



# OKLAHOMA PECAN GROWERS ASSOCIATION

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Michael Smith, Editor

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## A STEP FORWARD FOR THE US PECAN INDUSTRY

*Charles Rohla*

The prices from the past year made us realize we definitely have a need for the pecan industry to become united. The relationship between pecan shellers and growers has not always been positive. In fact many growers are at the mercy of the shellers when it comes to the prices they receive for their pecans. With a limited number of shellers, the shellers typically have the upper hand and are able to control the pecan market. However, a couple of years ago some growers took control and started marketing pecans to China. This generated an increased interest in pecans by the Chinese moving some of the control away from the shellers. After the Chinese market really took off, the buyers started going directly to growers and by passing the shellers. During this time the National Pecan Growers Council (NPGC) started working on receiving funding from the USDA-FAS for international promotion of pecans. In 2011, NPGC received funds and started promotional work in Canada, India and China. This effort was called US Pecans. The US Pecans team was made up of representatives from Georgia, Texas and New Mexico. These representatives made numerous trips internationally promoting pecans at food shows and directly to some of the largest importers of nuts in these countries. After seeing the success of the US Pecans missions, the shellers started participating in these missions. It was critical that the shellers and growers work together to increase the international market of pecans. The National Pecan Growers Council and the National Pecan Shellers Association agreed to work together to promote pecans internationally.

***Oklahoma Pecan Growers' Association is published 4 times per year and is a benefit or being an association member. Contact the Oklahoma Pecan Growers' Association c/o Horticulture & Landscape Architecture, Oklahoma State University, 358 Agriculture Hall Stillwater, OK 74078-6027 for further information.***

Therefore, a new organization was started in 2013 with representatives from both the shellers and growers. This new organization is the US Pecan Council. The US Pecan Council Board is made up of a grower, a sheller and a grower-sheller from three pecan regions. The three regions are the southeast (Florida, Georgia, Alabama and South Carolina), central (Mississippi, Louisiana, Arkansas, Oklahoma, Texas, Kansas and Missouri) and the western region (New Mexico, Arizona and California). According to the by-laws of the US Pecan Council there can only be two representatives from one state. The representatives for the central region are Mike Adams (grower), Dan York (sheller) and Scott Landgraf (grower-sheller). The US Pecan Council will take over the responsibility of the US Pecan team for these international promotion missions. Many people thought that the growers and shellers would never work together, but if this industry plans to continue to move forward, everyone that is involved in producing and processing pecans will have to work together. This collaborative effort will be a positive step for the pecan industry. If you would like more information feel free to contact me.

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## **PECAN LEAF ANALYSIS INSTRUCTIONS** \*Collect 100 leaflets for each sample.

*Becky Carroll*

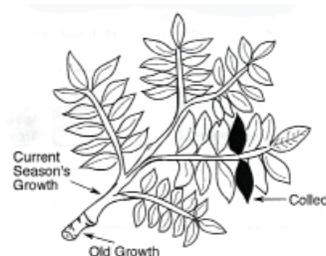
Maintaining proper nutrition is vital to a successful pecan orchard. A balance of proper nutritional levels will provide the best conditions to produce a consistent crop. Applying unneeded fertilizer without knowing nutritional levels can be an unnecessary expense, detrimental to the environment, and harmful to the health of your pecan trees. Inadequate fertilization may affect the availability of other nutrients, can reduce growth, and may reduce cold hardiness and the overall health of the trees. Soil samples are useful to determine pre-plant nutrition needs and soil pH but the most reliable indicator of pecan tree fertility needs is leaf analysis. Leaf analysis can be used to diagnose or confirm nutrient problems after symptoms appear. More importantly, these tests can determine nutrient shortages or excesses before symptoms develop or yield is reduced. This service is available through the OSU county extension centers across Oklahoma. For a list of the county extension offices - <http://countyext2.okstate.edu>.

To ensure accurate results, the following instructions should be followed:

\*Collect leaf samples in JULY.

\*Do not mix varieties into one sample. Native trees from one area may be sampled as one variety.

\*Samples should be from uniform trees. It may be from one tree or several acres. Different soil types and management practices may need separate leaf samples.



\*Select the middle pair of leaflets located on the middle leaf of current season's growth. Remove leaves with a downward or backward pull so that the leaf stem remains attached to the leaf.

\*Choose leaves from accessible shoots on different sides of the trees. Do not collect from suckers, water sprouts, or limbs that do not receive sunlight.

\* Avoid leaves with insect, disease, or mechanical injury or leaves that are not representative of the sample.

\* Do not use galvanized containers, rubber gloves or come in contact with materials that may contaminate the samples.

\*Remove spray residue or dirt by dipping leaves in tap water for one minute or less.

\*After washing, spread the leaflets out to air-dry until they will crumble. Don't expose to direct sunlight or heat to dry.

\*Place dry leaflets in a paper bag and return to the county extension office.

\*Provide identification for each sample when presenting to the extension office.

Samples will be sent to the OSU Soils, Water, and Forage Laboratory for analysis. The fee for each sample is \$18. Results of analysis will be returned to the extension office for nutrient recommendations.

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### **3,000 WAYS TO MANAGE A PECAN ORCHARD**

*Walt Thurn*

There are numerous variables involved in managing a pecan orchard, successfully. This simplified account will list several such variables and present them in the order they typically appear during the growing season.

One of the first variables to be considered is the amount of Nitrogen to apply to the orchard floor in the early spring. This parameter is typically determined by referring to the previous year's leaf analysis results. And such results are expressed as the recommended Nitrogen based on a geographic acre, i.e. 43,560 square feet. Typical recommendations might be 100, 125, or 150 pounds of actual Nitrogen per acre.

Next is the foliar Zinc application. A popular product to meet the Zinc requirement is called 'Pecan Special'. The manufacturer's application rate is 5 lbs of product per 100 gallons of solution. A grower might choose to apply Zinc once, twice, or three times during the leaf growing season.

Then there is the definition of a 'pecan acre'. A widely accepted definition is 30 square feet of trunk area. But that parameter varies widely when applying Zinc inasmuch as the leaf area per tree increases with each application. Keep in mind also that the number of trees per acre will decrease each year.

How about determining the gallons of spray solution per acre? Some use 100 gallons per acre depending on their equipment, while others may choose 125 or 150 gallons per acre.

Then there are the variables of sprayer pressure and tractor speed while spraying. Growers may choose 15, 20, or 25 psi sprayer pressure and likewise may choose tractor speeds of 2, 3, or 4 mph while spraying.

Each grower must decide whether or not to spray for pecan nut casebearer. The number of applications may range from 0, 1, or 2.

One of the more critical pecan orchard management variables is the control of scab. Depending on cultivar susceptibility and orchard location, fungicide applications may range from 1, 2, 3, 4, or 5 applications per season. This decision presents a real challenge inasmuch as rarely do the conditions at the nearest Mesonet station match the conditions of a particular orchard. It causes a smile when the scab hours listed at Mesonet stations are carried out to two decimal places.

After shell hardening it is time to shift focus to weevil control. The individual grower determines the number and timing of pesticide applications based on local conditions and weevil entrapment numbers. Again, a particular grower may opt to apply pesticide once, twice, or three times prior to shuck split. A popular pesticide for weevil control is Warrior or its generics. The recommended application rate ranges from 2.56 oz per acre to 5.12 oz per acre, i.e. tremendous variability combined with the nebulous definition of a 'pecan acre'.

In summary by considering the numerous combinations of the limited variables mentioned above, there are in excess of 3,000 available managerial strategies. To put it another way, if a grower thinks that they are managing their orchard the same way as their neighbor, there is a 1 in 3,000 chance that is true.

Growers look to research data to learn cause and affect relationships for individual variables in a controlled environment. From that point the grower must integrate such findings into their individual orchard loca-

tion and conditions in order to maximize overall orchard productivity.

And remember, productivity is not limited to how well we do with what we have, but rather how well we do with or total opportunity.

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### **TRISTATE MEETING PECAN CROP FORECAST**

2013 Forecasts

State	2008 USDA	2009 USDA	2010 USDA	2011 USDA	2012 USDA	TriState 6-15-2013	TriState 5-15-2013
AL	8.0	14.0	5.0	19.0	4.0	10.0	10.0
AR	1.5	2.5	1.1	2.5	2.2	1.0	1.0
AZ	17.5	20.0	22.0	18.5	20.0	20.0	19.0
CA	3.8	3.9	5.7	3.7	4.8	4.0	4.0
FL	1.7	3.1	1.5	4.0	2.0	1.0	2.0
GA	70.0	100.0	75.0	102.0	100.0	85.0	80.0
KS	1.9	1.0	3.0	1.5	3.0	0.00	2.0
LA	5.0	9.0	20.0	10.0	15.0	5.0	12.0
MS	1.5	3.0	2.1	5.0	2.5	1.0	2.0
MO	0.9	2.0	0.8	1.5	2.5	1.0	2.0
NM	43.0	68.0	66.0	61.0	65.0	52.0	55.0
NC	0.7	NA	0.00	0.00	0.00	0.00	0.00
OK	5.0	13.5	20.0	6.0	25.0	9.0	8.0
SC	3.4	2.0	1.5	3.0	1.8	1.0	2.0
TX	30.0	60.0	70.0	32.0	55.0	32.0	35.0
U.S.	193.9	302.0	293.7	269.7	302.8	222.0	234.0

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### ***BISCONGIAUXIA (HYPOXYLON) DIEBACK AND CANKER OF PECAN***

*Jennifer Olson, Plant Disease Diagnostician*

The most common disease of pecan is scab, but there is a new disease that is threatening trees in Oklahoma. This disease is common on other hardwood trees including oak, hickory and hackberry. Recently, we have observed Hypoxylon dieback and canker on pecan trees in Oklahoma. This disease has been a problem in East Texas for some time, so it is not surprising that the disease has shown up in our area. The disease is caused by the fungus *Biscogniauxia atropunctata* (formerly *Hypoxylon atropunctatum*). The common name for the disease is *Biscogniauxia* or Hypoxylon canker. I will refer to it as Hypoxylon canker since it is the older, more common name for the disease.

Hypoxylon dieback and canker is caused by an opportunistic fungus. The fungus will colonize outer and inner bark, and wait for an opportunity to invade the sapwood. As long as trees have adequate moisture and minimal stress, they are able to resist invasions by the fungus. When trees are stressed (particularly drought stressed), they are unable to resist the invasion.

Trees affected by Hypoxylon dieback and canker may die quickly or after several years. As the canker (sunken or swollen area on a branch) develops, water and nutrient movement is slowed so that leaves may yel-

low and prematurely drop. Dieback may be visible in the upper branches (Figure 1). Over time, the canker will girdle the branch and it will die. Often, one or a few scaffolds are killed before the main trunk becomes affected (Figure 2). If the disease were noted at this point, it may be possible to stop the disease by removing symptomatic branches. Once the main trunk is diseased, it is only a matter of time before the tree dies.

The Hypoxylon fungus spreads by wind-blown spores and the fruiting structure will appear when the branch or trunk is near death. The outer layers of bark will fall off and a discolored area will be visible (Figure 3). This is the stroma (fruiting structure) of the fungus. The stroma may be visible in small patches and over-time, the area will enlarge. Depending on the maturity of the fungus, the color of the stroma may be white, tan, brown or black. In pecan, the stroma is usually black when it becomes visible. The stroma releases spores which are blown to other susceptible trees in the area and new invasions are initiated. Trees under stress are more likely to become diseased than trees that are healthy and well-cared for.

Management of Hypoxylon canker begins with prevention. Trees should be watered during periods of drought. Avoid injury to the trunk during mowing operations and practice proper pruning techniques. Remove dying and dead braches as they appear. Diseased wood should be disposed of by burning or burial. If you suspect that your trees have Hypoxylon canker and you would like to have the disease confirmed, please contact your local county extension educator. They can take digital images of the tree which will be submitted to the Plant Disease and Insect Diagnostic Laboratory (PDIDL). In cases where branch or trunk sections are available, they can arrange for the submission of samples to the PDIDL for microscopic examination. For more information, please review EPP-7620, *Biscogniauxia* (Hypoxylon) Canker and Dieback of Trees. It can be viewed at the following web address.

<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2312/EPP-7620web.pdf>

Fig. 1. Dieback in a native pecan tree due to Hypoxylon canker.



Fig. 2. One limb was killed by Hypoxylon canker and subsequently removed.



## NOTES ON THE 2013 PECAN CROP

*Michael Smith, OSU Department of Horticulture and Landscape Architecture*

Pecan trees are feeling the effects of the 2011-2012 droughts. A rough estimate is 15% to 20% of the pecan trees lost in the state. The highest tree death reported was 40% of the trees lost in a single orchard. Many trees are totally dead including the root system and others have some living roots with sprouts developing near the crown, but the entire top is dead. In addition to those that died, many trees are damaged. Dead limbs are apparent, primarily at the top of the tree. Trees most affected were those on extremely sandy or heavy clay soils, trees growing in traditional wet areas, or in crowded locations. Trees over all of Oklahoma were impacted. Substantial costs will be incurred to remove dead trees and later to pick-up small to large limbs during harvest.

Severely stressed trees are primary targets for certain tree borers. The flat-headed appletree borer will be prevalent in most orchards, slowing recovery of stressed trees. Adults are  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long and have short antennae, large conspicuous eyes and a noticeable tooth on the forelegs. Adults are dark, metallic brown to green on the upper surface and under the wing covers bright metallic blue (Fig. 1). Larvae are legless and about  $1\frac{1}{4}$  inch long when grown (Fig. 2). Just behind the head the body segment is flattened, giving rise to the name.

Adults are present from March until November, being most abundant in May and June. Adults feed on leaves, preferring the sunny side of the tree. Females mate within a week of emergence and live about one month, feeding and laying eggs. Females lay about 100 eggs in bark crevices that hatch in 15 to 20 days. After hatching larvae chew through bark and feed on living phloem and outer sapwood. Vascular tissue is lost reducing the tree's ability to move water and nutrients through the xylem and carbohydrates, nutrients and other vital materials through the phloem to the roots.

Observations suggest that there were substantial differences in drought susceptibility among cultivars and individual rootstocks. I observed three of five 'Nacono' trees randomized within two tree rows that were severely damaged by drought, but 'Oconee', 'Giles' and 'Kanza' growing in the same area were undamaged. The 'Nacono' trees had several dead branches, delayed budbreak and light yellow foliage; whereas, growth of the other cultivars was normal. Another producer reported 'Peruque' trees had more drought damage than other trees in his orchard. Greater damage to certain cultivars may reflect a higher degree of susceptibility to Hypoxylon canker than other cultivars (see article on Hypoxylon canker in this newsletter).

I also observed certain 'Pawnee' trees in an unirrigated orchard that produced normal sized, well-filled nuts in 2012 while surrounding trees had nuts about one-half size. The difference in tree performance was attributed to rootstock. Trees with normal sized nuts represented about 1% of the population. If we had the ability to clone pecan rootstocks, adaptation to certain environmental challenges could be improved and production enhanced. Native trees also have the same or greater range in performance to drought stress.

Low spring temperatures and late spring frosts were on hand to begin the 2013 growing season. Some orchards were damaged by spring frost; a few orchards had frost damage on three separate occasions. Damage was sporadic across Oklahoma, but more frequent in southern Oklahoma. Little crop remains on frost damaged trees.

Rainfall distribution has been better this spring than the last two years. Most areas of Oklahoma have adequate soil moisture, but are currently in need of rain with no significant chances in the forecast. One of the most frequent discussions at the Oklahoma Pecan Growers' meeting was the exceptional ability of rain storms to split just before reaching the orchard, leaving neighbors with plenty of rain, but hardly a drop in our orchards. I've spent many hours watching lightning and thunderstorms at Hominy or Tulsa without receiving a drop at my orchard. I've also learned that green on radar is just a teaser and doesn't really mean it is raining.

The current estimate for Oklahoma's production is about 9 million pounds. At this point in time that figure is probably about right or maybe a little high. If drought sets in, expect that figure to decline.

Fig. 1. Adult flat-headed appletree borer.

Fig. 2. Flat-headed appletree borer larva.



**AWARDS PRESENTED AT 2013 OPGA MEETING**

Grower of The Year – Jim Smith, Benson Park Pecan, Shawnee, OK  
Grove of The Year – Hauani Creek Pecans, Savage Family, Madill, OK  
Herman Heinrichs Award – Bill Ihle, Bristow, OK

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**2012 STATE PECAN SHOW WINNERS**

Largest Pecan – “Podsednik” – 25.7 nuts/lb, Royce Flaming, Alfalfa County  
Highest % Kernel – “Burkett” – 58.3 % kernel, Brittany Balderas, Tillman County  
Champion Native – 48 % kernel & 68.1 nuts/lb, Jim Smith, Pottawatomie County  
Best of Show – “Maramec” – 57.8 % kernel & 45.5 nuts/lb, Doug Cross, Mayes County



*Classified ads may be placed in the newsletter for free by OPGA members. Send your ad to Mike Smith at [mike.smith@okstate.edu](mailto:mike.smith@okstate.edu) and it will appear in the next newsletter and subsequent newsletters until notification to remove the advertisement.*

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Pecan Cakes – “A Taste of All Seasons” Cake, Suzen Ihle – Bristow, OK  
Pecan Bread & Rolls – “Breakfast Pull-Apart”, Ruth-Ann Hightower, Ralston, OK  
Pecan Cookies – “Mocha Logs”, Linda Bryant, Ada, OK  
Pecan Candy – “Bon-Bons”, Linda Bryant, Ada, OK  
Salted & Spiced Pecans – “Roasted Pecans”, Steve Cook, Ardmore, OK  
Pecan Specialty Food- “Pecan Cheddar Crackers”, Linda Bryant, Ada, OK

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**JUNIOR DIVISION -**

Pecan Pies – “Graham Cracker Pecan Pie” – Hunter Savage, Madill, OK  
Salted & Spiced Pecans – “Deviled Pecans”, Lauren Hoffman, Stillwater, OK

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**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  
Amanda Early, Treasurer  
2115 N. Dobi  
Stillwater, OK 74075  
[amanda.early@okstate.edu](mailto:amanda.early@okstate.edu) 405-744-8800

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