

---

---

# AAES Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

February 2005

vol. 3, no. 1

---

---



**BAT MAN**—Troy Best, AAES scientist and AU biological sciences professor, examines an endangered gray bat in north Alabama. Like the other 15 species of bats in Alabama, these bats devour large quantities of insects each night.

## Bats in the belfry—that's a good thing

*Flying like a bat outta hell . . . having bats in the belfry . . . blind as a bat . . . a real dingbat . . . driving one batty . . .*

Pity the poor bat, perhaps the most misunderstood and maligned mammal in the U.S.

That negative, almost evil, public image is something AU biological sciences professor Troy Best is trying to dismantle.

The fact of the matter is that bats are fascinating, intelligent and, most important, highly beneficial creatures, Best says, in that they feed almost exclusively on insects, devouring more than 50 percent of their body weight in insects every night.

That means a summer colony of 1,000 bats weighing five ounces each can consume as many as 4.5 million insects—about 22 pounds'

worth—in a single night. And large quantities of those are crop-destroying pests, especially moths and beetles.

It follows, Best says, that bats—which he calls “nature’s pest controllers”—significantly reduce the amount of pesticides needed on crops. And most farmers and consumers have no idea.

As part of his AAES research, Best studies the ecology of bats, particularly those that are endangered. Among them is the gray bat, which is known to winter in only nine caves in the nation, two of which are in north Alabama. Best has worked with the U.S. Fish and Wildlife Service to implement protection measures at the caves.

His research is a major source of scientific data on the biology of the gray bat. ♦

---

## Calling all stakeholders

The AAES and the Alabama Cooperative Extension System held a series of public meetings across the state in January and early February to update stakeholders about the activities of both organizations, to outline the status of regional agricultural initiatives and research priorities developed based

on citizens' input at a similar series of meetings a year ago and to collect feedback on future programs and focus areas.

Results from the polling of those groups and discussions that arose at the sessions are being consolidated and will be recapped in future issues of *Impact*. ♦

## REASONS TO ROTATE

Years of rotating peanuts and cotton on southeast Alabama farmland have depleted soil organic matter, compacted the soil, increased disease and pest problems and taken a serious toll on yields.

But AAES scientists are finding that by adding Bahia grass into that rotation, and by grazing cattle on the grass, farmers can realize dramatic increases in productivity and profit.

In a long-term, multi-state, USDA-funded study that in Alabama is based at the Wiregrass Research and Extension Center in Headland and headed by AU agronomist Dallas Hartzog, scientists have developed a four-year rotation cycle that includes two years of Bahia followed by a year of peanuts and a year of cotton. The crops are planted using minimum tillage.

Results so far show that deep-rooted Bahia grass breaks up compacted soil and reduces root-eating nematode populations in peanut fields, two factors that cut irrigation and pesticide costs in peanuts and significantly increase yields. Plus, grazing cattle on the Bahia grass the second year means increased income from the cattle.

The experiment, which also involves Georgia and Florida, will generate hard data that farmers can evaluate to determine whether the rotational system is right for them. ♦

## YOUR 2 CENTS' WORTH

Go to [www.auburnag.org](http://www.auburnag.org) now to offer your input, via survey, on the future direction of agriculture and associated programs at AU. All comments will be taken under advisement by a special 29-member commission on agriculture that is to present its recommendations to AU interim President Ed Richardson in May.

To access the Web site, the user name is **auburnag**; the password is **pride**. ♦

---

**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](http://www.ag.auburn.edu/aaes)) is based at Auburn University ([www.auburn.edu](http://www.auburn.edu)). Contact **IMPACT** at 334-844-2783 or [jcreamer@auburn.edu](mailto:jcreamer@auburn.edu).

## Getting pelleted

Every year, Alabama's poultry industry produces 1 million-plus broilers, 2 billion-plus eggs—and 6 million-plus tons of poultry litter.

But now AAES scientists have identified a way to put that litter to use: They're converting it into pellets that possibly can be used to heat poultry houses and greenhouses.

In research led by AU biosystems engineer Oladiran Fasina, the scientists have pinpointed at what exact temperature and moisture level litter must be to form the pellets, which they're producing using a laboratory-scale pellet mill.

In the current phase of the project, the scientists are determining whether the pelletized poultry litter—as well as pellets made from peanut hulls and bioenergy crops such as switchgrass—will burn in a specially designed furnace to provide an efficient source of heat for poultry houses and greenhouses. If successful, this process would give poultry growers and nursery owners an extremely economical alternative to propane and natural gas.



**IN PELLET FORM**—AAES researchers are studying whether pelletized poultry litter, as well as pelletized switchgrass, can fuel furnaces to heat chicken houses and greenhouses.

It also would be an environmentally sound and highly efficient way to manage agricultural by-products. Pelleting reduces three cubic feet of poultry manure down to one cubic foot, which makes those 6 million-plus tons of litter easier to store and transport.

Fasina says pelletizing the litter and finding value-added uses such as bioenergy help the AAES meet a new, Alabama Legislature-funded agricultural initiative that calls for the development of new products from and new uses for poultry litter. ♦

**THE BIG SQUEEZE**—Lab employee Michael Galloway juices Alabama satsumas for a nutritional analysis project AAES scientist Floyd Woods has under way. Woods, a horticulture associate professor at Auburn, is conducting complete nutritional analyses on 25 grown-in-Alabama fruits and vegetables, which differ nutritionally from the same crops grown elsewhere due to different climatic, soil and overall growing conditions. Woods' study will give consumers highly accurate data on the vitamin, fiber and antioxidant content of the local produce they're buying. Says Woods, "We want to get the message out that Alabama produce is very good and very good for you."



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

## LETTING CUSTOMERS DO THE TALKING

Apparel and home furnishing companies spend millions of dollars a year designing and developing new products they believe—or hope—consumers will buy.

Unfortunately, though, they usually don't know whether they've got a winner or a loser until a product hits the market.

And all too often, customers give the products a thumbs-down, voting "no" with their pocketbooks.

AAES scientist Michael Solomon is convinced that if companies would bring customers into the design process from the get-go, they could realize significant savings by producing products that are exactly what customers say they want.

To that end, the AU professor of consumer behavior is developing a Web-based system that will allow home textile manufacturers to present prototypes for products online to their most likely customers and get almost instantaneous feedback via the Internet. The idea is to bring likely customers into the loop in the early stages of design, giving them prototypes to evaluate and redesigning as often as necessary to get the product that consumers will buy.

Solomon contends the streamlined design process will cut product development costs, give customers the products they want and ultimately enhance the market competitiveness of Alabama's home textile industry.

Solomon, who already has developed such applications for apparel companies, will be pilot testing home interiors applications this spring. ♦



**CO-DESIGN**—New system gives customers a voice in product design.

panies would bring customers into the design process from the get-go, they could realize significant savings by producing products that are exactly what customers say they want.