
AAES Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

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THE GREAT OYSTER DROP

A project in which AAES researchers at the AU Shellfish Laboratory on Dauphin Island are working to breed an oyster that can survive periods of low or no oxygen had an unforeseen benefit in Hurricane Ivan's aftermath: It helped replenish the Alabama Gulf Coast's largest commercial oyster reef.

Two weeks after the Sept. 16 Category 3 hurricane stormed Alabama's Gulf Coast, marine biologists and conservation officials dropped 55,000 fingernail-size oysters that were being raised as part of the lab's low-oxygen-tolerant-oyster project into Mobile Bay around Cedar Point Reef, in a move to help put the Ivan-ravaged reef on the road to recovery. Ivan destroyed an estimated 80 percent of the oysters on that major reef.



A HELPING HAND—AU oysters slightly smaller than these are helping replenish an Ivan-ravaged reef.

The 55,000 juvenile oysters the lab planted were "extras" from the low-oxygen experiment.

Low oxygen levels are a problem in shallow estuaries such as Mobile Bay, where reefs are no more than four to six feet beneath the water's surface. Extended low-oxygen conditions can stress oysters and take a heavy toll on the population. Developing an oyster tolerant of such conditions would help pump up Alabama's oyster industry. ♦



KIWIFRUIT IN 'BAMA—If you think kiwifruit is exclusive to New Zealand, think again. Two decades of research at the Chilton Research and Extension Center in Clanton has proved, as this orchard shows, that kiwifruit grows, and grows well, in parts of Alabama. In fact, researchers predict commercial growers in Alabama could realize yields as high as four to five tons per acre. While Alabama likely could never compete on a scale with New Zealand and California, kiwifruit has great potential as a profitable speciality crop in central and south-central Alabama, AU horticulture professor Billy Dozier says.

Commission focus: future of agriculture

Auburn University interim President Ed Richardson has appointed a broad-based, 29-member commission to advise him on the future direction of agriculture and associated programs at Auburn University.

Richardson has charged the commission—which includes agricultural producers, agribusiness and industry representatives and environmental interests—with creating a vision that will position AU to lead Alabama agriculture in a rapidly changing agricultural environment.

At its first meeting Dec. 1, the commission identified more than a dozen potential priorities, ranging from improving agriculture's image and enhancing student enrollment in the College of Agriculture to increasing research on alternative energy sources and changing the name of the college to reflect its broadening mission.

All Alabamians have a stake in the commission's process and, as such, will have the opportunity to offer input on the plan via a Web site that will be up and running in January.

Richardson will use the commission's report to define the recommendations for agriculture he will present to the AU Board of Trustees in June. ♦

NABBING THE ATTENTION OF THE FBI

An AU poultry scientist and AAES researcher who focuses on finding non-drug solutions to bacterial and parasite-induced poultry diseases has received the FBI's Director's Award for Community Leadership in recognition of a national food security information network he has developed and maintains.

Bob Norton launched the Web site, Ag-Security.com, in 2002 and uses existing, new and developing technology to detect, identify and respond to both natural disease outbreaks and agriculture-based bioterrorist attacks.

Ag-Security.com's objective is to improve the methods of protecting animal agriculture so the con-

sumer is better assured of the continuation of a safe food supply.

Communication, training and outreach are key components of the program, as Norton, through his Web site, compiles data, studies trends and disseminates information throughout the U.S. to agriculture, industry, government, law enforcement and universities. ♦

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



ALLEY-CROPPING—AU research assistant Martin Kabaluapa points to a blackberry hedgerow that's bordering rows of corn in an alley-cropping study he and AAES researcher Dennis Shannon are conducting at the North Alabama Horticulture Research Center in Cullman. They are determining whether alley cropping—growing a farm crop in the "alleys" between trees or shrubs that have been planted in widely spaced rows—could be a viable and economical alternative to conventional pipe-outlet terraces for soil and water conservation in the southeastern U.S. Thus far, switchgrass has proved the most successful in reducing surface water runoff and soil loss.

A PATENT ON HEALING

AAES entomologists Mary and Ed Cupp and AU veterinary surgeon Steven Swaim have been awarded a patent on the concept of using a protein found in insect saliva to speed the healing of wounds in humans.

The researchers have shown that a specific protein from the salivary glands of the black fly that increases blood flow in the skin can be used to stimulate the healing of surgical wounds. Their evidence indicates, too, that it will work in a similar way to help the healing of chronic wounds, such as skin ulcers and diabetic foot lesions.

Research they published this year demonstrated that surgical wounds treated with this protein in addition to antibiotics heal faster and stronger than ones treated only with the antibiotic. ♦

A hot new use for old motor oil

A research project under way in north Alabama is using furnaces fueled by recycled motor oil instead of propane or natural gas to heat poultry houses and could save state poultry growers more than \$26 million a year in heating costs.

A poultry producer in the private sector actually came up with the concept, and AU researchers are helping further refine the process.

Preliminary indications are that besides reducing the costs of heating poultry houses by as much as 50 to 60 percent, the use of recycled oil also improves in-house

bird performance. Further testing is being carried out this winter.

With petroleum prices at record-high levels, this is a timely and useful piece of extension and applied research work that AU biosystems engineer Jim Donald, ag economist Gene Simpson and agronomist Dave Bransby are carrying out.

Given Alabama's estimated 13,000 poultry houses and an average annual fuel bill of nearly \$4,000 per house, this research could have a multi-million dollar impact on Alabama's poultry industry and the state's economy. ♦

WHERE THE WILD THINGS ARE

Why didn't the rabid raccoon cross the river? Good question, says Jim Armstrong, and he's on a mission to find some answers.

Armstrong, AAES researcher and wildlife damage control specialist at AU, specifically wants to know why virtually no cases of rabid raccoons in Alabama occur west of the Alabama River.

His research team is looking at the density and home range of raccoon populations along the river and searching for any natural barriers that might prove to be deterring

rabid 'coons from crossing the waterway. A scientific look at population density also will paint an accurate picture of how big a threat massive rabies outbreaks could be.

Raccoons aren't the only wild animals Armstrong's on the trail of these days. He's tagging and tracking crop- and forestland-destroying feral pigs in Lowndes County and coyotes in rural, suburban and urban areas to gather information that can be used to develop solid plans of control for the two destructive, non-native species. ♦

Getting stressed at day care

Recent studies show many preschoolers in day care have higher-than-normal levels of a key stress hormone called cortisol. While some cortisol is essential for dealing with life's challenges, extended periods of elevated levels can have negative consequences, including poor sleep, brain-cell death, immune suppression and a higher risk of diabetes and depression.

Are these elevated cortisol levels in children a cause for concern? That's one of the questions AU human development and family studies professors Jackie Mize and Greg Pettit are hoping to answer in a four-year study funded by the National Science Foundation. The AAES human scientists are examining the health, sleep and social-emotional functioning of children in day care. They also are trying to identify the causes of elevated stress hormones in day-care children—be that certain events, such as conflicts with peers, or children's specific personality types.

Mize and Pettit will follow the children in their study on into kindergarten to determine whether elevated stress levels in day care predict how a child will adjust to and cope with challenges in the more regimented school environment. ♦

Information contained herein is available to all persons without regard to race, religion, gender or national origin.