AAES **Impact**

RESEARCH NEWS FROM THE ALABAMA AGRICULTURAL EXPERIMENT STATION

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Spicing up the turf

A team of AAES researchers is investigating whether certain common spices and herbs can be used to effectively and economically control root-eating nematodes in turfgrass.

Nematodes are a nemesis of sod producers, and the nematicide they have relied on for years, methyl bromide, is being banned from the market.

The beauty of this study is that, if these extracts of cinnamon, clove, almond, mustard and thyme oil prove successful in knocking out nematodes, producers won't have to wait years for government approval. That's because all the substances are already on a list of pesticides that do not require Environmental Protection Agency registration.

This project has moved from the laboratory to the field, where AU plant pathologist Rod Rodriguez-Kabana and turfgrass agronomists Beth Guertal and Harold Walker are testing combinations of the compounds to determine what works best. Bob Taylor, an AU ag economist, will look at the cost-effectiveness factor.

ALSO ON the methyl bromide front, Rodriguez-Kabana has just been awarded two patents on the use of the chemical sodium azide as a highly effective alternative in both turfgrass and fruit and vegetable production. The U.S. company that's licensed to produce the product commercially, meanwhile, has been waiting on EPA registration for more than four years. ◆

TAKING A SPIN — Justin Whitehead, a senior agricultural economics major at Auburn University, watches as an Auburn supermarket shopper spins for her "prize" after participating in a survey designed to measure consumers' willingness to pay for certain beef characteristics. Preliminary tabulations from the survey indicate shoppers would pay significantly more for beef that was hormone- and antibiotic-free, that was grass-fed and that could be traceable back to the farm. AAES researchers conducted the survey as part of a project to determine the marketing potential for forage-fed, Alabama-raised beef. Survey participants could win up to two pounds of beef and $3 in cash just by taking part in the sampling.

Farming pharmaceuticals

Plants that have medicinal value represent a growing industry that could have a great deal of potential in Alabama.

Dennis Shannon, AAES researcher and AU agronomist, is working with researchers from Alabama A&M and Tuskegee universities to find ways for Alabama to tap into that dietary supplement market.

In the project, Shannon is looking to identify species of medicinal plants that will grow well in the state. Specifically, he's going to target several varieties of three species: turmeric, Spanish sage and astragalus root.

If these species grow well here, he'll then test fertilizer rates, planting dates and other cultural practices in order to develop production guidelines growers can follow to ensure the highest yields of plants with the optimum levels of active ingredients.

Once Shannon has identified the species and varieties of medicinal plants to grow and how to grow them, other components of the research project will focus on processing and marketing. ◆

PUTTING MORE 'SPORT' IN SPORTFISHING

Sportfishing could soon advance to a whole new level in Alabama, thanks to a just-launched AAES research initiative.

Says David Rouse, sportfish initiative leader and AU fisheries department head: "We are rethinking sportfish management techniques and developing new strategies that are aimed at helping producers raise ponds full of trophy bass."

Research will take state's sportfishing to new heights.

Researchers will be keying in on everything from pond construction and stocking levels to reproduction rates and feeding strategies.

Standing to benefit from the initiative are Alabama pond and small-lake owners who want to develop their fisheries into money-making ventures, avid anglers willing to pay for good fishing and, ultimately, the state's economy.

Alabama has some 50,000 ponds covering 150,000 acres. ◆

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.

Sericea lespedeza to the rescue

Ask sheep or goat producers what's the top threat to their herds' health and survival, and they'll say it's gastrointestinal parasites.

Typically, producers rely on commercial dewormers to control parasite populations, but the most common type of parasite has developed resistance to many dewormers.

AAES scientist and AU plant breeder Jorge Mosjidis and a team of USDA, LSU and Fort Valley State University scientists have discovered a potential solution to the parasite problem.

They have found that feeding the animals on a forage legume called sericea lespedeza—specifically, the relatively new sericea lespedeza cultivar "AU Grazer," which Mosjidis developed—provides the same level of parasite control as dewormers.

And as an added bonus, the diet of sericea lespedaza tends to prevent bloating, which reduces the ruminants' methane emissions into the atmosphere. ◆

Tracking down the source

For some time, health and environment officials had known that Catoma Creek in Montgomery County was contaminated with *E. coli* bacteria, but existing testing methods didn't allow for determining the sources of the bacteria.

Enter AAES scientists Yucheng Feng and Wes Wood, two AU agronomists, and Steve Ditchkoff, wildlife biologist. Using a novel research method, they created a reference library that genetically catalogs *E. coli* strains found in the feces of hundreds of different warm-blooded creatures, including humans, that live in the creek's watershed. They then compared water samples from the creek to entries in that library.

What they found is that, of the 59 percent of *E. coli* isolates that could be identified, 31 percent are of human origin, 24 percent each from dogs and waterfowl, 7 percent each from deer and wild turkeys and 3 percent each from cattle and chickens. ◆

Exotic aquatic: Out to foil watermilfoil

There was a time when tens of thousands of ducks spent the winter in the Mobile-Tensaw Delta. In recent years, however, duck populations overwintering in the Delta have plummeted to a few thousand.

AAES wildlife biologist Gary Hepp and graduate student Chad Newbolt think that an exotic plant, Eurasian watermilfoil, may be part of the problem.

Watermilfoil grows fast and spreads like a mat over the water's surface. It can restrict swimming, boating and fishing, but its more serious consequence ecologically is to claim space and light from native aquatic plants that are more nutritious than milfoil and are preferred foods of many ducks.

Hepp and Newbolt's studies in the Delta indicate that the clearer the water—i.e., the less sedimentation—the more well established milfoil becomes, while native plants tend to do better in muddier waters.

Altered stream flows from dams upstream from the Delta could be changing sediment loads, leading to conditions that actually favor milfoil. Reestablishing natural stream flow variability, especially in the spring, may create better growth environments for native plants, helping them compete with milfoil and eventually increasing habitat quality for native ducks. ◆

AAES AT A GLANCE

The Alabama Agricultural Experiment Station isn't a building on the Auburn University campus. It's a network of more than 200 scientists who work to find innovative, effective solutions to pressing challenges related to agriculture and forestry, food quality and safety, the environment, natural and human resources and rural development.

For fiscal 2006, the AAES has an operating budget of $53.7 million, including $29.1 million in state funds, $4.6 million in federal funds and $20 million from grants, contracts and other sources. ◆

IT'S A SNAP—Auburn horticulture graduate researcher Brad Reeder checks the stem lengths on snapdragons grown inside high tunnels at the Wiregrass Research and Extension Center in Headland. Reeder's investigating whether, using high tunnels, Alabama growers could produce snapdragons year-round to supply to state florists. High tunnels are plastic-covered greenhouse-like structures that have irrigation but no electric heating or ventilation systems, meaning they can be built for a fraction of the cost of greenhouses.

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