

NFREC NEWS



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Inside this issue...

NFREC Faculty Recognized

Four faculty members with NFREC were among a group of over 65 researchers recognized and honored with awards for outstanding research at the 2nd annual "Florida Agricultural Experiment Station Banquet" in Gainesville on May 12th.

Mark McLellan, IFAS Research Dean and FAES Director, along with UF President Bernie Machen, addressed the professors and scientists acknowledging each for their dedication and hard work.

Noted for their accomplishments were more than 35 IFAS Research Innovation award winners, two Award of Excellence for Graduate Research winners, six UF Research Foundation Professors, two Richard L. Jones New Faculty Research Award winners, eight researchers whose work drew more than \$1 million in grants in 2007-08, five plant patent holders and two teams of researchers that received utility plants.

NFREC Recipients Include:

Dr. Ronald Barnett Extension Specialist, Small Grains - Professor of Agronomy

This plaque was awarded for the development of a new variety that had been patented in the Plant Variety Protection Office of the USDA. "Trophy" is a new Oat variety released several years ago jointly with Louisiana State University and "AGS 104" is a new rye variety released several years ago jointly with the University of Georgia. Both of these new varieties came out of the North Florida Research and Education Center Small Grain Breeding Program that has a history of a number of releases of new and improved varieties of small grains adapted to Southeastern growing conditions.

Dr. Dan Gorbet, Peanut Breeder/Genetics - Professor Emeritus, Agronomy and

Dr. Barry Tillman, Peanut Breeding & Genetics - Assistant Professor of Agronomy

This particular award was given in recognition of the patent issued by the Plant Variety Protection Office of the USDA for the peanut variety "Florida-07". Florida-07 was released by IFAS/FAES in 2006 and was developed at the Marianna Unit of the North Florida Research and Education Center. The variety has demonstrated excellent yield potential and is adapted to the southeastern United States.

Nicholas B. Comerford, NFREC Center Director

Dr. Comerford was one of six who were presented awards for their accomplishments as University of Florida Foundation Professors.

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Special points of interest:

- **August 1 & 2, 2009 - Florida Small Farms & Alternative Enterprises Conference**, Osceola Heritage Park, Kissimmee, FL. For more information on educational program content contact Danielle Treadwell at 352-392-1928 or email ddtreadw@ufl.edu. For general conference information contact Mandy Stage at 352-392-5930 or email mstage@ufl.edu.
- **August 20, 2009 - Peanut Field Day**, North Florida Research and Education Center, Marianna, FL. For more information call 850-482-9904.
- **September 19, 2009 - NFREC 8th Annual Fall Field Day**, North Florida REC, Quincy, FL. For more information contact Vicky Morris 850-875-7115.

For information on other events happening around the state go to <http://calendar.ifas.ufl.edu>

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For a complete listing of award recipients and more, click on "IFAS News" inside the "IFAS Resource" on the NFREC Homepage.

You can find information about these and other NFREC faculty members and their current research programs on the NFREC website at <http://nfrec.ifas.ufl.edu>. [Vicky Morris]

Mayhaws for North Florida

Mayhaws (*Crataegus aestivalis*, *C. rufula*, *C. opaca*) are native to the southeastern United States. Mayhaws are in the rose family and the hawthorne genus. They are medium-sized trees that produce white blooms in the spring. Mayhaws produce a small apple-like fruit that is highly prized for its jelly. Fruit size is usually less than 1 inch in diameter. The trees are also valued as an ornamental species. They usually bloom in late February, and sometimes sustain crop loss due to late winter freezes. The fruit usually ripens in early May. Mayhaw trees are cold hardy, and if properly, conditioned they can survive temperatures as low as -25 °F. Mayhaws are often found along river bottoms and along streams and in swamps from north Florida to North Carolina. Although they are often found in low areas subject to perennial flooding, mayhaws perform best in well-drained soils. Historically, mayhaws have been collected from native stands; however, there are many named cultivars.

There is considerable demand for cultivated mayhaw trees since much of their native range has been developed, or their native land is private, or has limited access. Krewer and Crocker (1997) reported on the performance of 35 mayhaw cultivars in Attapulgus GA, Tifton, GA and Florida. They recommended the following cultivars in the order of ripening: T. O. Superberry, Mason's Superberry, Superspur, Saline, Big Red, Crimson, Big V, Turnage #57, and Turnage #88. Mayhaw trees can be 30 feet tall and 30 feet wide after 20 years of growth so plant them in areas that will accommodate a medium-sized tree.

Common insect pests of mayhaw include aphids, apple maggot, flat headed apple borers and white flies. Plum curculio is the most debilitating pest, and if not controlled may eliminate the entire crop. The reader is referred to Krewer and Crocker (1997) and Krewer et al. (1993) for more detail concerning cultivars, culture and management and pest status. [Pete Andersen]

References

Krewer, G.W. and T.E. Crocker. 1997. Performance of mayhaws in south Georgia and north Florida. Proc. Fla. State Hort. Soc. 110: 169-171.

Krewer, G. W., T.F. Crocker, S.C. Meyers, P.F. Bertrand and D.L. Horton. 1993. Minor Fruits and Nuts in Georgia. University of Georgia Cooperative Extension Bulletin 992. 19 pp.

Pecan Pest Management

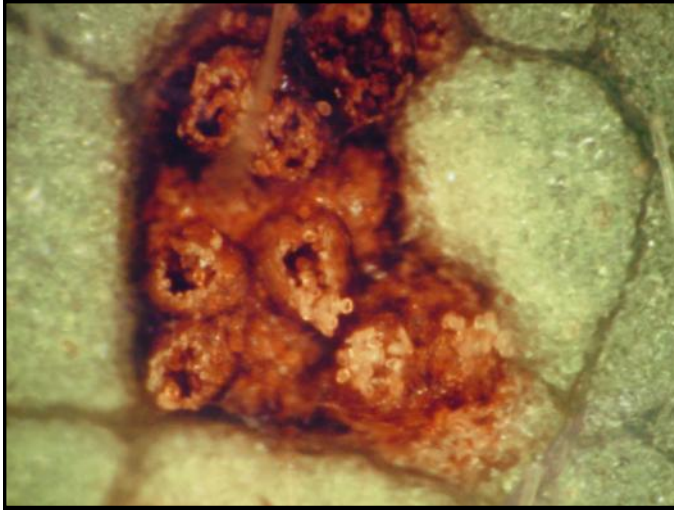
According to some recent estimates by Mark Mosler in the UF-IFAS Pesticide Information Office, there are around 8,650 acres of pecans in Florida with about 6,700 bearing acres. All pecan acreage is north of I-4 with the majority located from Gainesville north and to the west. Most of the acreage is in small farms with occasional commercial acreage of ~150-200. State yield varies anywhere from 500,000 to 1.5 million lbs/year and sells wholesale for \$0.45 to 1.50/lb. The Florida Pecan Growers Association is active and its next meeting will be held at the Jefferson County Country Club in Monticello, FL on 27 August 2009. Pecan is beset by a number of important arthropod and disease pests which are difficult to control. Pecan scab is the worse disease and nut casebearer, hickory shuckworm and pecan weevil, are the most important insect pests. There are currently no management tools available other than pesticides to control these pests. However, decision making surrounding the need and precise timing of chemical applications provides growers with an opportunity to suppress these pests both more effectively and economically. Nut casebearer and pecan scab are the two most important early season pests that can be addressed more effectively using available IPM predictive tools: pheromone traps and a degree day model for nut casebearer and a rainfall and temperature model for scab. We currently have a Beltwide pilot project led by Marvin Harris from TAMU toward monitoring and predicting the need for and best timing for nut casebearer. We have one successful year completed and will continue this project in the 2010 season. We are actively seeking pecan growers and county faculty to join us in this program. It only requires a little bit of work in late March to early May. We also want to implement a web-based prediction model on pecan scab for Florida growers to use in 2010. This effort will require each grower to have a rain gauge in the orchard and a nearby weather station that will enable estimates of the need and optimal timing for scab sprays. Any county faculty interested in cooperating in this IPM effort should contact me and/or attend the pecan growers meeting in August if possible where I will provide the details on the nut casebearer and pecan scab monitoring projects. These programs can make a big difference for small pecan farmers with minor investment of time. [Russ Mizell]

Soybean Rust Update for the 2009 Season

For the first time, soybean rust overwintered in states outside of Florida (Alabama, Louisiana, and Georgia). These were on protected kudzu sites, but indicate the potential for the fungus to overwinter further north when climatic conditions are not severe. This has caused a lot of concern in the Midwestern soybean belt with everyone asking "is this going to be the year." In Louisiana and Alabama, positive kudzu sites were found about three weeks earlier than in previous years. So far, soybean rust has been found in five states and 27 counties in United States, and in two states and five municipalities in Mexico.

For Florida growers, things are about the same as previous years. Although we do not have rust observed in soybeans thus far, there are several kudzu sites that are developing rust rapidly. At this time Gadsden, Leon, Jefferson, Taylor, and Hamilton counties have positive kudzu sites. Although the recent temperatures are too hot for optimum disease development, the rains have provided adequate moisture to drive the epidemic.

Soybean producers should be prepared to spray at least once for soybean rust. If an early season application is required (around R1), a triazole compound would be a good choice. If the application is later in the season, then it may be better to use a strobilurin compound which will also control frog eye and Cercospora. Mixing a triazole with a strobilurin or thiophanate methyl will enhance control of other diseases as well. Status of specific fungicides can be found at <http://oardc.osu.edu/soyrustr/>.



Hard copies of the publication "Using Foliar Fungicides to Manage Soybean Rust" are still available from Jim Marois at Quincy-NFREC if your county office has run out. An electronic version is available at <http://www.oznet.ksu.edu/library/plant2/MF2680.pdf> (it is 110 pages long, so do not hit the print button unless you are serious).

For up-to-date information on soybean rust, including current distribution maps (by county) and commentary by state specialists, visit . <http://sbrusa.net/cgi-bin/sbr/public.cgi> [Jim Marois]

Sporulating lesion of soybean rust on soybean.

Fertilization for pine straw production, put back what you take, but don't overfertilize!

Pine straw production has become an important industry in north Florida with estimated annual revenues in excess of \$79 million in 2005 (Hodges et al., 2005). Approximately 30% of the forested area of Florida is in pine plantations including slash and longleaf pine which are preferred species for pine straw because of their longer needles and superior quality. In years of good rainfall, annual revenues from pine straw harvest may exceed \$300 per acre from pine stands under good management. As markets for traditional forests products have declined, pine straw is an important alternative crop.

Although pine straw production is a good way to generate revenue from pre-merchantable stands, intensive raking practices may lead to reduced diameter growth and pest outbreaks. A single raking can remove up to 60 lb/ac N and 5 lb/ac P (Morris et. al 1992), and repeated raking could remove critical levels of nutrients for sustaining stand health. Periodic fertilization is an effective practice to replenish forest nutrients removed by straw harvests and is beneficial for sustaining productivity for the next stand.

The appropriate rate and frequency of fertilization depend on soil type, age, and species of the stand. For instance, a pine straw productivity study of 5-year-old pines at the NFREC Suwannee Valley Research Center (SVRC) near Live Oak, FL demonstrated that nutrient concentration of surface soil (1-4 ft) after fertilization was significantly different among the species; long-leaf pine was the highest, followed by slash pine, and loblolly pine, which had the largest crown and nutrient uptake, was the lowest. Of course, soil nutrient holding capacity and availability are very different between deep sandy soils and soils with clayey layers.

Some straw growers also consider fertilization as a means of increasing straw yields since previous pine productivity studies showed that mid-rotation fertilizer application significantly increased total straw production and needle length (Duryea, 2003). However, excessive fertilization practice may be a significant threat to water quality in Florida. According to Morris et al. (1992), nutrient use efficiency of southern pines is typically about 50%, which means that half of fertilizer could be leached out to

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the ground water, washed off with surface runoff, volatilized to air, or absorbed by the soil. Another study at the SVRC with deep sandy soil also shows that mobile nutrients, such as nitrate (NO_3^-), can be leached out from the upper 4-feet of the surface soil in 6 months (Minogue et al., 2007).

The north Florida region is known as a recharge area for the Floridan Aquifer, which is the major drinking water source for many communities in the state. Recent regional water quality assessment (FDEP, 2008) reported significant increase of nitrogen and phosphorous level in recent years, and excess nutrient leaching from fertilization is considered as one source of the pollution. This suggests that more specific fertilization guidelines are needed for efficient, economic, and proper fertilizer application.

Existing silvicultural fertilization guidelines in the Florida Forestry Best Management Practices (BMP's) include several specific criteria and recommend developing a nutrient management plan based on soil, water, plant and organic material sample analysis based on desired timber yields to supply nutrient inputs efficiently; so that the benefit of fertilization is captured by target vegetation and the adverse effects to water resources are minimized (anonymous 2003). The current BMP guidelines also stipulate not to exceed 250 pounds of elemental nitrogen per acre (250 lb-N/ac) for any 3-year period or 1000 lb-N/ac over any 20-year period. However, these guidelines are designed for traditional silvicultural practices and not aimed for an intensive pine straw production.

In 2008, a team of scientists at the NFREC initiated a 3-year study to address these issues. Through the study, the team will i) determine the effects of fertilization and straw removal on nutrient leaching, pine straw yield, stand health, and soil properties, ii) evaluate and potentially improve effectiveness of current Florida forestry BMPs, and iii) provide educational materials and outreach programs for landowners and producers. The first year results will be reported in Spring 2010. [Masato Miwa and Patrick Minogue]

Citations:

- Anonymous, 2008. Silvicultural best management practices. Florida Department of Agriculture and Consumer Services. 116p.
- Duryea, M. L. 2003. Pine Straw Management in Florida's Forest. Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, The University of Florida, Circular 831. 6 p.
- Florida Department of Environmental Protection. 2008. Integrated water quality assessment of Florida: 2008 305(b) report and 303(d) list update. FDEP Division of Environmental Assessment and Restoration, Bureau of Watershed Management. 142p.
- Hodges, A.W., W. D. Mulkey, J. R. Alavalapati, D. R. Carter, and C. F. Kiker. 2005. Economic impacts of the forest industry in Florida, 2003. The University of Florida, Institute of Food and Agricultural Sciences. Final Report to the Florida Forestry Association. 3 p.
- Minogue, P., A. Osiecka, J. Nowak, G. Hockmuth. 2007. Nitrate monitoring following forest fertilization in the Suwannee Valley region of north Florida and implications for best management practices – 2006 progress report. Institute of Food and Agricultural Sciences, Agricultural Experiment Station, North Florida Research and Education Center, Quincy, FL, Research Report 2007-04. 8 pp.
- Morris, L.A., E.J. Jokela, and J.B. O'Connor, Jr. 1992. Silvicultural guidelines for pinestraw management in the southeastern United States. Georgia Forestry Commission. Georgia Forestry Research Paper No. 88. 11 p.

Triticale as a Forage Crop in the Southeastern USA

Interest in triticale as a forage crop has been increasing in recent years in the southeastern USA. Triticale (*X Triticose-cole* Wittmack) is a man made cereal developed by crossing wheat and rye. This robust cereal is grown worldwide for its grain and forage. Triticale is well suited to the multi-cropping systems common in the SE USA.

Initially, the thrust of triticale breeding programs in the Southeast was with the development of grain varieties. Several cultivars were developed and released in the 1980's including several developed by Dr Ron Barnett at Quincy NFREC. The release of these varieties resulted in some triticale grain production in the SE USA. These varieties were spring types but were planted in the fall in the Southeast. Back-to-back abnormally cold winters in the 1980's resulted considerable winterkill. This led to decreased production and interest as a grain crop.

Initially, triticale cultivars that were developed for grain were used in cool-season forage programs with unsatisfactory results in the SE USA. Recent releases of forage type triticale cultivars have resulted in a recent surge in acreage, especially with dairy farms. Even with this recent increase, acreage is relatively small, estimated at 10,000 to 20,000 acres in 2008. However; acreage is expected to increase significantly in the future. For comparison, rye and oat grown for forage during the cool season is estimated at 500,000 acres in the SE USA and annual ryegrass, 1.2 million acres.

Present forage type triticale varieties recommended for the SE USA include TriCal 342, TriCal 2700 and Monarch triticale. Both TriCal 342 and Monarch were developed at the Universities of Florida and Georgia. TriCal 2700 was bred and released by Resource Seeds Inc. (Gilroy, CA). Additional varieties adapted to the SE USA are expected to be released in the future. Cool-

season forage variety test conducted by the University of Georgia, in which NFREC Marianna participates in, is summarized in the table below. In this test, the newer triticale forage varieties either ranked at the top or near the top for seasonal forage dry matter yield.

In the SE USA, dairy farmers are the primary growers of triticale forage. Triticale fits well in the common rotation of maize for silage during the warm season and an annual forage like triticale for green chop and (or) silage during the cool season. Yields of up to 18 ton of triticale forage (about 3 to 4 ton of dry forage) are common. Most of these dairy farms pump manure effluent through the irrigation system to the forage crop fields as the primary means of nutrient fertilization. Thus these farmers are interested in crops that not only yield a high amount of nutritious forage, but also in crops that would utilize the nutrients provided by the effluent. Dairy farmers have noted that forage triticale is an effective crop to capture and use the effluent. Recent research conducted by Drs. Cheryl Maclowiak and Ann Blount has shown that triticale grown for forage was indeed very effective in utilizing a relatively large amount of N and P. Further trials on the evaluation of forage triticale for nutrient mitigation are underway.

There is limited data on the nutritional value of triticale forage grown in the SE USA for cattle. Preliminary compositional data collected in trials done at NFREC Marianna indicates that triticale forage has similar nutritional value as other small grain cereal forages and annual ryegrass. In a recent review of studies done in other parts of the world, the nutritional composition and nutritional value of triticale forage for ruminant animals were similar to other small grain cereal forages at similar stages of maturity. Field reports indicate no drop in milk production when dairy cows are switched from a maize silage-based mixed ration to a triticale silage-based mixed ration.

We currently have several on-going studies at NFREC on the evaluation of triticale as forage. These include 1) the evaluation of the nutritional quality of triticale and other cool-season annual forages including measurement of water soluble and ethanol soluble carbohydrate concentrations, 2) nutrient mitigation potential of triticale and other cool-season annual forages, 3) evaluation of triticale forage, grown as a mono-crop or in a blend with annual ryegrass, as a pasture forage for grazing by growing beef cattle heifers during the cool-season, and 4) development of and the evaluation of new forage triticale varieties. Several on-farm demonstrations are also done. [Bob Myer and Ann Blount].

Table 1. Two year average seasonal forage yield (dry weight basis) of triticale, wheat, oat, and rye grown at three locations in south Georgia and north Florida during the cool season (2006-07 and 2007-08)^a

Species	Variety	Yield, lb/ac
Triticale	TriCal 2700	8293
	TriCal 336	7902
	TriCal 342	7668
Wheat	(mean; n=6) ^b	7939
Oat	(mean; n=10)	6501
Rye	(mean; n=9)	8169

^a SEM = 235; LSD (0.10) = 555. Replicated small plot trials that were planted during Oct each year and the plots were harvested 3 to 4 times during cool season (winter/spring). From: Day et. al, 2008. ^b Mean across cultivars and the number of cultivars in the mean.

Know Our Staff



Jim was hired at Monticello REC in 1976 as an agricultural technician. In 1984, he was reassigned to the plant pathology department as a biologist. In 1992, he was assigned to the Environmental Horticulture program as a senior biologist. In 2001, Jim’s responsibilities expanded to include assisting Dr. Gary Knox with his Environmental Horticulture program. Also in 2001, Jim received his MS degree from UF in Environmental Horticulture through distance education while working full time.

Jim is currently on three NFREC committees; Publicity and Awards, IT and the NFREC Staff Committee.

Jim has been selected to receive the 2009 IFAS “**Superior Accomplishment Awards**” within the Scientific/Technical category. This award was established by the Florida Legislature to recognize excellence in university service. With this recognition, he is also eligible to be considered for UF campus-wide recognition in this same category later in the year.

Jim Aldrich, Sr. Biological Scientist

2009 Florida Cattlemen Recognize NFREC Forage Breeder



The 2009 Florida Cattlemen' Convention was held at Marco Island. This year's recipient of the Florida Cattlemen's Researcher of the Year was presented to **Dr. Ann Blount** from the North Florida Research and Education Center at Marianna for her work with forage variety development and forage management over the course of her career to date.

Have you registered for the Florida Small Farms Alternative Enterprises Conference?

Time is running out.

Florida Small Farms Alternative Enterprises Conference
Aug 1 & 2, 2009
<http://smallfarms.ifas.ufl.edu>

Coming Events Calendar

July 27, 2009 - Soil Fumigation Update for Strawberry and Vegetable Growers, Bradford County Extension Service, Starke, FL. For more information call Jim DeValerio at 904-966-6299 or email jtd@ufl.edu.

July 29-31, 2009 - Farm to Fuel Summit, Rosen Shingle Creek, Orlando, FL. For more information visit http://www.floridafarmtofuel.com/summer_2009.htm

August 1 & 2, 2009 - Florida Small Farms & Alternative Enterprises Conference, Osceola Heritage Park, Kissimmee, FL. For general conference information contact Mandy Stage at 352-392-5930 or email mstage@ufl.edu. For educational program content contact Danielle Treadwell at 352-392-1928 x or email ddtreadw@ufl.edu.

August 20, 2009 - Peanut Field Day, North Florida Research and Education Center, Marianna, FL. For more information call 850-482-9904.

September 19, 2009 - NFREC 8th Annual Fall Field Day, Quincy, FL. For more information contact Vicky Morris at 850-875-7115 or email vpmorris@ufl.edu.

September 19, 2009 - Be a Hobby Beekeeper Short Course, Clay County Agriculture Center, Green Cove Springs. For more information call 904-269-6355, 284-6355, or 473-3711.

September 22, 2009 - Horse Camping: A Potential Way to Add Revenue to the Farm, Bronson, FL. For more information contact Linda Landrum at 386-362-1725 x 105 or Llandrum@ufl.edu.

September 22-24, 2009 - Southeast Herbicide Applicator Conference, Panama City, FL. For more information visit www.conference.ifas.ufl.edu/sehac.

For information on other events happening around the state go to <http://calendar.ifas.ufl.edu>.

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