OKLAHOMA PECAN GROWERS ASSOCIATION

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In This Issue

Endowment

Robert Schoenecke, Past President

I am sure that you are aware of the opportunity afforded to OSU by T. Boone Pickens' gift, as Mike Smith informed us and I am sure that you recognize the impact this could have on the future of our industry. I remember just a few short years ago when Dean McCraw retired and how we, as an industry were concerned about whether this position would be retained. We began an effort to start a check-off program and went to great extents to try to get it passed. During this time OSU saw our concern and efforts, and on "Good Faith" they retained the position. Dr. Eric Stafne was hired as the new extension specialist and we contributed $5,000 for start-up money for Dr. Stafne. The OPGA also contributed $5000 start-up money for the new plant pathology, Dr. Damon Smith. Personally I am unsure that we could be this fortunate when Mike Smith retires in four years. If this endowment is successful then it is guaranteed that this position will be retained and filled.

Mike Smith has indicated that one of our own members, Mr. and Mrs. Haydon, has seen this vision and have set an example for each of us to sacrifice and give accordingly. They recognized that in most areas of life, short term sacrifices can and will provide long term gain. At our last OPGA board meeting the directors voted to give $20,000 toward this endowment and encourage each of our members to participate. Whether you give $25 or $25,000, each gift would help meet the goal. I challenge each member to evaluate your personal commitment toward the future of our industry and give accordingly.

If we are serious about the future of our industry and we want to make a life long impact for the research of our product, then we need to sacrifice and take advantage of this great gift. Remember, "Short Term Sacrifices provides Long Term Gains"!

2008 Growing Season

Michael Smith, OSU Horticulture & Landscape Architecture

The majority of crop reports from southern Oklahoma indicate that the crop is small following abundant production in 2007. Most producers in northern Oklahoma, except in those areas that suffered severe ice damage, report good to excellent crops following crop loss in 2007.

Many cultivars in northern Oklahoma required fruit thinning. Optimum thinning time is from the first week through the last week in August, depending on cultivar and location. Fruit thinning at one-half kernel expansion (Fig. 1) improves return bloom more than thinning at later stages of fruit development. Nut quality will be improved as long as pecans are thinned no later than the gel stage

Fig. 1. Longitudinal view of pecan fruit with the kernel one-half expanded.

(Fig. 2). Later fruit thinning will avoid potential tree damage from breakage and reduce the likelihood of cold injury, but will have little impact on nut quality or return bloom. Fruit thinning requires a shaker equipped with donut pads. Silicon (aerosol can) or grease should be applied between the flap and sling to allow slippage at that location rather than damaging the bark. The smallest shaker that will dislodge the fruit should be used. Three point mounted shakers should be supported by the tractor and not the tree; otherwise, bark damage is likely. The shaker should be clamped on the tree in a location that allows the shaker to be level when engaged. A shaker clamped at an angle is more likely to cause bark damage. Fruit thinning should not be attempted immediately following rain or irrigation since the bark is more susceptible to slippage.

Rainfall has been better than normal over much of Oklahoma, although western parts of the state and particularly the panhandle suffered from drought. Frequent rainfall also means pecan scab is more prevalent than normal (Fig. 3). Some producers applied fungicide up to six times on certain cultivars. This was definitely a year when scab resistance both reduced production costs and allowed production of a quality product with less risk. Native pecans suffered about 20% crop loss from scab and other diseases this year. Cultivars that were moderately susceptible or susceptible to scab and not adequately protected with fungicides suffered more loss than native pecans and in some cases all the crop was lost.

Pecan scab causes crop loss by reducing leaf photosynthesis or inducing leaf loss and depressing nut size or causing fruit abortion. Typically, if the fruit is retained on the tree until harvest, there is little effect on kernel percentage although nuts can be substantially smaller from scab infection. Infections occur primarily on young, expanding tissue. For instance, expanding leaves are susceptible to scab infection, but full expanded, mature leaves are resistant to scab infection. Pecan shucks expand from pollination until shell hardening, and growth in volume is especially rapid during July and early August. Hot temperatures and highly susceptible tissue during this period combined with rain is a formula for scab infection and speedy lesion growth. Fungicides protect tissue from new scab infection, but will not cure existing infections or prevent their growth. When shell hardening begins, fungicide application is no longer beneficial. New infections, after shell hardening begins, do not have enough time to penetrate into the shuck affecting translocation of nutrients into the kernel.

Pecan weevil emerged in large numbers during late July and early August in some locations. Early emerging weevil live around 30 days while weevil emerging from the soil later in the season only live about 14 days. Approximately five days are required from emergence for mating and gestation until females begin to lay eggs.

Pecans kernels are not susceptible to egg laying until

Fig. 2. Longitudinal view of pecan fruit in the gel stage. Note the clear gelatinous layer at the outer edge of the kernel. There is about five days from the beginning of the gel stage and the onset of the dough stage.

they reach the dough stage, but adult pecan weevils (Fig. 4) will probe and feed on the fruit. Blackened areas develop on the shuck from water (liquid endosperm) leaking from the kernel (Fig. 5). Similar symptoms are also produced by water split, shuckworm or stink bug feeding that ruptures the kernel skin (testa) allowing the endosperm to escape. Weevil puncture can be seen with a 10x hand lens (Fig. 6). Shucks will have a white spot where shuckworm enters. Punctures by stink bug are too small to see with a hand lens. Fruit punctured by insects or ruptured during the water stage will have a rotten appearance inside (Fig. 7) and drop within seven days.

When pecans enter the dough stage female weevil begin to lay eggs in the kernel (Fig. 8). The female bores a hole through the shuck, shell and into the kernel, and then turns around and inserts her ovipositor into the hole laying 3 to 6 eggs. The ovipositor is quite flexible since she can lay the eggs over a relatively large area of the kernel from one oviposition hole. When she has completed laying, the hole is plugged with frass (Fig. 9). Larvae then develop and consume the kernel (Fig. 10) and turn cannibalistic if food becomes scarce. Upon maturity, larvae cut a hole in the shell, exit the nut and bore into the ground.

Boots Adams made an interesting observation concerning pecan weevil monitoring. He uses Circle traps to check for pecan weevil emergence on indicator trees (those with heavy densities). These traps are extremely effective and with time they can eliminate most of the weevil under a tree. It appears necessary to use different trees every other year for monitoring; otherwise, depletion of weevil will give a false picture of emergence density.

Pictures can be viewed in color at the OPGA web site (http://www.hortla.okstate.edu/pecan/opga/index.html). Just click on Newsletter and the current issue. The site also has a search engine that allows easy location of information published in past Newsletters. Another source of pecan information is the Pecan Management Page located at http://www.hortla.okstate.edu/pecan/.

Fig. 3. Pecan scab lesions on the shuck of 'Pawnee'. The picture was taken on August 28, after shell hardening.

Fig. 4. Adult pecan weevil.

Fig. 5. Blackened shuck caused by liquid endosperm leaking from the kernel. Typical causes are pecan weevil feeding, shuckworm, stinkbug, and water split.

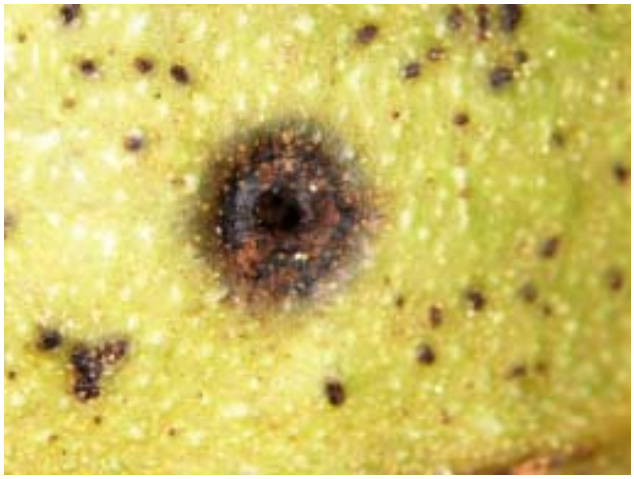

Fig. 6. Shuck punctured by a pecan weevil. Small darkened areas surrounding the hole are the female's foot prints. These become more prominent as the shell hardens; however, the female can penetrate even the hardest pecan shells.

Fig. 7. Fruit that were punctured in the water stage (liquid endosperm) by pecan weevil feeding.

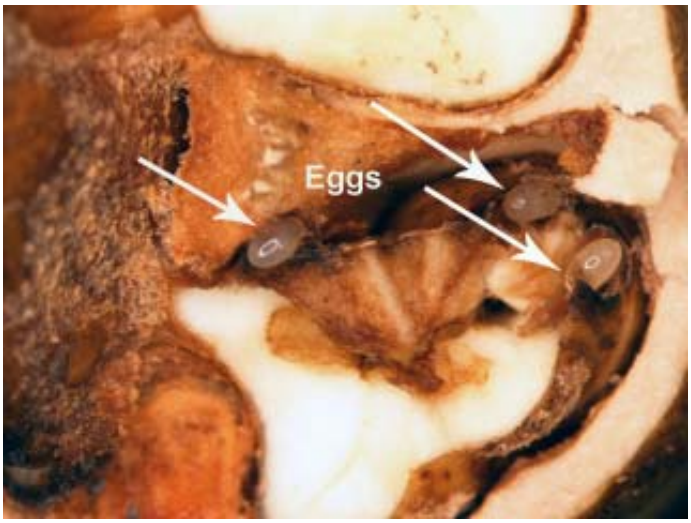

Fig. 8. Three pecan weevil eggs placed in the kernel.

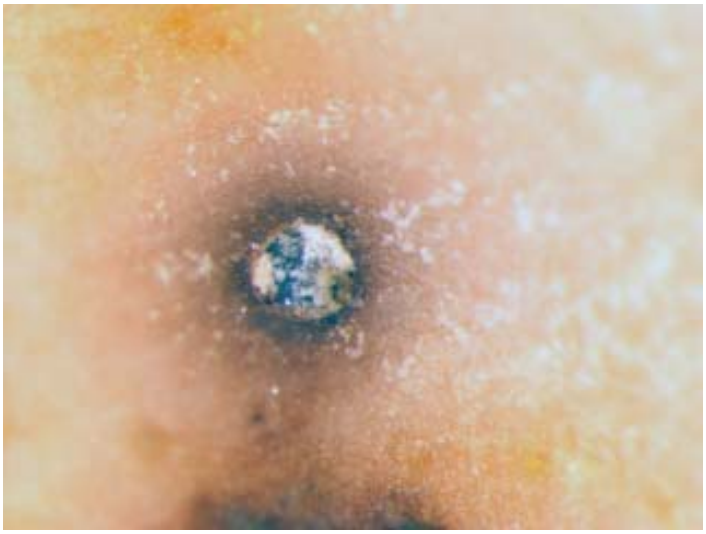

Fig. 9. Frass plug in the shuck following egg deposition.

Fig. 10. Pecans damaged by pecan weevil larvae.

Recap of Pecan Research Presented at the 2008 American Society for Horticultural Science Annual Conference

Eric T. Stafne
OSU Horticulture & Landscape Architecture

Recently, I attended the 2008 American Society for Horticultural Science (ASHS) annual conference in Orlando, Florida. It was a well-attended meeting with some interesting research. These meetings tend to be more about networking than the research, but a nice balance can usually be struck. In the past I have been critical of the amount of research presented on pecans at this meeting. Of course, there are other venues for presentation of research results too, so perhaps I am overly critical. This year a few papers were presented and I want to give a recap of them so you can be aware of the research currently being done.

Evaluation of Resistance to Pecan Scab in a Seedling Progeny Using Detached Leaflets
Patrick Conner, University of Georgia

Pecan scab is a devastating disease in most pecan growing regions, but in order to select for resistance in a breeding program more information is needed on how pecans resist the disease. With that in mind, Dr. Conner used a detached leaf experiment. He used a population that he knew should segregate for resistance. How did he know that? Well, by designing a cross between a resistant cultivar and a susceptible cultivar. In the resulting progeny, there will be some that will be resistant and some susceptible. The leaflets were removed at full expansion and sprayed with water containing pecan scab. They were then placed in a plastic bag in a growth chamber and checked one week and two weeks after the inoculation. He found that two weeks was a better time period than one week for determining disease susceptibility. This method will be used to evaluate pecan scab resistance in breeding progenies, thus making a quick determination whether or not a particular seedling has inherited the resistance or not. Once a seedling is found to be susceptible it can be excluded from further evaluation.

Effect of Planting Time and Seed Treatment on Germination and Growth of Pecan Seed
Patrick Conner, University of Georgia

Pecan seedlings are used as rootstocks for cultivars. The ideal situation is to stratify (a cold treatment) the seed for 60 days prior to planting. Some times this is not done, but does it really affect how the seedling will grow? According to this experiment, it does. Stratified seeds resulted in better germination rates (9% more than non-stratified), faster emergence (three weeks earlier), and greater seedling height (16 inches vs. 14 inches). Even though non-stratified seed will work, stratification will improve the success and hasten the process. This could be beneficial to nurseries that produce pecan seedling for grafting or for growers who wish to produce their own rootstock for grafting by increasing efficiency in number of seeds needed and having a better seedling when it is time to graft.

Morphological and Photosynthetic Characteristics of Sun and Shade Pecan Leaves
Leonardo Lombardini, Hermann Restrepo Diaz, and Astrid Volder, Texas A&M University

Pecans have been around a long time, yet we still don't fully understand them very well at all. This experiment was aimed at identifying how leaves differ if they are formed under sun or shade conditions. Two cultivars were examined, 'Pawnee' and 'Stuart'. Leaves were selected from exterior canopy or interior canopy for examination. The epidermis (outer layer) characteristics were identified, as well as leaf area, and chlorophyll content. Results indicated that the stomatal density, leaf area, and leaflet area were all greater in sun-exposed leaves. Chlorophyll content did not differ according to where leaves grew, but photosynthesis (measured as carbon assimilation rate) was greater for sun exposed leaves during the growing season, but evened out by October. The two cultivars did not differ much in any category. The results of this study may help to understand canopy management and the need to provide adequate light for maintenance of plant productivity. Ultimately, this work could help optimize pruning and hedging techniques.

Variation in Anatomy and Carbon Isotope Discrimination in Leaves of Pecan Populations from Mexico and the United States
Madhulika Sagaram, University of Florida, Leonardo Lombardini, Texas A&M University, L.J. Grauke, USDA-ARS

Pecans grow over a large natural range, but how do trees differ in different locations? This study was done to help provide a better idea of the ecogeographic variation that pecans exhibit within their native range. Leaves were collected from Mexican and U.S. pecan populations to look at their anatomy as well as carbon isotopes. Stomatal density and stomatal index were used as anatomical indicators. Most of the data was inconclusive, but pre-

cipitation seemed to play an important role in the stomatal density and stomatal index of the Mexican populations. The U.S. populations did not display the same pattern, however. The carbon isotope analysis revealed no clear pattern. We know that variation exists between these populations, but how to quantify those differences is not always easy. Discovering which differences are potentially important for breeding should be a high priority to improve pecan production and provide future growers with more options.

Response of Two Pecan Cultivars to Spring Freeze Injury
Lenny Wells, University of Georgia

Oklahoma is not the only location that was hit hard by the Easter freeze of 2007. After the freeze occurred in Georgia, Dr. Wells assessed four trees each of 'Kiowa' and 'Desirable'. He gave them a rating of either no damage or severe damage, and then flagged ten exterior terminal branches per tree from which to collect data. On four different dates he assessed shoot length, number of terminals, bearing pistillate flowers or fruit, and cluster size. Dr. Wells found that freeze-damaged 'Desirable' produced pistillate flowers from secondary buds, but the flowers were abnormal and they had shorter shoots, reduced flower and fruit retention, less chlorophyll, and decreased leaf nitrogen concentration when compared to non-damaged trees. The leaf zinc concentration was higher in freeze damaged 'Desirable'. For freeze-damaged 'Kiowa', the trees had longer shoots, but no pistillate flowers. The trees also had less chlorophyll, leaf nitrogen, and leaf magnesium; however, leaf phosphorous and leaf potassium were higher in damaged trees than non-damaged 'Kiowa' trees. Overall, these observations show that cultivars vary in their response to spring freeze damage. Potentially, photosynthesis may be negatively affected based on the reduced leaf chlorophyll content.

Rains Bring Pecan Weevils in Oklahoma
Phil Mulder
OSU Entomology & Plant Pathology

Recent rains across the state have brought a flush of pecan weevils out of the soil and into our pecan trees. Many commercial growers have treated once already on early maturing cultivars; however, they also realize that the job is not complete. Keep in mind, pecan weevils can continue to emerge and seek oviposition sites through the month of October. We must be diligent in combating this pest each year. Once the majority of a crop has reached the dough stage (no water inside) of development the pecans are ready for weevil egg-laying activity.

When applications are made for pecan weevil and trapping is used in that area to monitor for these insects, it is important to remove the trap tops and allow dead and/or dieing weevils to attempt to climb back into the canopy. They will continue to be exposed to a toxic level of chemical and will eventually die. You have to assume that the insecticide chosen will provide 7-10 days of control. To help determine the next spray date, once seven days has passed since the last application, trap tops can be replaced and monitoring should continue.

Even in commercial operations where weevils are controlled each year it is not unusual to make 2-3 applications for this pest. This can be particularly true for those that retail their product to the general public. You can ill afford to have customers discover one weevil in a sample of nuts. For those wholesaling their product a little weevil damage can be sorted out by the cleaner, grower or buyer; however, the problem can continue to compound itself in the future. Many things will go into making the decision to treat or not treat for this important pest, but problems ignored in one year can affect future infestations.

Concerning insecticide choices; many growers are making a transition for pecan weevil control by using 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 in most 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 LD_{50} 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 LD_{50} of 79 and 632, respectively. This suggests that these newer pyrethroids are potentially more toxic to the applicator than Sevin insecticide.

A relatively new insecticide available this year for pecan weevil and other pecan insects is Endigo ZC®, which represents a combination product containing the same active ingredients as Warrior® (lambda-cyhalothrin - 9.48%)

and Centric® (thiamethoxam – 12.6%). Availability may be limited in 2008; however, product should be widely available in 2009. The confusing issue with these many similar products is that Warrior® contains 11.4% active ingredient and another formulation called Warrior II® contains 22.8% active ingredient; however, the rates applied per acre are adjusted by half for the latter compound, since it contains twice as much active ingredient. Endigo® rates are also adjusted for the lower amount of active ingredient per gallon. An additional insecticide that has gained popularity with growers on many commodities, including pecan is a product called Silencer®. This product contains the same active ingredient as Warrior® only a little more (12.7%), yet it is labeled at the same rate as Warrior®. Many growers have been purchasing Silencer® for considerably less than Warrior® and this simply makes good business sense. I have not had the opportunity to evaluate this product, but because it is the same active ingredient and I have received excellent testimonials from other commodity groups, I would suspect its performance is comparable to Warrior®.

When making insecticide choices, carefully examine university trials and ask others about performance of new materials. This puzzle on active ingredients may help explain why activity on pecan weevil may vary. 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 (Warrior® and Proaxis®) 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 chemical applications; **read the label** and know what you're getting for your money.

Bacterial Leaf Scorch Disease of Pecan

Damon L. Smith
OSU Entomology & Plant Pathology

Many Oklahoma growers are probably already familiar with fungal leaf scorch (FLS) of pecan. Fungal leaf scorch is caused by a "disease complex" or several organisms acting together. One of the organisms involved is *Glomerella cingulata* which is the pathogen that also causes pecan anthracnose. The other organism implicated in the FLS disease complex is a *Phomopsis* sp. Fungal leaf scorch has been implicated in premature leaf drop and reduced fruit quality in the southeastern U.S. Symptoms of FLS include brown areas that expand from the edges of leaves toward the center. In some cases, a dark brownish to black margin separating green tissue and brown tissue has been reported. While anthracnose and FLS may not be problems in Oklahoma every year, they can be of concern in years with larger than normal amounts of precipitation.

Another type of leaf scorch can also occur on pecans. Bacterial leaf scorch (BLS) of ornamental host, pecans, and other horticultural crops and Pierce's disease (PD) of grape is caused by a bacterium, *Xylella fastidiosa*. Recently, BLS has been observed on shade trees as far north as New Jersey and on pecans in Georgia and Louisiana. Bacterial leaf scorch is becoming an increasingly important disease of shade trees and ornamentals in Oklahoma and may be of concern in the future for pecan growers.

While BLS has not been identified on pecan in Oklahoma, it has been reported on other trees in the State. Bacterial leaf scorch was first reported on elm (*Ulmus americanus*) in Oklahoma in 2004. *Xylella fastidiosa* was identified from weeds and trees in 8 of 12 Oklahoma counties in a subsequent survey conducted in 2005. To date, BLS has been confirmed in Oklahoma to affect oak, elm, sycamore, and mulberry, but not pecan. *Xylella fastidiosa* can be transmitted by grafts, which elevates concern about the incidence of the disease in Oklahoma pecan production. Differences in genetic composition have been identified among strains of *X. fastidiosa*. These differences are responsible for host specificity by strains of the bacterium, where only certain strains will infect and cause disease on certain hosts. Recent studies suggest that this is complicated, as some strains can cause disease on additional hosts during laboratory cross-inoculation experiments. While the predominant *X. fastidiosa* strain in Oklahoma infects shade trees, other strains have been discovered in the state. The extent of their host range and impact on agriculture and horticulture is unknown.

Xylella fastidiosa is mainly transmitted by insect vectors from the sharpshooter subfamily of leafhoppers (Cicadellidae: Cicadellinae) and spittlebug family (Cercopidae). As many as 39 different species of these insects have the capability to transmit *X. fastidiosa*. In California and Texas, the most important insect vector is *Homalodisca coagulata* (glassy-winged sharpshooter). This vector feeds on many woody and herbaceous plants and can transmit *X. fastidiosa* strains that cause PD. *Oncometopia* spp. are also important vectors of *X.*

fastidiosa. In 2003 and 2004, a survey for principal leafhoppers that transmit PD-associated strains of *X. fastidiosa* was performed in southern counties of Oklahoma. Several important leafhopper species were recovered over the two-year period, but *H. coagulata* and *Oncometopia spp.* were not identified.

Symptoms of BLS are perennial and will appear late in the summer or early fall when weather conditions are predominately hot and dry. Typically, chlorosis and green fading colors will develop at the edges of leaves, which dry and turn brown. Marginal browning can take on an undulating appearance as it moves toward the veins of the leaf. A yellow to red-brown band may be present between the green and scorched areas of the leaves. Leaf symptoms of BLS can look very similar to drought stress symptoms, however, the yellow or red-brown band between green and scorched areas will be absent in trees suffering from drought stress. Leaf symptoms of zinc and magnesium deficiency look very different from BLS. Leaves with zinc deficiency will be uniformly yellow (chlorotic), small, and "strap-like." Magnesium deficiency will present with the characteristic "Christmas tree" island of green in the center of leaflets. Initially leaf symptoms of BLS will be noted on a single shoot or at the upper edge of the canopy. Over a period of years, the symptoms will progress throughout the entire canopy and a uniform "thinning" of the canopy will be noted. Wilting of shoots is not typically associated with BLS.

Unfortunately there is no chemical control or cure for BLS. If BLS is identified in a nursery setting, affected trees should be removed and destroyed. Those growers concerned about transmitting the bacterium via scion, may find hot-water treatments as a preventative measure. Recent research in Louisiana production has shown that transmission of *X. fastidiosa* following grafting was significantly reduced by submersion of infected scion in water at 115 degrees F for 30 minutes. The only way to confirm whether a tree is infected by the pathogen that causes BLS is to submit samples to the Plant Disease and Insect Diagnostic Laboratory (PDIDL). The sample should include a twig with several symptomatic leaves attached. The leaves should be placed within a ziptop bag with no added moisture and mailed to the PDIDL. Be sure to include a **completed** sample form with your sample. Sample forms can be found at http://www.ento.okstate.edu/pddl/pdidlform.pdf. Any pertinent digital pictures should be sent to jen.olson@okstate.edu. Results for the BLS test are generally available in 3 days.

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Country of Origin Labeling Regulations and Pecans

Debate has swirled around country of origin labeling (COOL) for agricultural commodities for a number of years. The USDA has provided guidelines in the past and rules have been promulgated for specific products. Now, however, a new collection of COOL regulations, rules that for the first time explicitly cover pecans, are set to take effect on September 30, 2008. These regulations are likely to have some impact on the operations of many pecan growers, processors, and retailers. Following is a brief description of the new COOL regulations as they relate to pecans.

First of all, it's important to understand that the labeling requirements discussed below apply only to retailers. Food service operations and the like are specifically excluded. Also, the regulations employ a definition of "retailer" derived from the Perishable Agricultural Commodities Act (PACA). This act defines a retail operation as one that deals in perishable agricultural commodities and has annual receipts for those commodities of $230,000 or more. Thus, many small operations are excluded from the COOL mandates. Furthermore, the regulations only apply to raw pecans, in-shell or shelled. Processed foods are specifically excluded from COOL requirements. Roasted pecans are considered processed foods, as are pecans which have been coated or otherwise incorporated as an ingredient in some other food or confection.

Where they do apply, the COOL regulations basically require that country of origin information be provided to consumers by retailers. No one specific means of doing this is mandated. For example, country of origin information may be provided by means of a label, stamp, placard, or some other clear and visible sign on the display or bin containing the pecans where they are sold to the public. Raw pecans in consumer-ready packages, however, must be individually labeled with country of origin information. No size or placement requirements are mandated for any of this labeling, but it must be "legible and conspicuous."

Note that these labeling requirements apply whether or not the pecans are domestic or imported. In other words, even pecans grown in the U.S. are required to be labeled with country of origin information. However, domestic pecans may be labeled with state, region, or locality information in lieu of a country designation. Therefore, "Product of Oklahoma" or "Grown in Sapulpa, Oklahoma" would be acceptable. Imported pecans, on the other hand, will be required to bear specific country information. The regulations recognize that domestic and imported pecans may be commingled. In that case, the rules state that country of origin information must include all the countries from which the pecans may have come.

In order to allow retailers to comply with the COOL regulations, the rules mandate that growers, shellers, and brokers up and down the supply chain must maintain records of country of origin information for the pecans they buy and sell. As noted above, pecans that are grown and retailed by an operation with perishable commodity receipts of less than $230,000 are exempt from these recordkeeping requirements. In theory a grower, sheller, or broker who sells pecans exclusively to food service or food processing operations are also exempt. But assuring that none of these pecans are eventually retailed might be difficult. In any case, assuming that a grower is not exempt, it is the responsibility of the grower to originate country of origin information for his or her pecans. A simple affidavit is sufficient to accomplish this. The regulations stipulate that country of origin information may be provided either on the product itself, on the master shipping container, or in a document that accompanies the product through retail sale. It is then the responsibility of subsequent buyers and sellers to maintain this information through the supply chain. In other words, a person who buys or sells pecans that are destined for retail sale will be required to must maintain country of origin records for those pecans. These records must be maintained for a period of one year from the date of the transaction. They must also be made available to USDA inspectors upon request. Failure to comply with these recordkeeping requirements may result in fines.

The COOL regulations described above are slated to take effect on September 30, 2008. However, there is a 6-month study/implementation period following this date during which issues related to implementation will be examined and addressed. A number of questions about exactly how these regulations will be implemented and enforced are yet to be answered. For example, there is very little guidance at the moment regarding the kind of paperwork that will be sufficient to meet the stated recordkeeping requirements. The expectation is that the six-month implementation period following September 30 will allow many of these questions to be answered. More guidance from the USDA should be forthcoming by the end of March, 2009. In the meantime, pecan growers should consider how the new COOL regulations may apply to their operations and think about their various options for compliance.

For more information on COOL, visit the USDA Agricultural Marketing Service's home page at http://www.ams.usda.gov and click on the "Country of Origin Labeling" link under "Spotlights."

Horticulture Pecan Research Endowment

Michael Smith
OSU Horticulture & Landscape Architecture

During July, I initiated a drive to create an Endowed Professorship with the focus on horticultural research on pecan. The goal is to reach at least $250,000 before matching funds, courtesy of T. Boone Pickens, are expended. About $40,000,000 remains to match contributions. When successful the fund will grow to $500,000 with Mr. Pickens match, and then the state of Oklahoma will contribute an additional 25% match, i.e. another $125,000. Most of the interest from this Endowment will be used to support pecan research. Some money will return to the principal to reduce the negative effects of inflation. A small amount of the interest will be used for salary enhancement so that the best scientist can be attracted to this position. If we do not achieve the goal before matching funds are utilized, the donated money will be converted to an endowment for pecan research, but contributions will not be matched and an Endowed Professorship will not be created. Either way, growers demonstrate that pecan research in Oklahoma is important and they are willing to support such activity.

As of this writing, contributions total $41,800, and the Oklahoma Pecan Growers' Association has pledged $20,000. There have been contributions from Oklahoma and Kansas producers, and some in Texas have expressed their intention to contribute to the Endowment. I'm sure that as pecan crops are harvested and sold there will be more contributions in 2008. Companies have also been contacted that derive part of their business from pecans. This is a chance for all who are interested in the future of pecans to stand up and be counted. Creation of an Endowed Professorship will ensure that pecan research at O.S.U. continues indefinitely. Checks should be made out to the **O.S.U. Foundation** and mailed to **Michael Smith, Department of Horticulture and Landscape Architecture, 358 Agricultural Hall, Oklahoma State University, Stillwater, OK 74078.** Contributions to the Endowment are tax deductable.

Below is a list of those contributing to the Endowment.

Paul and Maxine Haydon
Bert and Elizabeth Blumer
J.D. and Dwayne Scott
G.F. Parsons
Edward L. Boyd, Jr.
John Barnes
Henry Bellmon
Alvin and Debra Stein
Michael and Carole Smith
Virginia Merritt Autry

Oklahoma State Pecan Show 2008

Becky Carroll
OSU Horticulture & Landscape Architecture

Be sure to get the word out to everyone to enter their best pecans in the state show this year. There will not be any qualifying regional or district pecan shows this year. However, some county/area shows will be held at the discretion of the County Extension Educator. Growers are encouraged to participate in county shows if available. Winning entries from county shows will be sent to the state show. If no county/area show is available, growers may enter pecans directly by sending samples to Becky Carroll, 358 Ag Hall, OSU, Stillwater, OK 74078. Samples should arrive by January 16, 2009.

Samples should be entered in a sealed plastic or paper bag. Label the bag on the outside and place a label inside the bag. Information should include exhibitors name and address, county, and type of pecan entered. Be sure to follow the guidelines that are listed below before sending entries.

A few helpful hints: Take the time to select pecans that are all the same cultivar, or same size and shape natives – don't send mixed pecans. Select uniform, clean, uncracked pecans. Presentation can make the difference between two very similar samples. Make sure to send 2 pounds of pecans in a labeled and sealed bag.

<u>General Rules and Guidelines</u>

- All entries must be grown in Oklahoma during the current season.
- Each entry shall consist of two pounds of nuts.
- Entries deemed unworthy by the judges will not compete for awards.
- Label each entry as to exhibitor's name, address and cultivar of nuts. If more than one native (seedling) pecan exhibit is made, identify the nuts from separate trees by numbers. Only one exhibit of each cultivar or native tree may be entered by one individual.
- Each entry will compete in one of the following 28 classes:

1. Apache
2. Barton
3. Burkett
4. Cheyenne
5. Choctaw
6. Comanche
7. Graking
8. Gratex
9. Kanza
10. Kiowa
11. Mahan
12. Maramec
13. Mohawk
14. Pawnee
15. Peruque
16. SanSaba Improved
17. Schley (eastern)
18. Shawnee
19. Shoshoni
20. Sioux
21. Squirrels Delight
22. Stuart
23. Success
24. Western
25. Wichita
26. Other Cultivars
27. Large-Native (seedling) 60 nuts/lb or larger
28. Small-Native (seedling) more than 60 nuts/lb

- Each grower is allowed to participate at one county show of his or her choice.
- Each grower is allowed to enter one entry in each show class with the exception of Class 26 (Other Cultivars), Class 27 (Large-seedling) and Class 28 (Small- seedling)
- Each grower may enter one entry from each native (seedling) tree.
- Entries should be shipped or mailed to arrive at the show at least one day prior to the deadline.
- County pecan shows will not be affected by these rules and procedures.
- Only first and second place winners in each class of each county/area show will be eligible to compete in the State Pecan Show. Following each county show, eligible entries will be placed in cold storage, and judged before the Oklahoma Pecan Growers Annual Meeting. At that time, the winning entries will be displayed with awards and recognitions. All entries will become the property of the OPGA.
- First, second, and third place winners in each class at the State Pecan Show will receive ribbons.
- State Pecan Show Special Awards – Plaques will be awarded for the largest pecan entry, the entry having the highest kernel percentage, the champion native and the best entry of the show.
- If a qualifying show is not available, growers may submit entries in accordance with these guidelines directly to the State Show. Entries in the state show must be received by January 16, 2009 at the following address:

Oklahoma State University
Horticulture & Landscape Architecture
Attn: Becky Carroll
358 Ag Hall
Stillwater, OK 74078

Oklahoma Pecan Production

YEAR	NATIVE OR SEEDLINGS	PRICE (cents/lb)	VARIETIES	PRICE (cents/lb)	TOTAL	AVG. PRICE ALL PECANS (cents/lb)
1944	12,600	15.8	1,400	29.5	14,000	17.2
1945	24,500	20.0	1,500	31.8	26,000	20.7
1946	5,900	28.7	1,100	42.2	7,000	30.8
1947	40,900	17.5	3,100	31.0	44,000	18.5
1948	14,000	10.5	1,000	25.0	15,000	11.5
1949	21,960	18.0	2,040	27.0	24,000	18.8
1950	6,370	26.0	630	38.0	7,000	27.1
1951	23,500	18.0	1,500	29.0	25,000	18.7
1952	2,600	18.5	340	30.0	3,000	19.8
1953	26,000	15.0	1,600	24.1	27,600	15.5
1954	13,000	26.5	1,500	34.0	14,500	27.2
1955	29,700	29.5	3,300	38.5	33,000	30.3
1956	6,500	18.5	600	31.0	7,100	19.5
1957	28,800	21.5	2,200	30.5	31,000	22.1
1958	13,900	27.5	1,600	36.5	15,500	28.4
1959	8,500	31.0	500	44.0	9,000	31.7
1960	38,000	29.0	3,000	36.5	41,000	29.6
1961	10,900	17.0	700	29.0	11,600	17.7
1962	6,800	32.0	800	43.0	7,600	33.1
1963	15,000	18.5	1,000	30.0	15,600	19.2
1964	35,000	20.5	2,000	30.0	37,000	21.0
1965	40,000	16.0	3,000	25.0	43,000	16.6
1966	5,800	27.0	200	36.0	6,000	27.2
1967	49,000	30.7	4,000	40.0	53,000	30.7
1968	1,400	32.0	100	45.0	1,500	45.0
1969	13,800	28.0	700	41.0	14,500	28.6
1970	7,700	36.0	300	49.0	8,000	36.4
1971	17,500	29.0	1,500	45.0	19,000	30.3
1972	3,600	39.0	600	52.0	4,200	40.9
1973	26,000	29.0	2,000	53.0	28,000	30.7
1974	2,300	36.0	200	59.0	2,500	37.8
1975	18,500	32.0	1,500	55.0	20,000	33.7
1976	1,500	60.0	800	90.0	2,300	70.4
1977	12,000	46.0	1,500	77.0	13,500	49.4
1978	13,500	56.0	2,000	89.0	15,500	60.3
1979	9,000	41.0	1,000	81.0	10,000	45.0
1980	3,000	68.0	500	115.0	3,500	74.7
1981	44,500	44.5	2,500	66.5	47,000	45.7
1982	4,200	57.0	800	137.0	5,000	69.0

1983	7,000	43.0	1,000	86.0	8,000	48.4
1984	23,000	50.0	2,000	91.0	25,000	53.3
1985	8,500	53.0	1,500	85.0	10,000	57.8
1986	13,500	59.0	1,500	96.5	15,000	62.8
1987	11,000	38.0	1,000	79.3	12,000	41.4
1988	44,500	42.2	2,500	64.6	47,000	43.4
1989	8,000	59.1	1,000	98.2	9,000	63.4
1990	4,200	87.0	800	114.0	5,000	88.2
1991	16,000	76.4	1,000	130.0	17,000	79.6
1992	8,500	108.0	500	150.0	9,000	110.3
1993	17,000	39.0	1,000	71.0	18,000	40.8
1994	10,700	69.8	1,300	151.0	12,000	78.6
1995	16,500	78.0	2,500	110.0	19,000	82.2
1996	1,500	52.0	500	99.0	2,000	63.8
1997	32,000	55.0	3,000	76.0	35,000	56.8
1998	1,800	68.0	200	122.0	2,000	73.4
1999	60,000	55.0	3,000	88.0	63,000	56.6
2000	2,300	80.0	200	130.0	2,500	84.0
2001	18,000	42.0	2,000	53.0	20,000	43.1
2002	8,500	50.0	1,500	60.0	10,000	51.5
2003	4,500	80.0	1,500	112.0	6,000	88.0
2004	22,000	135.0	6,000	160.0	28,000	140.0
2005	15,000	120.0	6,000	190.0	21,000	140.0
2006	12,000	115.0	5,000	170.0	17,000	131.0
2007	27,000	75.0	3,000	225.0	30,000	90.0
Avg of all years	16,418	45.3	1,627	72.8	18,039	48.7
Avg of 10 years	17,110	82.0	2,840	131.0	19,950	89.8

OPGA Pecan Source List

Due to large number of requests for pecans, pecan related items and services, a list of OPGA members was compiled a few years ago. It is time to update information to keep the list current. To be included on the web page, a grower must fill out the following information and return to the address below. If your business is already on the list, send in a new form or email (becky.carroll@okstate.edu) if no changes are needed.

Growers must be current OPGA members.

The list of growers and services is divided by county. This directory is a great tool for growers and consumers. The list is currently available at the following web site - http://www.hortla.okstate.edu/pecan/opga/pecansource.pdf.

Please fill out completely and return form to:
Oklahoma State University
Becky Carroll, Horticulture Dept
358 Ag Hall
Stillwater, OK 74078

Name of Business_____

Owner or contact person_____

County where business is located _____

Mailing Address_____

_____

Phone _____

Fax _____

Email _____

Website _____

Circle all that you would like to include:

Native Pecans	Improved Cultivars	Retail Shop
Wholesale	Mail Order	Buyer
Custom Cracking	Custom Cleaning	Custom Processing
Custom Harvester	Custom Grafting	Graftwood Supplier
Custom Manager	Other _____	

Oklahoma Pecan Growers' Association Officers and Directors

2008-2009

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Bob Knight — 18400 S. 129 West Avenue Sapulpa, OK 74066 — *Day Phone* 918-321-6011 — *Cell Phone* 918-607-5544
2008-2010 — knutnet@aol.com — *Evening Phone* 918-299-0409 — *Fax* 918-321-5962

Past President

Robert Schoenecke — RR 2 Box 272B Meeker, OK 74855 — *Day Phone* — *Cell Phone* 405-615-4253
2008-2010 — RKSchoenecke1@juno.com — *Evening Phone* 405-273-2808 — *Fax*

Vice President

Mark Sandmann — 751 S. Research Road Atoka, OK 74525 — *Day Phone* 580-513-5569 — *Cell Phone* 580-513-5569
2008-2010 — *Evening Phone* 580-513-5569 — *Fax*

Secretary

Deann Smith — 41502 Benson Park Road Shawnee, OK 74801 — *Day Phone* 405-273-1235 — *Cell Phone* 405-409-4665
2008-2010 — zantillyd@gmail.com — *Evening Phone* 405-273-1235 — *Fax* 405-273-9545

Treasurer

Janice Landgraf — RR 1 Box 148 Madill, OK 73446 — *Day Phone* 580-795-7644 — *Cell Phone* 580-677-0858
2008-2010 — okpecan@trinex.net — *Evening Phone* — *Fax* 580-795-7798

Editor

Mike Smith — 358 Ag Hall Stillwater, OK 74078-6027 — *Day Phone* 405-744-6463 — *Cell Phone* 405-880-5605
2008-2010 — mike.smith@okstate.edu — *Evening Phone* 918-358-5796 — *Fax* 405-744-9709

Board of Directors

Kearby Weatherly — 12505 Smith Road Okmulgee, OK 74447 — *Day Phone* 918-756-1866 — *Cell Phone* 918-407-3079
2007-2010 — kearby@wildblue.net — *Evening Phone* — *Farm* 918-756-6509

Martin Mount — 10971 N 115th Road Beggs, OK 74421-2953 — *Day Phone* 918-267-5000 — *Cell Phone* 918-759-4950
2008-2011 — mkla@beggstelco.net — *Evening Phone* 918-267-4664 — *Fax* 918-267-5000

Dustin Olds — 54151 East 65 Road, Miami, OK 74354 — *Day Phone* 918-541-1398 — *Cell Phone* 918-961-1460
2006-2009 — dsolds@miamination.com — *Evening Phone* — *Fax*

Randy Bryant — 22270 County Rd 1475 Ada, OK 74820 — *Day Phone* 580-332-0839 — *Cell Phone* 580-320-1444
2007-2010 — info@enjoypecans.com — *Evening Phone* 580-332-7329 — *Fax*

Dick Hoffman — 7104 E. 32nd Avenue Stillwater, OK 74074 — *Day Phone* 405-372-3583 — *Cell Phone*
2007-2010 — *Evening Phone* 405-372-3583 — *Fax*

Jim Smith — 41502 Benson Park Road Shawnee, OK 74801 — *Day Phone* 405-273-1235 — *Cell Phone* 405-409-4654
2008-2011 — zantillyd@gmail.com — *Evening Phone* 405-273-1235 — *Fax*

Virginia Autry — PO Box 185 Hennessey, OK 73742-0185 — *Day Phone* 405-853-4469 — *Cell Phone*
2006-2009 — birchcreekfarms@yahoo.com — *Evening Phone* — *Fax*

Charles Rohla — 2510 Sam Noble Parkway Ardmore, OK 73401 — *Day Phone* 580-224-6451 — *Cell Phone* 580-490-1253
2008-2011 — ctrohla@noble.org — *Evening Phone* 580-456-7522 — *Fax* 580-224-6423

Bill Clark — 15481 S. 4060 Road Oologah, OK 74053 — *Day Phone* 918-371-4488 — *Cell Phone* 918-527-1043
2008-2011 — *Evening Phone* — *Fax*

National Pecan Growers Council Representative

Scott Landgraf — RR 1 Box 148 Madill, OK 73446 — *Day Phone* 580-795-3930 — *Cell Phone*
okpecan@trinex.net — *Evening Phone* 580-795-7644 — *Fax* 580-795-7798

Advisor

Eric Stafne — 358 Ag Hall Stillwater, OK 74078-6027 — *Day Phone* 405-744-5409 — *Cell Phone*
eric.t.stafne@okstate.edu — *Evening Phone* — *Fax*

Updated June 30, 2008

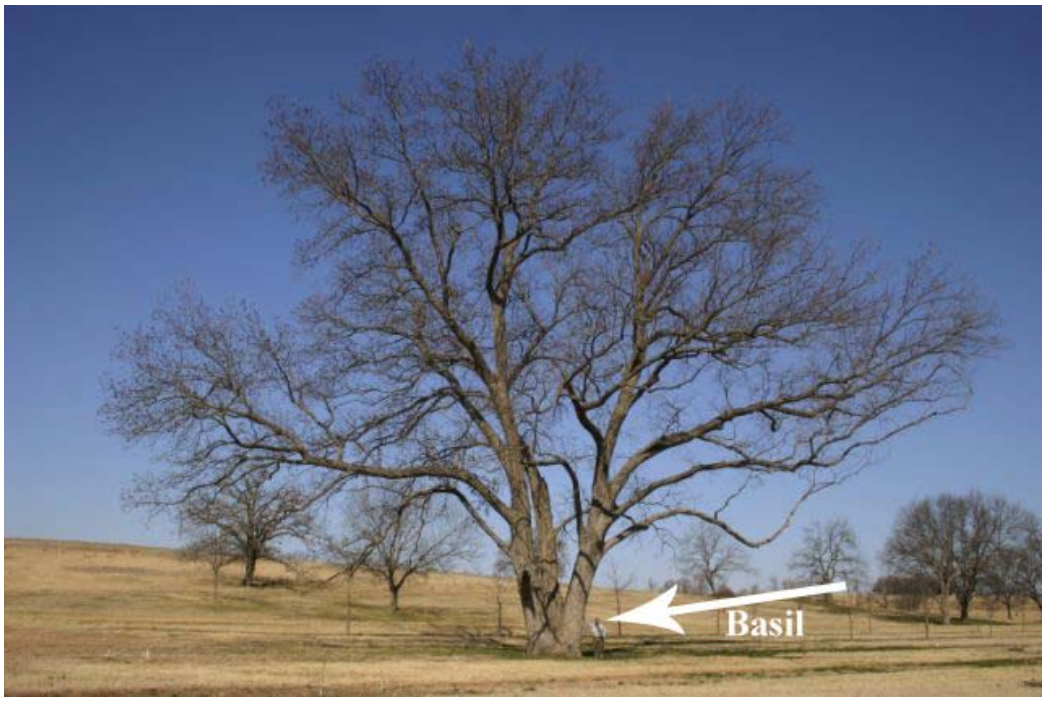
Problem Solved

Dear Mike,

Being processed of an inquiring mind, I was distressed that the actual height of the "Frances" pecan tree is unknown. Rather than send Mr. Savage to the top of the tree, which I'm sure nobody wants to do, let's apply grade-school geometry.

I set my dividers to Mr. Savage's height in the photo and "walk" the dividers to the top of the tree. I get 17 "Basils." The National Bureau of Standards defines a "Basil" as 68" (give or take).

Thus, the "Frances" Pecan Tree is 96' 4" tally. Problem solved!



Sincerely,
Boots Adams

TAKING ORDERS FOR CIRCLE PECAN WEEVIL TRAPS.

$17.50 each. Contact Suzen Ihle at 918-367-6168.

NEW PECAN BOOK — by Wes Rice., Pecans - Volume II, A Grower's Perspective.

Color pictures and descriptions of over 80 cultivars, including Oklahoma releases. Updates on all facets of pecan culture. Over 350 color pictures. Perfect bound —$ 32.95 + 2.50 S&H and 8% sales tax or AG exemption. Hard cover — $46.95 + 3.00 S&H + 8% sales tax or AG exemption. Wes Rice, 580-765-7049, 333 Braden School Rd., Ponca City, OK 74604

ORCHARD MANAGER

I am looking for a person with pecan growing/operating experience to manage a recently planted/grafted 80 acre pecan orchard. Must have references and the ability to operate and maintain most equipment appropriate for an irrigated pecan orchard. The orchard is located approximately 5 miles north of Tulsa between Skiatook and Tulsa.

Salary is negotiable and on-site housing can be provided as part of the salary package. Responsibilities will include the establishment of a new orchard on an adjacent 100 acres. Please submit your resume, salary requirements, and references to Dewey Bartlett at 1648 S. Boston Avenue, Tulsa, OK 74119. Any questions, please call at 918 587-4154 x100.

PECAN TREE SALE

Walls Family Farm
Container Grown 7 gal Tree Can
Grafted varieties 4-7ft. $18.00
Native Pecan 7 ft. $10.00
Winston 972-563-3991 Marilyn 972-235-3991
wallsfarm@sbcglobal.net
wallsfamilyfarm.com

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 ( ) _____ email: _____

❑ 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
358 Agricultural Hall
Stillwater, OK 74078-6027

Return Service Requested