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# AAES Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

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## Not horsin' around

The horse industry is alive and thriving in Alabama, accounting for \$2.39 billion in direct and indirect impacts to the state's economy, a new AU study by AAES researcher Joe Molnar and equine specialist Cindy McCall shows.

Most of the impact is linked to care and maintenance costs for Alabama's 186,871 horses, says the study, which also shows that about one in 20 households here either owns or leases at least one horse. The study reports that Alabama, with its mild climate, abundant land, low taxes and low land costs, is ripe for further growth of the equine industry. ♦

## THAT'S GARBAGE

In the nursery industry, pine bark and peat moss are now the planting substrate of choice. But declining supplies of the former and soaring freight costs to ship the latter from Canada and Germany have scientists at Auburn University searching for alternatives.

They've found one, in the form of composted household garbage that otherwise would have been bound for rapidly filling landfills.

In five years of research using compost processed at a plant in Tennessee from unsorted household waste, AU horticulture professor Jeff Sibley and others have determined that flowers, shrubs and trees grown in the composted waste perform as good as or better than those grown in pine bark and peat. They're testing vegetable crops on the compost this spring.

Using garbage compost as planting material in the nursery industry would yield significant environmental and economic benefits, relieving tremendous pressures on landfills and saving cities and counties the costs of hauling garbage to landfills and landfill fees. The compost could then either be incorporated into the soils in public landscapes or sold. ♦



**BIOENERGY**—The benefits of using switchgrass as a source of ethanol were a major topic of discussion during a legislative and media bioenergy briefing and demonstration at the E.V. Smith Research Center. Above, with switchgrass as a backdrop, Auburn energy crops professor David Bransby, right, the nation's premier switchgrass authority, fields questions from a group that includes, from left, State Rep. Richard Lindsey, D-Centre; U.S. Sen. Jeff Sessions, R-Ala.; and AU Interim President Ed Richardson. At left, switchgrass harvesting was one of several demonstrations at the event.

## Fueling the future

Outside the tent, a small plot of eight-foot-tall switchgrass swayed in a chilly late-February wind.

Inside the tent, Auburn University Interim President Ed Richardson was underscoring the significance of the event that had brought state and federal lawmakers and state and national news media to the middle of a rain-soaked field at the AAES's E.V. Smith Research Center in Shorter.

"Today marks a change in direction for agriculture in many parts of the state and a change, in my view, in the mission of agriculture at Auburn University," he said.

The event was a bioenergy briefing and demonstration, during which U.S. Sen. Jeff Sessions called the nation's dependence on foreign oil a threat to America's national security; AAES researcher David Bransby assured the crowd of 300-

plus that it is technologically possible to produce 30 percent of U.S. transportation fuels from agriculture and forestry; and both asserted that Alabama, and research at Auburn, can play a lead role in that.

The event came on the heels of President George W. Bush's 2006 State of the Union address, in which he said the nation is "addicted to oil" and called for additional research funding to produce ethanol "not just from corn but from wood chips, stalks or switchgrass."

Bransby, the nation's foremost authority on switchgrass, has been studying the native prairie grass as an energy crop for 20 years. His research indicates that biofuels made from switchgrass and other ag crops and byproducts can both reduce U.S. dependence on foreign oil and strengthen the nation's farm economy. ♦

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**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).



**PLANTING TIME**—Workers plant sweet potatoes in hairy vetch residue at the AAES's North Alabama Horticulture Research Center in Cullman. A just-completed AAES field experiment shows that Alabama sweet potato growers could significantly cut their production costs, boost their yields and enrich their soil if they planted cover crops and switched to a no-till planting regimen. Researchers led by AU horticulturist Joe Kemble found that sweet potatoes planted directly into the stubble of crimson clover or hairy vetch cover crops had higher yields than those planted in conventionally tilled bare-ground spots, even when the bare-ground plots got two times more nitrogen. The cover crops also served to loosen the soil and increase organic matter. Alabama has an \$8.3-million sweet potato industry and ranks as the fifth state nationally in acreage. Most of the state's 50-60 growers farm in Cullman and Baldwin counties.

## ***Campylobacter*: the unsung bug**

When it comes to food poisoning, the big outbreaks are the ones that make headlines: *E. coli* in burgers, *Listeria* in hot dogs, *Salmonella* in poultry. But the most commonly reported bacterial cause of foodborne infection in the U.S.—close to 2.4 million estimated cases a year—rarely makes the news. The name of this low-profile bug? *Campylobacter*.

You don't hear about it in the media because virtually all cases of this diarrhea-causing pathogen occur as isolated, sporadic events, usually from mishandling raw poultry or eating undercooked chicken, or from consuming contaminated water or milk.

*Campylobacters* commonly occur in the intestinal tracts of

poultry, although the birds show no signs of illness. At slaughter, though, the bacteria can be transferred from the intestines to the meat. More than half the raw chicken in the U.S. market likely has *Campylobacter* on it.

In his lab at Auburn University, AAES microbiologist Omar Oyarzabal is working to develop a technique for the rapid identification of the bacteria in broiler carcasses at the processing plant and at the retail level. That information will help health authorities and the industry establish realistic standards for the level at which *Campylobacter* could be present and the product still be safe for human consumption. ♦

## ***Following their trail***

From catfish to cattle, farm animals in today's intensive animal production operations require antibiotics.

Now, three AAES researchers are investigating what happens to these antimicrobials that are given to livestock once they leave the animal and enter the environment.

The study by AU biosystems engineer Puneet Srivastava and soil scientists Jacob Dane and Yucheng Feng is the first to look at how the antibiotics are transported in the soil and how they impact the structure of and organisms in the soil.

Beyond gathering basic data on antimicrobial movement through the soil, the research will also help scientists develop better management practices for using antibiotics so that farmers can produce livestock in the most environmentally sound manner. ♦

## **SUPER DUDS**

The creation of new fibers and fabrics that would protect the wearer from toxic chemicals by basically decontaminating themselves is the object of a study just under way at Auburn University.

In the project, AAES researcher and AU consumer affairs professor emeritus Lewis Slaten hopes to develop fabrics that, when activated by sunlight, would chemically destroy toxic chemicals. Apparel made from such fabrics would be invaluable for agricultural tasks involving pesticides, for cleanup of toxic organic chemicals and as protective barriers against chemical agents, thus playing a vital role in homeland security.

Slaten, an internationally recognized leader of textile and apparel evaluation and testing, was instrumental in setting the UV labeling standards for garments that the government and industry use today. ♦

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