

---

---

# AAES Impact

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

June 2005

vol. 3, no. 3

---

---

## SEEING GREEN

Alabama's green industry, often overlooked as part of the state's agricultural scene, could finally get the recognition it deserves in light of a new Auburn University study that shows it is the largest cash crop in the state, contributes \$1.9 billion annually to Alabama's economy and provides jobs for almost 31,000 Alabamians.

The study by AU ag economists is the first-ever comprehensive economic analysis of the state's green industry, which includes nursery and greenhouse, turfgrass and sod and lawn and landscaping operations as well as retail businesses that sell plant materials and related products.

A breakdown of the different sectors of the industry here show:

- 767 nurseries and commercial greenhouses in Alabama contribute almost \$306 million to the economy and employ 4,319 workers;
- the state's 69 turfgrass and sod operations employ 1,030 work-



**BIG BUSINESS**—Alabama's green industry brings in big bucks.

ers and have a \$99 million impact;

■ state-licensed lawn and landscape businesses give more than 8,500 people jobs and have an impact of \$645.4 million;

■ 727 retail establishments selling plants, shrubs and related products employ 7,000 Alabamians and have an total impact of \$855.6 million annually.

In addition to the \$1.9 billion, the industry's impact is felt through the payment of \$269.4 million in state and local taxes. ♦

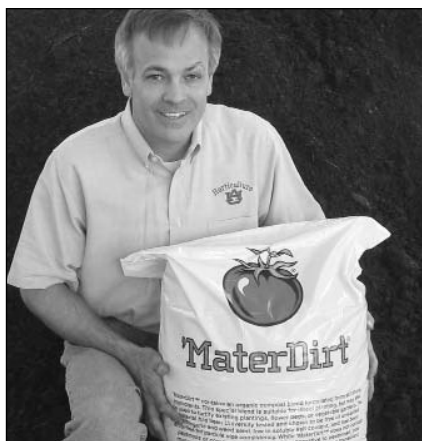
## Give me some of that 'MaterDirt, please

Eight years of research into finding sustainable uses for composted agricultural wastes have yielded a new product ideal for patio gardeners who love the taste of homegrown tomatoes.

It's called 'MaterDirt®, an item that AU horticulturist and product developer Jeff Sibley says is an organic compost blend that offers many of the same properties afforded by cow manure but that contains no animal by-products, or peat moss either, for that matter.

In addition to a high organic content, 'MaterDirt offers excellent nutrient- and water-holding capacities. It's also been university tested and shown to be free of unwanted pathogens and weed seed.

Each bag contains 1.5 cubic feet of 'MaterDirt and is designed for tomatoes to be planted directly into it.



**GOOD FOR 'MATERS**—AAES scientist Jeff Sibley shows off a bag of composted 'MaterDirt.

A bag has a zip-lock top so when the season's over, you can reseal it and use it again next year.

'MaterDirt is being sold at farmers co-ops around the state. Sales proceeds will go toward recouping research costs. ♦

## TARGET: CANCER

An AU poultry scientist's research into the reproductive processes of egg-laying hens could hold keys to the early detection and perhaps eventually the prevention of ovarian cancer, the most fatal of all gynecological malignancies.

Working in collaboration with University of Alabama at Birmingham oncologists, AU assistant professor and AAES researcher Wallace Berry has established that commercial laying hens, because they have a hormonal cycle and ovarian surface cells that are remarkably similar to humans' and because they have a high rate of naturally occurring ovarian cancer, are viable animal models for ovarian cancer research. In fact, by 5 years of age, 40 percent of laying hens spontaneously develop the cancer.

Animal models are crucial to understanding the causes of diseases and developing new treatments, but until now there have been no acceptable ones for ovarian cancer research. Having the hen as a valid experimental model now lets Berry and other scientists study how the disease originates, how to detect it earlier, how to treat it more effectively and how to prevent it—all with the main goals of early diagnosis and, ultimately, prevention.

Berry's research has shown that temporarily interrupting hens' reproductive cycles by giving them the female hormone progesterone lowers the rate of ovarian cancer in the birds from 40 percent to 25 percent. ♦

---

**22,000 WOMEN WILL BE DIAGNOSED WITH OVARIAN CANCER THIS YEAR; MORE THAN 16,000 WOMEN WILL DIE OF THE DISEASE.**

---

**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).



**WAR ON FIRE ANTS**—AAES fire ant researcher Fudd Graham scoops up a mound of fire ants, which he'll expose to phorid flies that will lay eggs in the ants' bodies. The ants then will be returned to their mounds. In a couple of weeks, the eggs will hatch and the maggots will eat off the ants' heads, emerging later as flies.

## OFF with THEIR HEADS

When fire ants sneaked into the U.S. from South America 70 years ago, they left all natural enemies behind in their native land. That's why they've spread to such uncontrollable proportions here today.

But now, hundreds of thousands of gnat-sized flies that terrorize and kill fire ants in South America have spread over 35,000



**Phorid fly**

square miles of Alabama, thanks to AAES fire ant management researchers at AU.

The scientists have released 100,000-plus of the fire ant-decapitating phorid flies at 13 sites in the state—most recently at the Sand Mountain Research and Extension Center with State Sen. Lowell Barron and other dignitaries on hand—and the flies have multiplied dramatically.

The phorids don't kill enough ants to destroy colonies, but they do seriously disrupt things, as the ants' innate fear of these flies sends them deep into their mounds. They won't even come out for food, and many literally starve to death.

Phorids won't ever eradicate fire ants, but they will provide a safe, biological means of control. ♦

## No longer knocking out the nematodes

For more than 30 years in their battle against root-destroying nematodes, cotton farmers have relied on the pesticide aldicarb, known commercially as Temik, for a good six weeks' worth of inexpensive control.

But in recent years, Temik hasn't been knocking out root-knot nematodes like it used to. What once worked for six weeks isn't lasting six days. What's up with that? Have the nematodes become resistant?

No, says AU plant pathologist Kathy Lawrence. What's happened, her research shows, is that soil bacteria have evolved to the point where they can break the nematicide down quickly. Alternative nematicides are available, but at a cost of more than double Temik.

Lawrence and AU soil scientist



**PRIME TARGET**—Nematodes are a constant nemesis for cotton growers.

Armed with that information, producers can decide whether to stick with Temik, switch to costly alternatives—or follow Lawrence's other findings in the study, which indicate that rotating cotton fields to corn for two years reduces the rate of aldicarb degradation in the soil. ♦

Yucheng Feng have applied for a patent on a lab process that will test growers' soil and rapidly let them know how fast Temik will break down in their fields.

## In for a double shot of CO<sub>2</sub>

The concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere is increasing and expected to double in the next century.

A group of AAES and USDA scientists in Auburn is determining what impact this change in global climate will have on Southern longleaf pine forests.

Preliminary findings show that



**TALL PINES**—Longleaf pines apparently thrive on elevated CO<sub>2</sub> levels.

the pines flourish under elevated CO<sub>2</sub> levels, growing faster and denser, with more branches and needles.

That enhanced growth, however, appears to come at the expense of other tree species, plants and grasses in the forests, says AAES researcher and AU plant anatomist Roland Dute, who notes that, in the long run, forest diversity will be lost.

And while faster-growing pines will shorten the number of years to bring trees to the market, that could result in an oversupply that would depress timber prices, he says. ♦

## On the nutrition front: The power of thiamin

Manufacturers have been adding thiamin to dairy, sports, meal-replacement and fruit-type beverages for years, but they had no data on how long the vitamin maintained its potency. AAES food scientist Leonard Bell has filled that information void with a study detailing thiamin's stability in liquids of varying pH levels and bases. Companies can use the data to help determine expiration dates for products. ♦

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