
AAES Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

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NFL ACTION—Researcher Philippe Aldahir guides a caddy traffic simulator down a stretch of bermudagrass in a study to determine which sports turf varieties best stand up to the wear and tear of football games.

Trials test traffic tolerance in turfgrass

At Auburn's Turfgrass Research Unit not far from campus, turfgrass weed scientist Scott McElroy is putting several hybrid bermudagrass sports turf varieties through the wringer to generate data that could help NCAA and NFL turf managers determine which of the plethora of varieties available will perform best on their fields.

McElroy, an AAES researcher who focuses on evaluating new-generation herbicides and developing alternative weed-control management strategies for turfgrass in general, also conducts trials comparing the performance of top bermudagrass sports turf varieties.

Bermudagrass is the turfgrass of choice on athletic fields in the Southeast because it is adapted to the region's climate and can tolerate heavy traffic. To find which variety best delivers on that latter trait, McElroy and graduate research assistant Philippe Aldahir are using a mechanical "traffic" simulator that, in a single pass down a turfgrass research plot and back, replicates one NFL football game. They also are assessing how rapidly the varieties recover from injury. ♦

Taste-testers give edible lotus a thumbs-up

Auburn University Lotus Project researchers who in their first decade collected hundreds of distinct lotus cultivars from around the world and developed production techniques that could position Alabama farmers to be major players in the nation's growing ornamental lotus market now are exploring the ancient aquatic plant's potential as a food crop in the South.

And based on results from recent taste tests held in Auburn, the plant that's a staple in the diets of millions of people worldwide stands a good chance of catching on here.

Auburn ag economist and Alabama Ag Experiment Station scientist Deacue Fields and graduate research assistant Shannon Sand conducted the taste panels, in which participants were asked to rate each dish for flavor, texture, aroma and appearance. They also were asked how willing they would be to accept lotus as a veg-

Study looks at forest ownership changes

Increasingly in recent years, pension funds, retirement systems and other institutional investors have been buying up Southern timberland for short- or medium-term low-risk, high-return investments, but how will this shift in ownership and forest management and land-use practices impact the forest-products industry, the economy and family-owned forests over the long haul?

Auburn forest economics professor and Alabama Ag Experiment Station scientist Daowei Zhang intends to answer such questions in a new, three-year study funded by the USDA. In the project, Zhang and his research team will identify all institutional timberland owners in the South, map their holdings, assess their economic impacts to rural communities and examine their management and land-use



LOTUS STIR-FRY—This dish rated highest overall among lotus taste-testers. About 93 percent said they would eat it again, 81 percent would recommend it to others and 67 percent would be willing to buy it.

etable and to purchase lotus products or fresh lotus if available.

Ratings overall were positive, and of special interest to potential producers, a majority of panelists, almost 52 percent, said they would go so far as to buy fresh lotus root and try cooking it at home.

To learn more about the lotus research, go to ag.auburn.edu and search for Auburn Lotus Project. ♦



PRIME PROPERTY—Institutional investors looking for short-term returns on their investments own as much as 3 million acres of Alabama timberland.

practices in terms of timber harvesting, reforestation and conservation. The results will help the forest-products industry predict future timber supplies, attract capital investment to the industry and shape governmental policymaking, Zhang says. ♦

IMPACT is a quarterly newsletter the Alabama Agricultural Experiment Station (AAES) publishes to inform state and federal legislators, public policymakers and the general public about AAES research projects and how they affect all Alabamians. The AAES (www.aaes.auburn.edu) is based at Auburn University (www.auburn.edu). Contact **IMPACT** at 334-844-2783 or jcreamer@auburn.edu.



AFTER THE SPILL—Eighteen months after the Gulf oil spill, AAES researchers continue to work on cleanup solutions and to monitor for ecological effects of the disaster.

Research on impact of oil spill continues

The BP oil spill is no longer in the headlines, but AAES scientists at Auburn continue to investigate its impact on the Gulf.

Soil microbiology professor Yucheng Feng, whose research concentrates on the environmental fate and impact of organic pollutants and other contaminants in soil and water, is among them.

Since December 2010, she has been sampling and analyzing sediment and seawater from the Gulf to identify indigenous microorganisms in the water that naturally degrade pollutants and how effectively they break down more complex chemicals.

Feng also is working with Auburn engineering researchers to develop nanoparticles that could break down more resistant chemical residues.

The ultimate goal of her studies, she says, is to make the Gulf as clean as possible now and in the future. ♦

Scientists probe pathogen's modus operandi

Research under way at Auburn to investigate how a vicious, plant-killing bacterium produces costly disease in fruit and nut crops could lead to new fertilizer formulations and other techniques that would fortify infected trees and vines in resisting the bacterial pathogen, *Xylella fastidiosa*.

Though most widely known for wiping out California grape and almond crops, insect-vectored *X. fastidiosa* also infects grapes and peach, plum and pecan trees in Alabama and has been found in blueberries in Georgia.

Once the bacteria infect plants, they head for the xylems, or the "vessels" that carry water and dissolved minerals from the plant's roots to its leaves, and adhere to the surfaces, forming a biofilm.

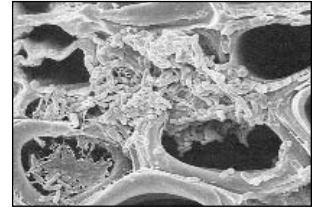
The most common theory is that *X. fastidiosa* damages and kills a

plant is that the biofilm keeps growing until it blocks the xylem. But AAES researcher Leonardo De La Fuente, plant pathologist, and

Auburn biological scientist Paul Cobine are studying the hypothesis that *X.*

fastidiosa kills by feeding on and starving the plant of vital minerals and metals.

If their research validates their premise, their findings will provide an essential foundation for attempting new disease management strategies based on altering mineral interactions in infected plants. ♦



KEY CULPRIT—The bacterium *X. fastidiosa* costs fruit and nut growers millions annually.

\$15 million grant funds biofuels project

Auburn University has partnered with three other universities and two private-sector entities in a five-year, \$15 million research project funded by the USDA that will advance the development of a biofuels industry in the South.

Nine Alabama Ag Experiment Station scientists in biosystems engineering and forestry and wildlife sciences who study the harvesting, processing, transportation and conversion of biomass to biofuels are part of a large, multidisciplinary team of researchers at Auburn, the

universities of Tennessee and Georgia, North Carolina State University and two U.S. companies that develop high-performance seedlings and energy crops.

Auburn Center for Bioenergy and Bioproducts head Steve Taylor says Auburn's specific role is to develop efficient feedstock logistics systems and thermochemical conversion technologies to produce affordable fuels.

This project was one of five selected in USDA's national biofuels competition. Find more on the project at auburn.edu/research/ibss/.

Auburn leads \$6.5M food-safety project

Auburn has received \$6.5 million from the FDA for a five-year multi-institutional project aimed at strengthening protection of the nation's food supply via a standardized, nationwide training effort for state and federal food inspectors.

In the project, led by Auburn's food systems initiative head and

veteran AAES poultry scientist Pat Curtis, scientists at Auburn, North Carolina State, Alabama A&M and Purdue universities will infuse cutting-edge food-safety research and technology into training that will include hands-on instruction and online methods that simulate a "virtual world." ♦

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