scab hours. While no forecast is an exact predictor of what will happen, it does provide a strong indication of what is likely to occur. The forecast provides you more lead time. With more lead time you can be proactive, rather than strictly reactive in managing pecan scab. The forecast is updated every 12 hours.

### HOURLY UPDATES

A very important feature of the NEW Pecan Scab Model is easily overlooked. It is the fact that the NEW Pecan Scab Model is updated hourly instead of once a day, like the older Pecan Scab Model. That means you can check the model in the morning and then again at lunch and see how the scab hours have changed over the morning period. Each hour data from the Oklahoma Mesonet replaces the forecasted data.

### HISTORICAL PERSPECTIVE

Along with the new graphs comes a whole new set of historical information. On the Fungicide Timing Decision Support and 18-Day Scab Hours Graph products, you’ll find a graph line that shows the 10-year average of scab hour accumulation. This indicates the “typical” rate of scab hour accumulation for the 18-day window shown on the graph. On these same graphs, you’ll also find a graph line that shows last year’s scab hour accumulation.

If you prefer to look at table data, check out the Historical Daily Scab Hours Table.

There are two other graph products with historical data. One of these is the Historical Daily Scab Hours Graph. First time users of this product typically dismiss it as just a heap of confusing lines. But if you’ll take some time to turn off and on the lines corresponding to different years, you’ll find that it provides valuable information about when the

days with the highest disease hours have occurred. This chart shows the 10-year average and the daily scab hour accumulation for each year used to calculate the average.

The other historical graph is a little easier to read. It is the Historical Cumulative Scab Hours Graph. This product shows the accumulation of scab hours for the entire season for each of ten years and a 10-year average. Look close and you’ll find the current year as a partially completed line up through today’s date. Knowing how scab hours are accumulating this season in comparison to other years provides an indicator of how much pecan scab pressure your crop is facing compared to a “typical” year.

### STATEWIDE MAPS

Two statewide maps are online to provide a “big picture” perspective of pecan scab hours. The Statewide Cumulative Scab Hours Map provides a statewide look at the number of pecan scab hours that have accumulated since March 1st of the current year.

Maybe the map that is most useful is the statewide 14-Day Statewide Cumulative Scab Hours Map. This Oklahoma map shows the accumulation of the pecan scab hours over the last 14 days. Pecan scab research showed that only scab hours over the last 14 days should be used to determine the likelihood of disease infection. This map can be used to see if other nearby Mesonet towers indicate higher or lower scab infection potential. The nearest Mesonet tower location may not be the best indicator of disease potential in your pecan orchard.

### WXSCOPE PLUGIN

The product displays for the NEW Pecan Scab Model rely on the use of the Oklahoma Mesonet WxScope Plugin software. This FREE software runs inside your web browser to display Oklahoma Mesonet data. While it takes a little time to download the software, you only have to download it once. It will automatically run in the background each time you go online to the Oklahoma AgWeather website. It will not run when you go to other websites. The WxScope Plugin speeds up data display, since only data is sent from the Oklahoma Mesonet servers to your computer. Your computer creates the maps and graphs, so that you can zoom in and out of the map, turn graph lines off and on, or view radar data. If you have any questions about loading or using the WxScope Plugin, please call the Oklahoma Mesonet help desk at 405-325-3231 or send an email to:

[operator@operations.mesonet.org](mailto:operator@operations.mesonet.org).

Technical support is available at no cost from 7:00 AM

to 6:00 PM, Monday through Friday.

Okay, so the NEW Pecan Scab Model is new and improved, but how is it “100% natural?”

While the Internet and computer are far from natural, these technologies allow us to monitor the weather patterns and how the pecan scab fungus will react. So we can use the Internet to monitor a very natural process, weather impacting a living organism and its impact on your pecan crop.

Please, contact me with any questions or comments about the pecan scab models. You can reach me, Al Sutherland, by email at [albert.sutherland@okstate.edu](mailto:albert.sutherland@okstate.edu) or by phone at 405-224-2216.

### 2005 Pecan Season

*Michael Smith*

The 2005 season is near its end and I thought I would pass along some of my observations. We need dry weather for harvest, but in most areas of Oklahoma it has been so dry that an occasional rain would be welcomed. Hopefully, the cold fall weather will come in nice and gentle so the trees have time to acclimate to cold temperatures.

Many areas of Oklahoma had extremely large amounts of fruit loss from 1<sup>st</sup> generation pecan nut casebearer and later heavy fruit drop from hickory shuckworm. In some cases the damage exceeded 80% of the original crop.

Many areas of Oklahoma also experienced severe drought resulting in small, undersized nuts (Fig. 1). This was especially true for early ripening cultivars, such as ‘Pawnee’, ‘Kanza’, ‘Peruque’, etc. August rains that fell in many parts of the state were too late to affect size of early maturing cultivars since the shell had began to harden. Later maturing cultivars had not began shell hardening and rapidly gained nut size. Irrigation may be more important on early maturing cultivars than on later maturing cultivars since



Fig. 1. ‘Pawnee’ nuts from irrigated trees on the left and non-irrigated trees on the right. Trees were located in the same orchard.



Fig. 2. ‘Pawnee’ pecans with the kernel exposed and extending beyond the shell. These nuts did not show any signs of germination. Similar problems were observed on ‘Kanza’.

those that mature early complete most of their fruit development while Oklahoma is typically the driest.

The drought followed by plentiful moisture during August at certain sites also caused some unusual problems. First, abundant moisture combined with healthy, vigorous trees caused the kernels to fill so much that in some instances the kernel broke the shell (Fig. 2). This condition seemed to occur more on certain trees rather than randomly throughout the orchard. It was prevalent on those cultivars that were in shell hardening at the time the rains began. Nuts of later maturing cultivars grew rapidly, although still reflecting an early season drought, then later filled their kernels. A second problem associated with the drought followed by copious August rain was “water split”. Water split occurs in drought conditions when the kernel is near full expansion but in the water stage. Rain occurring at this critical time allows the kernel to absorb water so fast that it splits the “skin” (testa) of the kernel (cotyledon). This causes the “water” (liquid endosperm) to leak out, killing the shuck (involucre) tissue and causing a black, shiny, sunken area on the shuck. The nut will normally



Fig. 3. Germinated ‘Pawnee’ pecan. Note the root (radicle) extending beyond the shell on the distal end of the nut.

drop within seven to 10 days after water split. In some instances the split will go through the skin of the kernel, the shell (pericarp) and the shuck. The split typically follows the length of the nut rather than going around the nut. Water split is more severe on sandy sites than those soils with a high clay content. This can occur on any cultivar or native pecan tree, but is particularly bad on 'Wichita' and this year substantial amounts were observed on 'Pawnee'. Much of this year's August fruit drop that was attributed to pecan weevil was actually the result of "water split".

Another problem that rarely occurs in Oklahoma is pregermination (vivipary) (Fig. 3). Nut germination while on the tree has been associated with tree stress, in this case drought, and warm temperatures when the nut matures. Normally, fall conditions in Oklahoma are too cool for germination to occur, but this fall temperatures have been exceptionally warm. I have only observed a few germinated nuts this season, but most seasons I don't see any in Oklahoma. We may experience more problems with embryo rot than normal since this problem results from arrested germination, an early stage of pregermination. Pregermination is frequently a major problem in southern Texas.

I wish you a fast, prosperous and safe harvest season.

### 911 Address

Oklahoma is in the process of replacing route and box numbers with street addresses to improve response time in case of emergency. Soon after the new address is issued the Post Office begins returning mail that bears the old address to the sender. As soon as you get a new address, please send the address revision to Janice Landgraf, RR 1 Box 148, Madill, OK 73446 or email her at [okpecan@trinex.net](mailto:okpecan@trinex.net).

## Membership Application

We invite you to become a member of the Oklahoma Pecan Growers' Association. Membership includes the *OPGA Newsletter*, *Pecan South* and *Pecan Grower*. Make your checks payable to OPGA and mail to:

**Oklahoma Pecan Growers' Association**  
**Janice Landgraf, Treasurer**  
**RR 1 Box 148**  
**Madill, OK 73446**  
**okpecan@trinex.net (580) 795-7644**

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone ( \_\_\_\_\_ ) \_\_\_\_\_

Renew

New Member

Grower Member ..... \$50.00

Industry Member ..... \$125.00

Extension/Research/Student ..... \$40.00



**Oklahoma Pecan Growers' Association**  
c/o Horticulture & Landscape Architecture  
Oklahoma State University  
360 Agricultural Hall  
Stillwater, OK 74078-6027

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