
Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

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AAES FINDING SOLUTIONS

The Alabama Agricultural Experiment Station (AAES), established by the Alabama Legislature in 1883, isn't a building on the Auburn University campus. It's a network of more than 200 faculty—not to mention dozens of technicians, support staff, graduate students and research associates—from the fields of agriculture, forestry and wildlife sciences, human sciences, veterinary medicine, and sciences and mathematics.

These AAES scientists are problem solvers. Working in laboratories, fields and offices across the campus and at 13 research units across the state, they generate innovative, effective solutions to pressing challenges related to agriculture and forestry, food quality and safety, the environment, natural and human resources and rural development. The overall mission: to support economic growth and enhance the quality of life for all Alabamians.

In fiscal 2003, the AAES operated with a budget of \$42 million, including state funds (\$24.7 million), federal funds (\$4.5 million) and \$12.9 million from other sources, i.e., grants and contracts. In the past decade, extramural funding obtained through grants and contracts by AAES researchers has increased 51 percent. ♦

IMPACT is a bimonthly newsletter the Alabama Agricultural Experiment Station (AAES) publishes to inform state and federal legislators, policy makers and the public about AAES research projects and how they affect the lives of 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.

ALIEN INVASIONS

The 'weed from hell'

Cogongrass, which some call the “weed from hell” and others say makes kudzu look like “a weenie plant,” is an Asian weed that has taken deep root and is rapidly spreading across Alabama and the Southeast, killing pine seedlings, posing fire hazards, squeezing out native plants and ruining wildlife habitat.

As part of a cooperative research effort, an AAES research team led by AU agronomist Edzard van Santen is deciphering and studying cogon's genetic structure to determine how it has managed to establish itself so quickly. That research will be vital to the development of effective cogongrass management strategies. ♦

World's most dreaded termite

The Formosan subterranean termite—a highly aggressive, destructive and difficult-to-control exotic termite that makes native termites seem downright pleasant in comparison—is chomping its way across the state and threatening to eat Alabamians out of house and home.

But AU entomologist Xing Ping Hu is hot on the Formosan trail. In a multi-faceted research project, she's analyzing the termite's behavior and biology in search of long-

term control solutions; she's testing various chemical control methods; she's developing a low-toxic, termite-repelling wood

preservative; and she's evaluating the feasibility of using *specially trained dogs to sniff out termites* as a means of early detection. ♦

FACTS: A typical Formosan colony has 10 million-plus termites that collectively devour more than 1,000 pounds of wood a year. And, incidentally, they can penetrate plaster, plastic and asphalt to get to a food source.

... AND SPEAKING OF CANINES' SUPER-SENSITIVE SNIFFERS

Those highly skilled bomb-sniffing dogs that have become part of the scenery at the nation's busiest airports since 9-11 keep their olfactory senses sharpened by feasting daily on high-performance dog food that was developed based on research at Auburn University.

In the study, AU animal nutrition scientist and AAES researcher Keith Cummins and others found that dogs' already amazingly keen

sense of smell—which is 10 million times more sensitive than humans'—was even sharper when the canines were fed specially formulated rations that were high in unsaturated fat. The highly unsaturated-fat diet also made dogs more alert and increased their stamina.

Those findings prompted the U.S. military to reformulate the dog food fed to the nation's explosives-detecting canine forces. ♦

Why the grass is always greener

To some, that grassy spread of land at the busy intersection of South College Street and Shug Jordan Parkway in Auburn may appear to be a prime piece of real estate lying idle in an otherwise rapidly developing commercial district. In reality, though, those 14 acres are home to the AUBURN UNIVERSITY TURFGRASS RESEARCH UNIT, a hotbed for discoveries and solutions that have a multi-million-dollar impact on Alabama's economy annually and are a boon to the state's recreational industry.

Take Alabama's booming golf industry, for instance. Research AU agronomy professor Harold Walker conducted at the unit has given golf course superintendents—not just in Alabama but across the South—the herbicide TranXit™, a powerful weapon against *poa annua*, aka annual bluegrass, an unwanted grass that as recently as last year was one of their most troublesome enemies. One result: smoother, more consistent putting greens, which help enhance Alabama's reputation as a golf destination. ♦

Going one-up on methyl bromide

For decades, produce farmers, nursery operators and sod producers here and abroad have relied almost exclusively on methyl bromide to control insects, nematodes, weeds and diseases in their crops. That soil fumigant will be banned Jan. 1, 2005, though, because it damages the ozone, and scientists worldwide are racing against the clock to find effective, efficient replacements.

Enter AAES researcher and Auburn University plant pathologist Rodrigo Rodriguez-Kabana,

who has developed a liquid form of the chemical sodium azide that not only protects crops better than methyl bromide but actually breaks down into fertilizer as it decomposes in the soil. The company licensed to produce the product commercially hopes to have it registered with the EPA and on the market for some crops this spring.

Meanwhile, AU has filed for two patents on the research. Those patents will ensure that, when sodium azide goes on the market, AU will earn royalties on the sales. ♦



STUDYING THE STURGEON—Elise Irwin, AU fisheries assistant professor, sits by a winding, 24-foot-long Plexiglas “stream” that AAES technicians custom built for a study aimed at helping restore the highly endangered Alabama sturgeon to the Mobile River Basin. Using fish closely related to the rare Alabama sturgeon as subjects, Irwin is working to determine what specific habitat conditions—such as river-bottom characteristics and water depth and velocity—are most crucial for sturgeon to survive and thrive.

Only the best

A four-year, science-based process in which AAES researchers, Alabama catfish farmers and state and federal environmental and natural resources officials worked cooperatively to produce a set of best management practices (BMPs) that will ensure catfish production in Alabama is environmentally sound is being cited by the EPA as a model for other states’ catfish industries to follow.

AU Fisheries and Allied Aquacultures professor Claude Boyd led the extensive research and data collection on which Alabama’s BMPs are based. ♦



POWER SWITCH—Bales of switchgrass at the AAES’ E.V. Smith Research Center on Interstate 85 in Shorter are a perfect playground for this youngster. Actually, he’s being filmed by ad agency crews for a scene in an Alabama Power Company commercial that hit airwaves this summer. The ad promotes the company’s new environmental initiative in which customers can buy renewable energy generated by co-firing switchgrass with coal. AU agronomist David Bransby, an AAES researcher and pioneer in the field of biomass energy crops, took this photo while watching the filming. Bransby, who has studied switchgrass production and bioenergy for 18 years, has proved that such crops can be grown successfully in Alabama and, when harvested for energy production, could be a major economic development tool for the state.

FOCUS ON THE FAMILY: *Marital conflict and sleep-deprived kids*

The link between parental conflicts in the home and sleep deprivation in children is the focus of a study now under way at Auburn.

Mona El-Sheikh, human development and family studies professor, and others are evaluating the

effects of home conflict on children’s sleep patterns and the multitude of other emotional and physiological problems that such sleep deprivation can cause.

This study is one of 22 research projects awarded grants through the

new, competitive AAES Foundation Grants Program. The program gives priority to projects that show the most potential for generating preliminary data that researchers can use to secure additional funding from sources outside of Auburn. ♦

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