



# OKLAHOMA PECAN GROWERS ASSOCIATION

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Michael Smith, Editor

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## In This Issue

- *Letter from Dean Curl - pg 1*
- *You May be Surprised at the Health Aspect of Pecans - pg 2*
- *A Guide to Nut Tree Culture in North America Vol. 1 - pg 3*
- *Pecan Selections Show Some Sign of Resistance to Insect Damage - pg 3*
- *Pecan Short Course - pg 7*
- *Tips and Lists - pg 7*
- *Pecan Fruiting - pg 7*
- *Pecan Cultivars - pg 8*
- *Pecan eLearning Website Now Ready for Access - pg 9*
- *2004 Pecan Graftwood Sources - pg 10*
- *Best Wishes for our President - pg 11*



Dear Friends and Family of OSU Agriculture:

I am pleased to provide you with this update on the Division of Agricultural Sciences and Natural Resources!

College of Agricultural Sciences and Natural Resources enrollment is holding steady. We have 2,053 undergraduate and 384 graduate majors for a total of 2,437. This year we are awarding to our students a record \$746,445 in academic scholarships, all from private gift funds. That figure is 131% greater than the annual figure of \$323,000 six years ago. Our freshman class is almost 60% larger than six years ago, and about 85% of our freshman return for their sophomore year.

Our students and faculty continue to excel. Five of OSU's top 12 graduating seniors last May were majors in the College of Agriculture Sciences and Natural Resources; the Animal Science Meats Judging Team won 2003 national championship; Bert Fischer was a national finalist for the U.S. Truman, British Marshall, and Gates Cambridge scholarships; Chas Robbins was a recipient of the Rotary Ambassadorial Scholar Award; Ryan Luter was a recipient of the National Phi Kappa Phi Fellowship; the Agricultural Communicators of Tomorrow won nine first-place awards in national contest; Dr. Shelly Sitton serves as National Advisor of Ag Communicators of Tomorrow; Dr. Stan Gilliland was the recipient of the American Dairy Science Association's Award of Honor; twenty of our faculty are Regents Professors; and the Greenseeker Research Team won the USDA Award for Superior Service.

The College's Freshman in Transition program, or FIT, is designed to assist first-year students in making the transition from high school to college. The program emphasizes academics, service, leadership, and extracurricular involvement, and gives students a jump start toward a successful college career.

As with most other state agencies, we are having to cope with sharp reductions in state appropriations. Seven months ago, we undertook a comprehensive planning process designed to not only increase our efficiency and reduce our costs, but to find ways to increase our effectiveness in the achievement of our land-grant mission. We have reorganized Cooperative Extension statewide and on campus, and have developed priority-based interdisciplinary initiatives that we will capitalize on as we design and carry out our future programs of research and extension. We are exploring possible ways to enhance our extramural research support, increase enrollment, and realize savings in administrative costs through restructuring some of our department units.

Our \$18 million state-of-the-art Food and Agricultural Products Research and Technology Center has helped over 630 Oklahoma processors, manufacturers, and entrepreneurs find solutions to technical, business, and marketing

problems since the opening of the Center in 1997. Projects that have been completed have facilitated the start-up of 100 new companies in Oklahoma. Through the Center's efforts, new value-added products are being produced and marketing throughout the state.

The New Products Development Center, joint with the College of Engineering, Architecture, and Technology, is designed to serve the needs of small and rural manufacturers. This new initiative compliments and builds upon the successful work of our application engineers program, providing this important outreach effort with a strong research and development component.

This has been a particularly outstanding year for the Division with respect to research and extension accomplishments. Examples included the further development of new sensor-based precision agriculture technology; the conversion of low-cost biomass to ethanol; assisting the beef industry in development of the Oklahoma Quality Beef Network; advancements with respect to microbial food safety, feed efficiency in cattle, and livestock waste management; sponsorship of the Community Nutrition Education Program, and development of the Initiative of the Future of Rural Oklahoma.

Construction projects either completed during the past year or in progress include the new Swine Teaching and Research Center on West McElroy, the Controlled Environmental Facility on Ridge Road, upgrading of the three computing laboratories, and conference facility at the Kiamichi Forestry Research Center.

Our development effort continues to be successful. We now have 23 endowed professorships and chairs in the Division. I referred earlier to our growth in scholarship funding. The continuation of high level or private support is absolutely critical to our success in accomplishing our ambitious goals and objectives for the Division and achieving new levels of excellence.

Many exciting things are happening in the Division of Agricultural Sciences and Natural Resources. Please know of our gratitude for the vital role you play in the Division's performance & productivity. Thank you for your commitment and loyal support! Please visit the campus at every opportunity, and always let us know how we can be of assistance to you. Our best wishes to you and your family.

Sam E. Curl  
Dean and Director, OSU Division of Agricultural  
Sciences and Natural Resources

## **You May be Surprised at the Health Aspects of Pecans**

*Scott Landgraf*

Health is an important concern for almost everyone, though it may not appear to be so when you watch American eat fast foods. Many of our agriculture products have fantastic nutritional characteristic that fit quite well into heart-healthy diets. The basic food groups contain many of the agricultural commodities we grow, such as fruits, vegetables, whole grains, and various meats and dairy products. Because pecans contain large amounts of fat, many have considered them unhealthy- but recent research has proven quite the contrary.

Research conducted at Loma Linda University, Scott & White Clinic in conjunction with Texas A&M University, and New Mexico State University have all shown that pecans are a heart-healthy food. They have shown through replicated research that consumption of pecans suppresses LDL (low-density lipoprotein, the "bad" cholesterol), while increasing the HDL (high-density lipoprotein, or "good" cholesterol), and further reduce feared triglycerides. The positive effects of pecans can be seen especially in coronary health. Pecans are being compared to the leading cholesterol-lowering medications - pecans increase the good cholesterol.

A retired pharmaceutical representative who grows pecans was researching these health attributes of pecans and gave me a call. He was astounded that when compared to the cholesterol-controlling agent he had spent a career selling, pecans were much better. He said that where pecans had the advantage was that they raised the good cholesterol while lowering the whole cholesterol profile.

Nutritionists are promoting consumption of a significant portion of calories as fats rather than carbohydrates. The America Diabetes Association is promoting the consumption of unsaturated fats for our energy to prevent the onset of Type II diabetes. Nutritionists are pointing to the use of pecans for healthier arteries and reduced blockage in our cardiovascular systems. There is not a better combination of fats and fiber as pecans and other nuts.

For example - a friend, Herman Ledbetter who is seventy years old and still grows pecans near Lubbock, Texas, had severe blockage of the arteries leading away from his heart. His cardiologist put three stints in the blocked arteries and prescribed a low fat - high fiber diet with limited calorie intake. Since Herman was keeping up with the health issue of pecans, he asked his doctor about eating pecans rather than the prescribed diet. The cardiologist said it was

his life and pointed out that pecans were not on the prescribed diet. The doctor told Herman that if he decided to do this experiment, he wanted to monitor the progress. So that is what Herman and his cardiologist did! Herman watched his cholesterol level drop from over 300 to 174, while he lost fifty pounds of weight. The cardiologist did an angioplasty to look at the stints and said the stints were loose in Herman's arteries. As a result, Herman has quit taking any medication and feels the best he has in several years. He even claims his arthritis to be better.

A forty-year-old nutritionist from Texas A&M University followed Herman on the program of the Texas Pecan Grower's Convention and started her own program on vascular health with the statement "Herman has a better lineup of lipids that I do." Even at his elderly age, Herm was in great condition.

I watched my father eat pecans most every day with my mother nagging him about how they were going to make him fat. However, my mother died of coronary heart disease and my father did not. Also, while eating pecans, my father was not overweight as was my mother, who did not eat pecans that were not in foods.

I have begun to eat pecans every day. What about you?

For information about that health aspects of pecans, visit the Web site [www.ilovepecans.org](http://www.ilovepecans.org).

## **A Guide to Nut Tree Culture in North America, Vol. 1**

The successor to NNGA's successful *Nut Tree Culture in America* by Richard Jaynes has been so long in the making that it has evolved into two volumes. A Guide to Nut Tree Culture in North America, Volume 1 is now available.

More than 18 experts offer timely advice and information on nut tree growing. The following is a list of chapter headings and authors:

- History: Spencer Chase and Sandra Anagnostakis
- Propagation of Major Tree Nut Crops Cultivated in North America: Bruce W. Wood
- Rootstocks for Major Tree Nut Crops of North America: Bruce W. Wood
- Pecans: Tommy C, Thompson and George D. Madden
- Pecan Production in the Midwest: William Reid and Kenneth L. Hunt
- Hickories: L.J. Grauke
- Hazelnuts: Shawn A. Mehlenbacher
- Chestnuts: Greg Miller
- Ginkgo, Pine Nuts, Beeches and Oaks: Greg L.

Reighard

- Growth, Flowering and Fruiting: Darrell Sparks
- Mineral Nutrition: Michael W. Smith
- Processing Nut Crops: Stanley J. Kays
- Marketing: Karen L. B. Gast
- Utilizing Nut Trees for Timber Sales: Richard C.

Schlesinger

- Nut Trees for Wildlife: Donald M. Christisen and

Eric W. Kurzejeski

There are over 400 pages divided into 16 chapters. Each chapter was written by an expert in nut growing.

In the words of Dennis Fulbright, editor of this, NNGA's third handbook, "Volume 1, covers the history as well as the "how to's" of nut tree culture, that is, how to plant, graft, fertilize, process, and cultivate nut trees. It also covers the granddaddy of the commercial nut industry, America's nut: the pecan. The well-loved hazelnut and the species that make up the widespread hickory forest of North America are well covered with photos and descriptions. Learn about the chestnut, the newest nut to attempt to go commercial. An excellent chapter covers ginkgos, pine nuts, beeches, and acorns, including their history, biogeography, ecology, and commercial applications. Volume 1 is all that and more plus references."

"In addition to covering nut trees used to promote wildlife diversity there is also a comprehensive chapter devoted to growth and flowering including issues of alternate bearing and fruit drop."

The cost is \$65 for non-members and \$45 for members plus postage of \$5 to a US address or \$10 to an address outside of the US. Become a member and get the book at the member price of \$45 plus postage! Order the book at <http://icserv.com/nnga/nutbooks.htm>.

## **Pecan Selections Show Some Sign of Resistance to Insect Damage**

*J.D. Dutcher, Coastal Plain Experiment Station, Department of Entomology, University of Georgia*

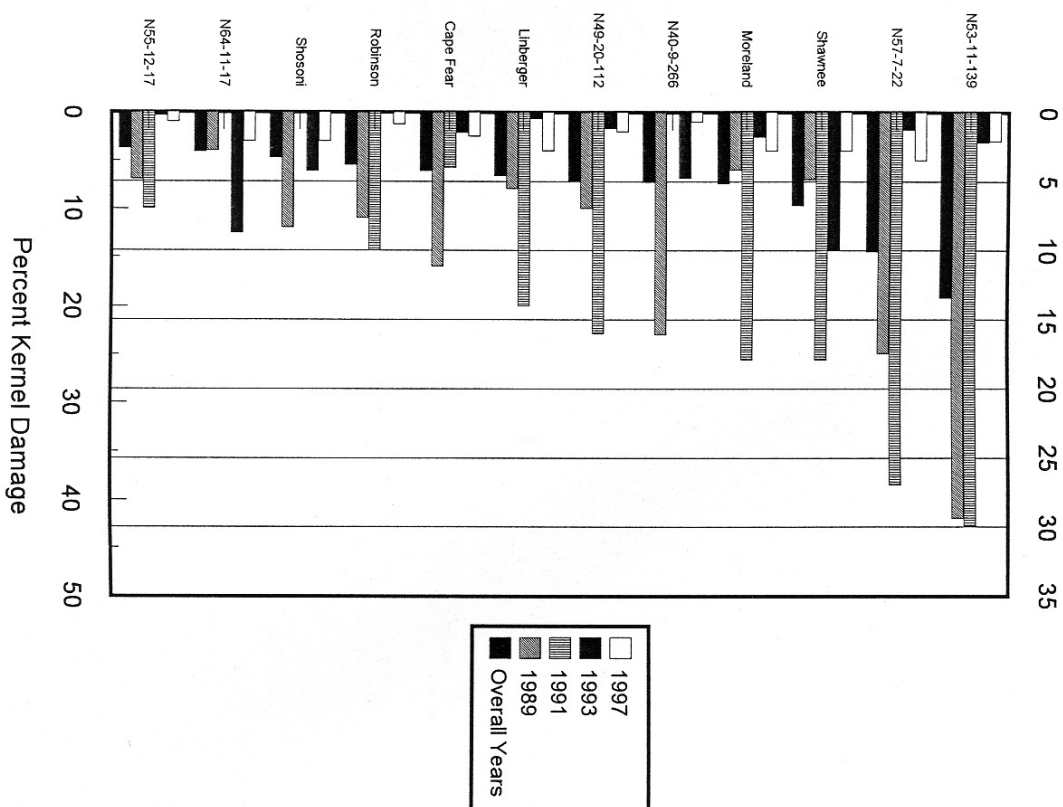
A variety block planted by Dr. Ray Worley at the Coastal Plain Experiment Station of the University of Georgia has been the site of some initial experiments in host plant resistance of pecan cultivars. The results are encouraging for possible control of kernel feeding Hemipterans and pecan aphid complex. Distinct preferences were found between aphid species for the different pecan cultivars. Based on feeding behavior and population growth parameters, Shoshoni, Cheyenne and Tejas were the more preferred cultivars for blackmargined aphid and yellow pecan aphid, whereas Oconee, Shoshoni, Cheyenne, and Gloria Grande

were the more highly preferred cultivars for black pecan aphid. The less preferred cultivars by all were Pawnee and Cape Fear.

Hemipterans - stink bugs and leaffooted bugs - also show a preference for pecan cultivars. Kernel-feeding hemipteran damage incidence was measured in four trees per cultivar at the end of four seasons when damage was greater than 2% (see attached figures for percent damage by cultivars and year). Damage was counted on 100 kernel halves taken from each tree. Cultivars that consistently had a low incidence of damage were 53-9-1 (50 nuts/lb 51% kernel); 'Kanza', (68 nuts/lb, 52% kernel); Grabohls; Sumner; Maramac; 53-3-36 (76 nut/lb, 53% kernel); 41-19-20 (59nuts/lb, 52% kernel); 'Creek' (54 nuts/lb, 49% kernel); Western Schley; 49-19-20 (59 nuts/lb, 49% kernel); Tejas; Pawnee; Forkert; Kiowa; Owens; Candy; and Gloria Grande. The cultivars with higher levels of Hemipteran kernel damage were: Shawnee; Moreland; Linberger; Cape Fear; Robinson; Shoshoni; Caddo; 53-11-139 (86 nuts/ lb, 53% kernel); and 62-5-8 (78 nuts/ lb, 54% kernel). Souix and Melrose had consistently sustain moderate levels of damage. Among the nonreleased selections, highly damaged selections have small pecans, whereas, lower damage incidence was found in selections with larger pecans.

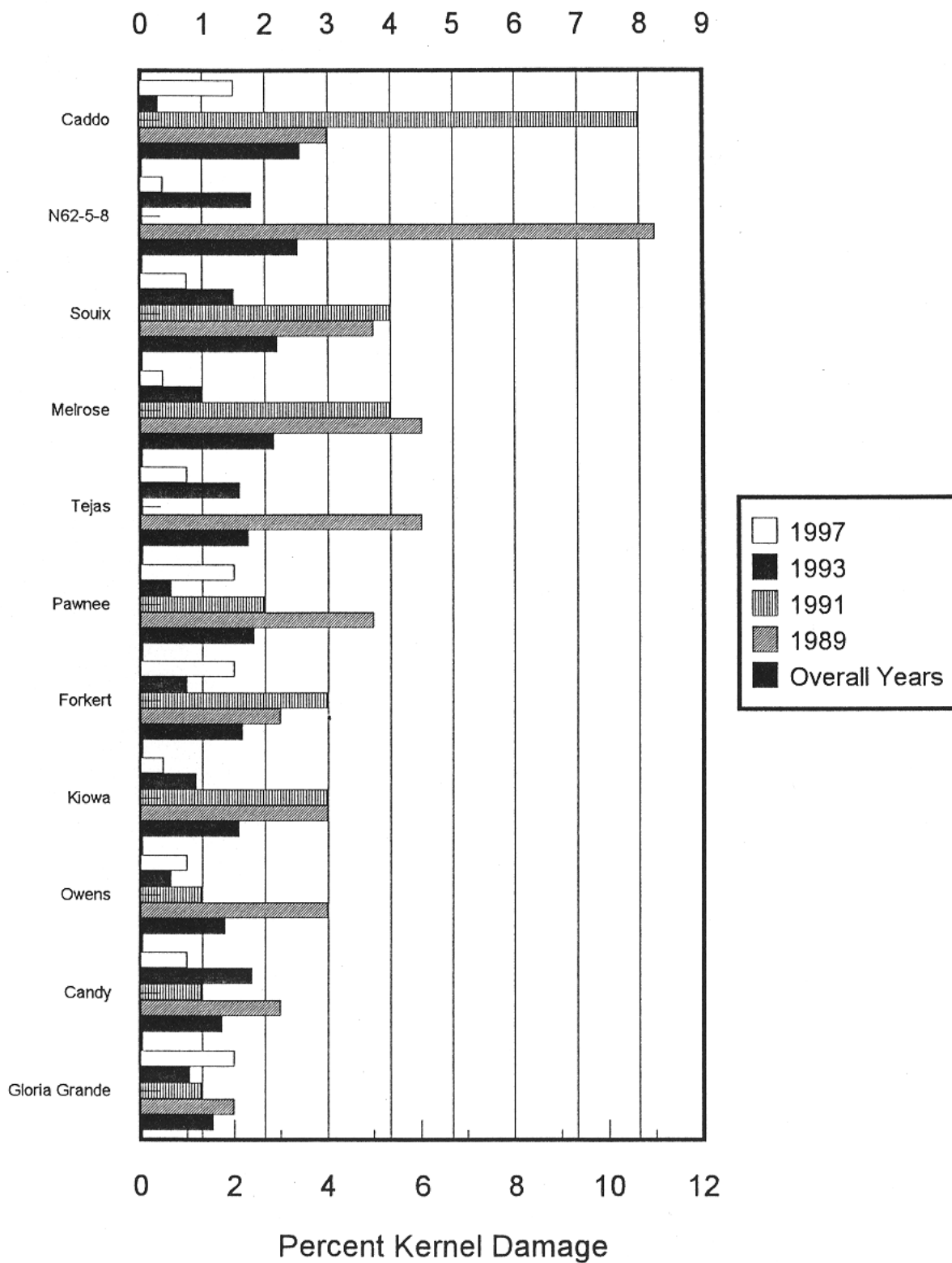
Cultivars with the potential for aphid resistance and Hemipteran resistance are Pawnee, Kiowa, Western Schley and Creek.

**Hemipteran Kernel Damage in Pecan cultivars at Ponder Farm, Tift Co. Georgia  
High Percent Damage Overall Years**

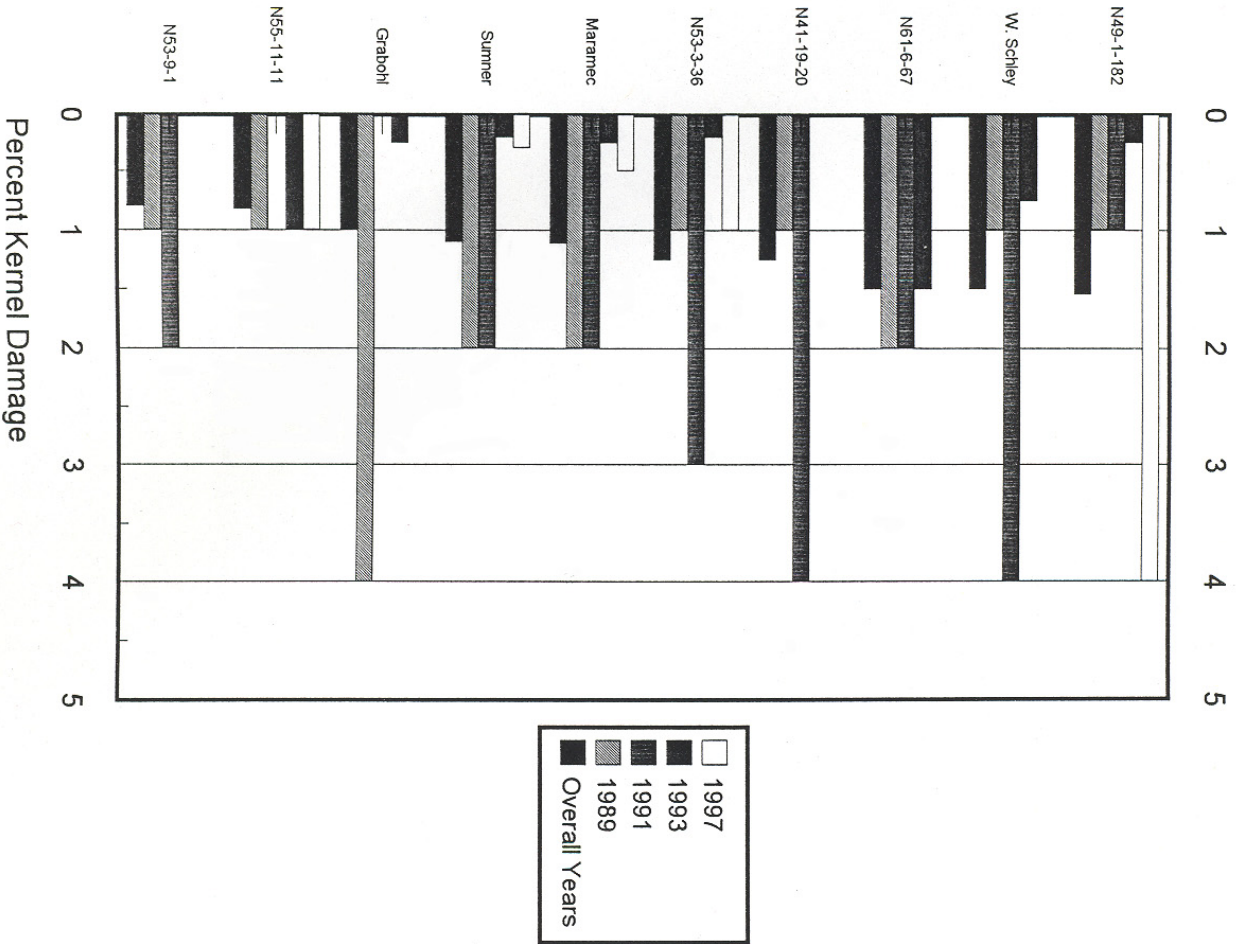




# Intermediate Percent Damage Overall Years



# Hemipteran Kernel Damage in Pecan cultivars at Ponder Farm, Tift Co. Georgia Low Percent Damage Overall Years



## Pecan Short Course

Back by popular demand, the Fundamentals of Pecan Management course will again be offered for 2004. Dr. Dean McCraw, Professor Emeritus will come out of his short retirement to teach the 2004 edition of the educational course. Dr. McCraw, Dr. Phil Mulder, Dr. Sharon von Broembsen, and other specialists will cover the management of pecan trees over the February to October time period. This course is designed to provide an in-depth experience for current or prospective pecan growers. It incorporates both a classroom and orchard learning environment to give growers the opportunity to discuss and see the management schemes appropriate for the season.

The classes are held one Tuesday afternoon each month at the Oklahoma Pecan Research Station beginning in February. Participants will receive a reference notebook, pecan variety board, rootstock trees and a certificate of completion. The fee for the 2004 course is \$250 per individual and spouse.

Sign up early to insure your seat in the classroom. The deadline for registration is January 30, 2004. Be sure to call or email for registration materials. Stephanie Larimer can be reached at 405-744-5404 or [steph@okstate.edu](mailto:steph@okstate.edu).

## Tips and Lists

### January

- Reflect on the previous season. What should you change in your production practices, harvesting, cleaning and handling operation, retail store, advertising, or other marketing activities?
- Continue harvesting or prepare harvest equipment for storage.
- Begin tree pruning.
- Collect and store graftwood.
- Take a Florida vacation with some of your profits, or a Texas vacation if the harvest was poor.

### February

- Continue pruning.
- Make any needed equipment repairs.
- Collect and store graftwood.
- Thin crowded trees.
- Plant bareroot trees.
- Make needed improvements to orchard surface drainage.

### March

- Last chance to collect graftwood.

- Place graftwood order.
- Apply fertilizer.
- Apply pre-emergence herbicide.
- Review spray guide and make pest control plans.
- Check ponds regularly for signs of hungry bass.

## Pecan Fruiting

*Michael Smith, Dept. of Horticulture & L.A.*

Pecans are monoecious, meaning that they have male (catkin) and female (pistil) flowers on the same tree, but at different locations. Most of the buds on a pecan are compound buds, i.e. the compound bud houses multiple buds inside. In the case of pecan, the compound bud is composed of a central mixed bud and two pure buds. Catkins develop from the two pure buds, and leaves, shoot, pistillate flowers and more catkins develop from the mixed bud housed in the compound bud. Pecans are wind pollinated, so it is imperative that pecan trees produce an abundance of pollen since pollen distribution is at random. Pecan trees also have a terminal mixed bud but this bud frequently aborts during the winter, leaving a lateral compound bud as the most distal but on the shoot.

A node is the location of the buds on a shoot. At each node the pecan has a primary bud, secondary bud, tertiary bud, and occasionally a quaternary bud. Only the primary bud develops, unless it is damaged or destroyed, then the secondary bud develops. All primary buds begin growth in the spring, but only the distal one to four buds continue to develop shoots, catkins, and maybe pistillate flowers. Shoots abort from the more basal buds on the branch leaving only the catkins. Branches older than 1-year do not have primary buds, only secondary and tertiary buds. As the branches grow these remaining buds that did not develop are covered with bark, termed latent buds. When a branch is cut or broken, these latent buds will grow forming new shoots. In addition, new shoots on large branches can develop from adventitious buds. These are not true buds, but are irregularities in the vascular system that can give rise to merismatic cells (dividing cells) that can develop into new shoots.

Pecan trees are dichogamous, meaning that their pollen is shed at a time different than their pistillate flowers are receptive. Therefore, pecan trees require cross-pollination from a compatible native tree or cultivar. Some pecan trees are protogynous (the pistillate flower is receptive before the tree sheds its pollen) and other trees are protandrous (pollen is shed before the pistillate flower is receptive). A few native trees and cultivars shed their pollen at the same time their pistillate flowers are receptive,

and can therefore self-pollinate. However, self-pollination is undesirable since fruit abortion is substantially higher and nut size and kernel percentage are lower than if cross-pollinated. Cross-pollination is most effective if the pollen donor and the receptor are within 150 feet. Although pollen can float for miles on the air currents, the chances of successful pollination decrease with distance. High humidity or rainfall during pollination substantially reduces pollen dissemination, and consequently fruit set.

Occasionally, the primary buds or young shoots are killed by spring frost. New growth will develop from the secondary buds, but the crop potential is reduced by about 70%.

The amount of water available at certain times of the year can dramatically affect next year's crop. Very wet springs are detrimental to next year's crop. When the soil is saturated with water during the spring, leaf expansion and photosynthesis are reduced. This greatly reduces next year's crop potential. Also pecan scab is increased by wet conditions, that negatively impacts next year's crop and the current season's. Dry springs have not been shown to affect next year's crop. Providing good surface drainage is a key factor in reducing the negative effects of too much rain in the spring. September moisture is also critical for the following year's crop. Drought conditions in September reduce the crop potential, plus inhibit kernel development of the current year's crop. Adequate rainfall or irrigation plus sufficient vegetation control in September are key components to achieve high nut quality and good return bloom. Summer moisture conditions have less impact on next year's crop potential than moisture conditions during the spring or September.

Crop load also affects the crop potential for next year. Trees bearing a moderate crop can produce consistently. However, overloaded trees have little chance of a good crop the following year, and may produce poor quality nuts during the year they are overloaded. Overloaded trees are also much more susceptible to fall and winter cold damage. Mechanically thinning overloaded trees in August is critical to achieve consistent production.

Adequate nitrogen is important to support the current season's crop and attain consistent annual production. Recently, there has been speculation that late summer or fall applied nitrogen will induce annual cropping. However, my data indicates that summer or fall applied nitrogen did not affect next year's crop. In fact, little nitrogen was absorbed from the later summer or fall nitrogen application. The most effective time to fertilize pecan trees with nitrogen is shortly before budbreak through shoot expansion. After shoot expansion, little nitrogen is absorbed unless the tree is nitrogen deficient.

## **Pecan Cultivars**

*Michael Smith, Dept. of Hort. and L.A.*

Many of you are probably considering which cultivar to use when grafting or planting pecan trees. Cultivar selection will dramatically affect the success and profitability of your orchard. Orchard management should be considered when choosing a cultivar. For instance, native pecan orchards normally are managed differently than cultivar orchards. Native orchards are rarely sprayed for scab and overloaded trees are typically not thinned. Therefore, a scab susceptible cultivar that frequently overloads would be a poor choice for a native orchard, unless you are willing to control scab and mechanically thin those trees. However, the same cultivar might be the best choice for a cultivar orchard since management can overcome these limitations.

Cold injury is a major problem in Oklahoma, and should be considered carefully when choosing a cultivar. Trees in all areas of Oklahoma are susceptible to cold injury, but the frequency of damage is greater in the northern  $\frac{2}{3}$ 's of the state. Cold damage may occur in the fall, during the winter especially following a warm period, or during the spring as trees begin to grow.

Below is a discussion of some of the recommended cultivars for Oklahoma.

**Pawnee** continues to perform well in Oklahoma. It produces large nuts with 55 to 58% kernel. Pawnee requires scab control and fruit thinning to produce consistently, maintain good nut quality, and for best results should be irrigated. It is more cold hardy than most of the cultivars available. Nuts ripen early and are very susceptible to bird depredation. Early harvest and drying the nuts are needed to avoid substantial losses to wildlife. Pawnee has an early budbreak, making it more susceptible to spring frost than most cultivars. Pawnee is a good choice for a cultivar orchard, but is not suitable to be mixed in a native orchard unless Pawnee is managed differently than the natives.

**Kanza** is also performing well in Oklahoma. Nuts are about 70/lb with 52 to 54% kernel. Kernels are very attractive and market well in a retail outlet if they are cracked and blown or the nuts are shelled. Kanza is scab resistant, cold hardy and has a late budbreak. Cluster size is large, and trees will require thinning to maintain annual production. Nuts ripen early, but they are not as susceptible to bird depredation as Pawnee. Kanza is well suited for cultivar orchards or mixed in native orchards throughout Oklahoma.

**Maramec** continues to be a favored cultivar in southern Oklahoma, but it is not cold hardy enough for central and northern Oklahoma. It has a large nut with extremely attractive kernels. Overloaded trees require thinning to



maintain kernel quality and achieve consistent production. Maramec is suited for cultivar orchards in southern Oklahoma, but is not recommended to mix in native orchards.

**Mohawk** is widely grown in Oklahoma, but it has fallen out of favor. Its large size and precocity makes it an attractive cultivar, but it has several weaknesses. Kernel quality is frequently a problem on large trees. Overproduction becomes more pronounced as trees become older. Mechanical thinning is essential on Mohawk. Shells are thin and brittle, tending to crack at the suture. Many nuts are cracked during harvest. Mohawk is resistant to scab at some locations and susceptible at other locations. Before long, Mohawk will develop scab at all locations. Mohawk is only suitable as a temporary tree in cultivar orchards.

**Choctaw** is a large nut that produces a kernel favored by many consumers. It is very late maturing and only suitable for southern Oklahoma. Trees are productive, moderately cold hardy, and moderately scab resistant. Black aphids tend to be more problematic on Choctaw than most other cultivars. Trees are vigorous and spreading.

**Caddo** is a small nut with a very attractive kernel. In a 30-year test in Georgia, it had less alternate bearing tendency than other cultivars tested. In Oklahoma, trees are occasionally damaged by fall or winter cold temperatures. Trees are moderately scab susceptible. This cultivar is best suited for southern Oklahoma.

**Oconee** is a relatively new cultivar. It produces large nuts, similar to Choctaw, with attractive kernels. Nut quality decreases dramatically if the trees are drought stressed. Trees are resistant to moderately susceptible to scab. We don't have enough experience with Oconee to know about its cold hardiness, but it appears to be reasonably cold hardy. This cultivar appears best suited to southern Oklahoma.

**Nacono** is very new. It produces a medium size nut that has a very attractive kernel. Nuts ripen late. The cold hardiness of the tree is unknown, but I suspect that it will be moderately to highly susceptible to cold injury. It is only suitable for trial plantings in southern Oklahoma.

**Giles** is an old cultivar that originated as a native tree near Chetopa, Kansas. It is extremely productive and tends to alternate bear as trees mature unless fruit thinned. Nuts are medium size and average about 51% kernel. Trees are moderately scab susceptible. Giles and Kanza are the two most cold hardy cultivars typically grown in Oklahoma. It is well suited for central and northern Oklahoma.

### **Pecan eLearning Website Now Ready for Access**

*Dean McCraw and Phil Mulder, Extension Entomologist*

The Oklahoma Pecan Management eLearning Course is ready for use and can be accessed on the World Wide

Web at <[pecan.okstate.edu](http://pecan.okstate.edu)>. Note that the site does not require insertion of "www".

This site was developed and edited by Dean McCraw and Phil Mulder. The project was made possible by financial support from the Oklahoma Pecan Growers Association among other agencies.

The cost of the web course is \$75.00 which allows unlimited access to the site for one year. The following information is taken from the introductory page and gives complete information on content and procedures.

The course is organized into seven phases as follows:

*Introduction:* Characteristics of the Oklahoma Industry; Definitions; Botany of the pecan; Human dietary benefits of pecans; Author credits; Sponsorship.

*Native pecan management:* Assessing investment potential; Grove improvement; Management priorities; Orchard floor management; Pecans and livestock; Determining pecan tree value; Organic production

*Improved variety management:* Orchard site selection; Orchard establishment; Propagation; Variety selection; Nutrition; Training; Pruning; Irrigation; Crop load management; Weed control

*Pest management:* IPM concepts; Insect management; Disease management; Wildlife depredation management; Organic options.

*Storage, Food Safety and Sanitation:* Storage considerations; Food safety; Sanitation

*Economics and marketing:* Economics; Marketing

*Equipment:* Overview; Minimum equipment needs; Commonly used equipment; Calibration

Each section and subtopic is directly accessible from a common menu. The user can navigate through the course at self pace and return to any section at will. Links will open in a new window. To return where you left off, simply close the new window

The course can be used as a supplement to the classroom offering of the Oklahoma Pecan Management course for those of you who take the classroom course in person or as a "next best alternative" for those of you who for various reasons are not able to take the in person offering.

Every effort has been made to make the course compatible with the most commonly available computer hardware and software. Some parts of the program e.g. PowerPoint programs will run very slowly if you are operating through a modem. However, these programs merely offer information supportive to information already in the text.

We hope you find this program useful in improving your pecan management expertise. If you have questions please do not hesitate to let us know.



### Best Wishes for Our President

While cutting trees at the family orchard, Bill Ihle broke his leg in three places when a fallen tree dislodged from the stump and struck his leg. After about 1½ hours, Joe Ihle and emergency personnel were able to move Bill from the bottom of a dry stream to a location where he could be transported by helicopter to St. Francis Hospital. Doctors were able to repair Bill's leg with the help of some pins and screws. The prognosis is for a full recovery after healing time and physical therapy. We wish Bill a speedy recovery.



## 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**  
**Catherine Shelton, Treasurer**  
**15857 S 49th W Ave**  
**Glenpool, OK 74033**  
**OPGAShelton@aol.com**

Name \_\_\_\_\_

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

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

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

Renew

New Member

Grower Member ..... \$50.00  
 Industry Member ..... \$125.00  
 Extension/Research/Student ..... \$40.00

Return Service Requested

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