New treatment safeguards against *E. coli*

An SAES food scientist has been awarded a patent for inventing a natural treatment for ground beef that could reduce *E. coli* and other foodborne illnesses. Several international companies have shown an interest in licensing the technology.

Developed by Dr. Salam Ibrahim, the new treatment inhibits the growth of *E. coli* O157:H7 in ground beef. It was created by combining an antioxidant compound found in oregano with health-promoting bacteria that is used in yogurt and other dairy products. Both substances fight pathogens, but together they are even more effective, Ibrahim said. He foresees the natural treatment going over well with consumers who may be uneasy about irradiation or chemical preservatives.

Food safety regulations do not allow *E. coli* to exist in food at any concentration. Nevertheless, a few of the bacteria do occasionally wind up in food. Ibrahim sees his treatment not as a substitute for safe food handling, but as an additional safeguard.

The patent is the third to come out of SAES research, and the sixth for the University. Other SAES patents include a bioprobe useful for rapid detection of foodborne pathogens, and a protein that is helpful for studying and understanding the immune system.

Patents are increasingly important to research universities because they serve to breach the gap between the laboratory and the real world. Manufacturing industries license the technolo-gies and then produce commercial products for the benefit of consumers and agribusiness. Meanwhile, universities can reap royalties, which they use to build their academic programs.

Although *E. coli* is one of the most severe foodborne infections, the good news is that the numbers of infections have declined more than 40 percent since regulations were stepped up in 1996. Nevertheless, the pathogen remains a focus of concern; it causes an estimated 73,000 infections and approximately 60 deaths each year.

Ibrahim hopes the new treatment will lower that number even further. “People are becoming increasingly aware of food safety, and want to be sure that the food they eat is safe,” he said. “This treatment doesn’t lessen the importance of safe food handling, but it will greatly reduce the chance of accidental *E. coli* infections.”

**inside**

- SAES to co-host USDA National Small Farm Conference
- Family ties get strong new program

Dr. Salam Ibrahim's method for inhibiting the growth of *E. coli* in ground beef is now a patented process.
Addison McMillan and his mother Gloria are participating in the SAAF program in Hoke County.

Strong families, SAAF families

Raising children isn’t easy nowadays, and any parent knows that the teen years can be the toughest. To help families with children on the threshold of adolescence, the Center for Family Research at the University of Georgia developed SAAF — Strong African American Families — a youth intervention program for rural families. The Center has researched the program in Georgia, and has recently partnered with SAES to study it further in North Carolina.

The purpose is to study the effectiveness of delivering SAAF through Cooperative Extension.

“We think Extension will be a good fit because rural communities already know us, established agency, and we think Extension will be a good fit,” said Dr. Gladyse Shelton, director of Extension and Family Studies. “Extension is a well-known, well-loved, well-established agency, and we think that will encourage participation.”

The SAAF curriculum grew out of years of longitudinal studies of African American families, conducted by the Center for Family Research. The studies found that the following were important to youth development in this population:

• Involved, supportive and highly vigilant parenting.
• Open, positive communication with children that decisions that affect them.
• Adaptive racial socialization.
• Consistent family routines.
• Parental involvement in the educational process.
• A high degree of community socialization.

Shelton forecasts many positive outcomes from SAAF, including stronger families, children better able to achieve their goals, and increased expertise in conducting family research and program delivery. She anticipates that after the final revisions are made to the program based on research findings, the program will be approved for national distribution within a few years.

What they are continuing to find in Georgia is that these families who participate in SAAF together form lasting bonds, and after surveys of both groups, researchers hope that families here will have a similar experience.

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With a nationwide roster of agricultural experts and practitioners participating, the Fourth National USDA Small Farm Conference gets under way this month at the Koury Convention Center in Greensboro.

Scheduled for Oct. 16-19, the conference is jointly hosted by the N.C. A&T State University and N.C. State University and their respective agricultural schools. About 500 people are expected to attend.

On SAAF nights, families gather at the Hoke County Cooperative Extension Center to eat dinner together. Then they split into two groups for about an hour, with parents meeting with a presenter in one room, while children meet with a presenter in another. During the second hour, parents and children join together in discussions and activities with both presenters, where they put into practice what they’ve learned.

Eliza MacLean’s Cane Creek Farm is a stop on one of the farm and agribusiness tours for Small Farm Conference participants.

National Small Farms Conference puts SAES in the spotlight

The SAEs’ 27th annual Research Apprenticeship Program (RAP) this past summer, brought a select group of high school students to the A&T campus for four weeks.

The 16 research apprentices for 2005 were:

Front row l-r: Lauren Johnson of Marietta High (GA); Amber Brown of Charles Herbert Flowers High School (MD); Starrnett Tillery of Louisburg High (NC); Janmye Musely of South Central High (NC); Lashae High of Northeast Halifax High (NC).

Middle row l-r: Jessica Farrar of Southeast Guilford High (NC); Amanda Spruill of North-west Halifax High (NC); Thalton Stringfield, Jr. of Union High (NC); Amanda Morgan of Southeast Guilford High (NC); Zellen Williams of East Forsyth High (NC).

Back row l-r: Stephen Falls of Andrews High School (NC); Wayne Kimball, Jr. of North-west Halifax High (NC); Benjamin D. Hopkins of Kinston High (NC); Samuel Young of Northeast Halifax High School (NC); Gregory Basket of Louisburg High (NC); Janeon Jones of South Central High School in Greenville (NC).

from across the country, it is also another chance for the School of Agriculture and Environmental Sciences to showcase its work. Conference participants will have 10 tours of innovative farms and agribusinesses in central North Carolina to choose from, and among the stops on one of the tours is A&T’s 568-acre University Farm.

“The tour of the University Farm gives us the chance to spotlight the research we’re doing in SAES, and it gives the attendees the chance to take a closer look and examine some of our practices,” says M. Ray McKinney, Extension administrator and associate dean. “We’re excited about having people come here to Greensboro to attend this conference and to attend our University farm tour.”

A&T also has a growing national reputation because of some of its programs and publications, such as the Ways to Grow, Community Voices, and Voices Reaching Visions programs; as well as the Research and Solutions for North Carolina magazines, McKinney says.

“We have had a lot of our staff who have served on national committees and there is a recognition that A&T has the talent and the expertise to help produce these conferences,” says McKinney. “We have a history with these audiences that lends us credibility.”

Dr. Ralph Noble has been named chairman of the Department of Animal Sciences. He comes to the SAES from Tuskegee University, where he was co-coordinator of teaching, research and outreach programs in animal, poultry and veterinary sciences. Noble received his bachelor’s degree in agricultural sciences and master’s degree in animal sciences from Tuskegee University, and his Ph.D. in reproductive physiology in animal sciences from the University of Illinois, Champaign-Urbana. Noble’s research focus has been on improving reproductive performance of goats and cattle. He has worked extensively with small farmers in the Black Belt area of the southeastern United States. He has also been involved in a number of projects in Africa, Egypt, China and the Caribbean.

Dr. Aroma Diouf has joined the Department of Natural Resources and Environmental Design as coordinator of the Earth and Environmental Sciences Program. Diouf received his doctoral and master’s degrees in Earth and Environmental Sciences at the Graduate Center of the City University of New York. His research focus has been on water quality and treatments. Among the specific areas in which he has worked are removal of hazardous magnetic heavy metal from water reservoir systems, bio-corrosion problems in the oil industry, and the use of biogeochemical models as field sensors for tracing the paleoenvironment on earth and meteorites.

Diouf holds a patient on a method for removing biogeochemical metal pollution from aquatic environments that was developed at the Rensselaer Laboratories of Applied Geology and Environmental Sciences in Troy, New York.

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mark your calendar
• North Carolina State Fair:
  Raleigh, Oct. 14–23

• The annual University Farm Field Day:
  Oct. 20

• Research Apprentice Program application deadline for 2006:
  Feb. 10

• Small Farms Week 2006:
  Mar. 19–26

Seven tons of butternut squash from one of Dr. Charles Raczkowski’s research projects at the University Farm were donated to food banks, homeless shelters, soup kitchens and other agencies that distribute fresh produce to needy individuals and families. The squash were part of Raczkowski’s research comparisons of sustainable production practices and traditional methods.

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