2003

**Volume 1, Number 3 (2003)**

UT Institute of Agriculture

Follow this and additional works at: [https://trace.tennessee.edu/tnlandlifescience](https://trace.tennessee.edu/tnlandlifescience)

Part of the Agriculture Commons, Animal Sciences Commons, Food Science Commons, Forest Sciences Commons, Plant Sciences Commons, and the Veterinary Medicine Commons

**Recommended Citation**

https://trace.tennessee.edu/tnlandlifescience/10

The publications in this collection represent the historical publishing record of the UT Agricultural Experiment Station and do not necessarily reflect current scientific knowledge or recommendations. Current information about UT Ag Research can be found at the [UT Ag Research website](https://utagresearch.tennessee.edu).

This Magazine is brought to you for free and open access by the University of Tennessee Institute of Agriculture Publications at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Tennessee Land, Life and Science Magazine by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact [trace@utk.edu](mailto:trace@utk.edu).
A FOCUS ON AGRICULTURE AND NATURAL RESOURCES PROGRAMS

ENTERING AN EXCITING NEW ERA

Inside this issue
BOOMING biotechnology
lessons in LEADERSHIP
new OPTIONS for producers

TENNESSEE
LAND life & Science

VOL.1/NO.3 • UT INSTITUTE OF AGRICULTURE

THE University of TENNESSEE
LAUNCHING A NEW ERA

This issue of Tennessee Land, Life, and Science focuses on biotechnology. Biotechnology is growing in Tennessee, and the University of Tennessee Institute of Agriculture is helping to stimulate that growth. Growth of biotechnology will benefit Tennessee’s agricultural and forestry sectors, as well as provide important products and services for all of our citizens. Biotechnology will bring new varieties of plants, improved livestock, better vaccines, safer foods, disease-resistant horticultural crops, improved nutrition, and better medicine.

Our faculty members are using biotechnology to find solutions to problems and to develop new products for our agro-forestry sector. The expertise that our faculty hold in biotechnology coupled with our new Plant Biotechnology Building, which experts say is one of the finest scientific facilities in the United States, will help us leapfrog other universities in applying the tools of biotechnology in the plant sciences.

The new building was funded by appropriations from the U.S. Department of Agriculture and the state of Tennessee. This funding reflects the unique partnership between federal and state governments in supporting the nation’s land grant universities. Land grant universities fulfill a critical mission of developing and delivering information and technology to meet each state’s specific needs. Three new buildings have been added to the UT campus recently through the federal-state land grant program. While the Plant Biotechnology Building is the largest of these, the other two—the Joseph E. Johnson Animal Research and Teaching Unit and the Tennessee Forest Products Center—are equally important to Tennessee’s economy.

Tennessee is attracting existing and emerging companies because of its growing biotechnology emphasis. From the Tennessee Valley to Memphis, knowledge-based biotechnology companies are developing new products, creating high-technology jobs for our educated students, and making Tennessee prominent in the nation’s biotechnology community.

Jack H. Britt
UT Vice President for Agriculture
Our programs are GROWING

Even with restrictions in state funding, UT’s programs in agriculture and natural resources, veterinary medicine, and family and consumer sciences have grown 27 percent in five years. Support for this expansion comes from a 175 percent increase in the amount of competitive grants and contracts brought in by researchers and specialists. Annual grant and contract funding has increased from $7.7 million to $21.2 million since 1998. For 2003, the Institute’s total expenditures on programs, services, and personnel is $121 million. That’s a sizeable investment that brings rich rewards in services and support to Tennesseans in every county in the state.

IN TOUCH with Tennessee

1,940 miles. That’s the distance that deans and administrative leaders of UT’s Institute of Agriculture have driven on In Touch with Tennessee tours. For the past three years, the leaders have hit the road to meet with producers, hear from them about issues they are facing, and to strengthen relations with the Tennessee agro-forestry industry and the state’s network of veterinary medicine practitioners. This year’s tour, held in late October, focused on veterinarians, agribusiness officials, county commissioners, and agricultural committees in upper East Tennessee.

BIGGER, BETTER poinsettias

That’s the goal of research underway in UT’s Department of Plant Sciences. Associate professor Dr. Max Cheng and doctoral student Kim Pickens are working with a cultivar named Winter Rose™ that produces showy, rose-like curled bracts. With microbiologist Dr. Stephen Kania, the two are attempting to double the number of chromosomes to increase bract and flower size. Another goal of their research is to enhance the plant’s overall structure. The genetic engineering shows promise, and that’s good news for people who enjoy the holiday plants and for growers who produce them.
TEAMING UP on ornamental hort

The Tennessee Agricultural Experiment Station and Tennessee State University's Cooperative Agricultural Research Program are teaming up on an ambitious program of joint research and collaboration. The U.S. Department of Agriculture has provided more than $700,000 in funding for research programs to improve woody landscape plants. An additional $200,000 from the USDA supports a newly established Tennessee Fire Ant Research and Education Team. The team will work to control fire ants in the state’s nursery industry and provide educational programs to nursery producers.

4-H’ers perform at NATIONAL YOUTH SUMMIT

The Tennessee 4-H Performing Arts Troupe shared their talent and energy with participants at the Second National Youth Summit, held Nov. 6-8 in Washington, DC. The 16-member troupe traveled to DC to serve as the featured artist for the event, which was hosted by the U.S. Department of Health and Human Services.

The summit brought together national, state, and community leaders; youth service providers; nationally acclaimed experts in youth development; and young people who are active in their communities. The troupe is one of dozens of 4-H programs sponsored by the UT Agricultural Extension Service. It was selected to perform at the summit from among entertainment groups across the country.

Scholarships LEAD THE SOUTH

UT’s College of Agricultural Sciences and Natural Resources’ scholarship program is rated top among southern region land grant universities. More than $800,000 was available in scholarships for this academic year.

“We are working hard to inform high school students that good opportunities for scholarships exist in our programs, and once our students graduate, they are very competitive in the job market,” says Dr. Mary Albrecht, associate dean of the college.

More than a third of the college’s students receive scholarships, and scholarship awards average $2,100. Factor in the expected awards from the Tennessee State lottery and future in-state agriculture and natural resource students could receive $5,100 or more in scholarship assistance. More information on awards is available at http://web.utk.edu/~finaid/ or by calling (865) 974-3131.

We’re looking for the BEST AND BRIGHTEST

Do you know a student who would be perfect for the University of Tennessee? Let us know about it. Often friends of the university have family members or friends whom they want to make certain UT is contacting and encouraging to apply for admission. UT’s Undergraduate Admissions is happy to receive nominations of students to include in this special recruitment category. To find out more about the Friends of the University Program, contact Admissions at admissions@utk.edu, (865) 974-2184 or (800) 221-VOLS (8657), a toll-free call in Tennessee.
For the sole student representative on the University of Tennessee’s Board of Trustees, time management has taken on a whole new meaning. Carol White, a 21-year-old junior from Pelham, Tennessee, joined the board in July 2003, just weeks before former President Shumaker’s resignation.

As a member of the presidential search committee, she now plays a key role in the rigorous selection process for UT’s next president, ensuring students have a voice in the process. “I feel confident this will be a different kind of search,” White says. Indeed, this time around, four students, one from each of the main campuses, serve on the presidential search advisory council. “There is no room for a political aspect, this is an open process,” she says.

“The biggest issue is the need for stability in this office, finding a president to embody the Volunteer spirit, someone we can trust and count on. I’m encouraged by the number of students all across the state who want to be part of the process,” says White.

David Golden, associate professor in the Department of Food Science and Technology and White’s adviser since her freshman year, says White’s academic gifts, high energy, and work ethic have helped her handle the immense workload. “She is a champion of students, for their rights but also their responsibilities,” Golden says. “She’s serving on the board for the right reasons, as a valuable contribution to the university and the students. She’s also one of the most genuinely friendly persons you’ll meet.”

White, a Whittle scholar and a peer mentor of UT’s Honors Program, was attracted to the Department of Food Science and Technology by the personal atmosphere and individual attention she and other students receive and by the chance to carve a distinctive niche in pre-pharmacy, one of several professional concentrations the department offers. “Pharmacy today is so diverse compared to traditional community pharmacy. There are possibilities on the national and even international level.”

To maintain her heavy schedule, which includes a full load of upper division classes, White relies on her faith, family, and friends. “I try to maintain a balance between class and work and time to enjoy being a college student,” she says. “It has been an honor to serve at such a pivotal time in Tennessee and to work with people from the students all the way up to the governor.”
DUO TELLS THE STORIES OF TENNESSEE AGRICULTURE

Many Tennesseans see agriculture in terms of cartons and cellophane packages at their grocery. An Extension agent in Rutherford County once fielded calls from motorists asking about the white stuff growing in a field by I-840. The “stuff” was cotton.

You can watch the team’s video segments online at www.agriculture.utk.edu/news/VideoReleases/.

Informing citizens of issues facing the state’s producers, as well as the importance and scope of the Tennessee Agricultural Extension Service’s programs, is a full-time job. Chuck Denney and Doug Edlund know it well. The two are the broadcast news and information team for UT’s Institute of Agriculture.

The two produce and distribute video news releases and nine times a year they distribute a television show called UT Connections. Their work airs in Nashville, Memphis, Knoxville, Jackson, and Johnson City and is used by nationally syndicated Ag Day and US Farm Report and by the RFD TV satellite network. Including radio, their broadcasts share stories of Tennessee agriculture and Extension's family and youth programs with millions of viewers and listeners each month.

On a typical trip in October, they left Knoxville as the morning fog was rising. Destination: Tipton County. Assignment: shoot a story about a financial management program, a story about harvesting sweet potatoes, and another about a successful 4-H photography program. Thirteen hours and 415 miles later, the exhausted team checked into a motel in Jackson, mission accomplished. Day two found them in Cheatham County taping a Master Gardener project that is transforming an abandoned stretch of railroad and a story for Christmas about 4-H’ers making stockings for underprivileged children. After 11 hours and 360 more miles, a month’s worth of editing work was gathered.

“Our stories aim to show the importance of agriculture to everyone in the state—to urban, suburban, and rural audiences,” Denney says. “And we also do a lot of ‘didja know’ features such as ‘I bet you didn’t know that Extension does premarital counseling, daycare training, and so many other programs that help families and communities.’

Team takes complex issues and puts them into terms everyone can understand.
High spirits, smiles, and enthusiasm are swirling around the University of Tennessee’s sparkling new Plant Biotechnology Building. The futuristic facility opened on the agricultural campus in October with a lively dedication ceremony and a world-class seminar on woody plant biotechnology.

“This new facility will have a tremendous impact on the ability of our scientists to compete worldwide for funding as well as for the best students and scholars to work in plant biotechnology in Tennessee.’
—Dr. Jack H. Britt, UT Vice President for Agriculture

The building is now at the heart of the university’s efforts in a complex, rapidly advancing area of scientific inquiry. “The building gives us the tools and the facilities to move forward in our research,” says molecular epidemiologist Dr. Kurt Lamour. “We have everything we need.”

Activity in the facility is expected to help generate new products and industries for Tennessee and the region, and to expand markets and demand for Tennessee’s agricultural products and enterprises. As the only facility of its kind in Tennessee, the building is also a tremendous
resource for UT students. More than 500 students are in majors among the departments that are the primary users of the building. The facility’s state-of-the-art teaching laboratories feature the latest developments in instructional technology, including Internet access from individual seats in a tiered lecture hall.

Among the research tools in the 130,000-square-foot facility are a phytotron that scientists use to control plant growth; a core genomics hub; a biosecurity lab where scientists can work on emerging plant diseases; a geographic information system lab with the latest software for precision agriculture; and many other features that make it Tennessee’s finest facility for applying biotechnology to agriculture.

The Plant Biotechnology Building is the crown jewel of a $38 million, three-building complex established on the agricultural campus to advance agricultural and natural resource industries in Tennessee and the region. With the Joseph E. Johnson Animal Research and Teaching Unit and the Tennessee Forest Products Laboratory, the complex provides UT with world-class plant and animal research facilities.

**NEW COLLABORATIVE RESEARCH**

UT’s Plant Biotechnology Building holds a dual purpose: to support advanced research and to foster collaboration and sharing. The goal is a seamless, continuous chain of research that begins with discovery and continues through to real-world applications. In this facility, collaborations will occur among molecular geneticists, chemists, microbiologists, plant pathologists and virologists, soil chemists and others in allied areas of the agricultural and biological sciences.

---

**From Tennessee Biotechnology Association**

**CHAIRMAN DENNIS GRIMAUD**

The Plant Biotechnology Building places UT at the forefront of an industry in the U.S. that has more than tripled in size in the past decade.

The commitment to a first-class plant biotechnology facility represents the type of progressive thinking necessary to make sure that UT continues to play an important role in assisting agricultural enterprises in our state and ultimately growing industries that positively shape our economy.

The research and discovery that will take place in the new facility, though, will have a far greater reach than the borders of Tennessee alone. The facility becomes another asset in the growing Tennessee biotech advantage that will attract top-notch students, researchers, and the valuable funding needed to carry on cutting-edge research—the research and discovery that will impact food safety, benefit consumers, and influence health worldwide.

---

**UT BIOTECH RESEARCH AT A GLANCE**

From improved plant varieties to combating livestock diseases, UT biotechnology research has many goals. Researchers include:

**Drs. Bob Trigiano and Mark Windham**, left, lead a USDA ARS grant supporting tissue culture, genetic engineering, and genomic characterization of six different plants. Their work is helping researchers identify and move genes to improve qualities of prized and profitable ornamentals.

**Dr. John Sorochan** is testing new turfgrass varieties for improved environmental stress characteristics and is working collaboratively to develop improved turfgrass species, including varieties better suited for Tennessee and the entire transition zone.

**Grass crop engineering specialist Dr. Janice Zale** develops and is using novel engineering methods to genetically improve cereals, forages, and turfgrass.

**Soil microbiologist Dr. Mark Radosевич** explores how natural microbial communities can be used to help break down pollutants present in soils and how microbial enzymes can be used in the biosynthesis of disinfectants.
BOOMING BIOTECHNOLOGY

Agricultural biotechnology is controversial. Minefields are deadly. What do these seemingly unrelated topics have in common? The answer is coming together in UT’s new Plant Biotechnology Building, in the labs and third-floor corner office of Dr. Neal Stewart, Racheff Chair of Excellence in Plant Molecular Genetics.

Stewart is a researcher who looks toward the possibilities that genetically modified plants represent. Along with research he conducts on biosafety in genetically modified plants—assessing the consequences of gene flow between genetically modified canola and its wild relatives and studying the indirect effects that insecticidal genes introduced into canola may have on predators of target species—he envisions plant uses that would have been inconceivable without modern biotechnology. Incorporating green fluorescent protein (GFP) into a plant’s genome could enable it to detect and even remove TNT from minefields. Similar genetic manipulation could increase aluminum and drought tolerance in soybeans and other crops.

“I want to teach what genetic engineering is and what it isn’t,” Stewart said. He points out that doomsday prophecies forecast for genetically modified crops have yet to come to pass. “Over 38 trillion genetically modified plants have been grown in the U.S. since 1994. Where’s the disaster?”

GENETIC MODIFICATION HOLDS THE ANSWERS TO HELP PEOPLE, SERVE HUMANITARIAN PURPOSES, AND PROVIDE HUNGER RELIEF.

Stewart’s research style in using molecular genetics to solve real world problems marries the many disciplines of biology he has studied over the course of his career, spanning plant physiology, ecology, and horticulture.

He remembers being fascinated with the plant world even as a teenager, especially when a friend gave him a Venus flytrap. His early interest in the anomalous nature of a carnivorous plant foreshadowed his vision of equipping plants through genetic modification to do things plants of the past could never have done.

“What can we do with genetic engineering to help people, to serve humanitarian purposes, to provide hunger relief?” Stewart asks. Genetic modification, he believes, guided by both innovation and reason, will ripen to yield answers to those questions.

GENETIC MODIFICATION HOLDS THE ANSWERS TO HELP PEOPLE, SERVE HUMANITARIAN PURPOSES, AND PROVIDE HUNGER RELIEF.

Stewart navigates controversial minefields

by Mary Tebo

Dr. C.A. Speer, Thompson Distinguished Professor of Cellular and Molecular Immunology, leads a team that is using techniques in molecular biology to develop a diagnostic test and vaccine against Johne’s disease.

Dr. Ann Draughon, co-director of UT’s Food Safety Center of Excellence, works to develop understanding and tools to control foodborne pathogens on farms and food processing operations.

Dr. Vince Pantalone combines traditional field evaluations with molecular genetic approaches to target improvements in soybean yield, protein and oil (including trans fats), disease resistance, and stress tolerance.

Insect systematist Dr. Kevin Moulton uses DNA to resolve taxonomic and evolutionary questions within insects and related arthropods. His work focuses on discovery and use of genetic markers.

Molecular epidemiologist Dr. Kurt Lamour uses DNA tools to track how plant and human pests are able to survive and spread. He is also part of a network of plant pathologists working to develop new tools for genetic discovery.
FROM FIELD TO FORK

Forty years ago, as a student of animal science at the University of Tennessee, Jim Herbert knew that his career was not likely to revolve around animal husbandry, or as he puts it, “plows and cows.” Instead, his future would lie in improved understanding of the science of agriculture.

At the time, biotechnology was not yet a defined term, says Herbert, president and CEO of Neogen Corporation, which he co-founded in 1982. Growing up on a farm, though, he understood that genetics were the key to future gains in agriculture: using the right seed for crops or the right bull in a herd. “I didn’t know it would unfold into the modern tools of genetics,” he says. Today, however, the company he leads is on the cutting edge of what biotechnology can do for food and agriculture.

Neogen offers a diverse line of animal and food safety products. The company specializes in developing easy-to-use and inexpensive tests for the rapid detection of harmful bacteria, genetic modifications in foods, naturally occurring toxins, and food allergens. It also produces animal safety products, from veterinary instruments and pharmaceuticals to diagnostic tools, including tests for the presence of drugs in performance and food animals.

Neogen’s profits have grown consistently over the past decade thanks to an aggressive strategy to increase sales, introduce new products, expand into international markets, and acquire strategic alliances. In 2003, Forbes Magazine named Neogen (Nasdaq: NEOG) for the third time as one of the best 200 small companies in America.

Now the company is poised to improve the diagnosis and detection of disease-causing organisms in animals. Deeper understanding of genetics has contributed to that progress, Herbert says, adding that it is sparking a revolution in both animal and plant agriculture.

“The human genome project, plant genomics, and proteomics are providing the tools we never had before to tailor make plant products,” Herbert says. He sees the new Plant Biotechnology Building on UT’s agriculture campus as a tremendous tool for students and for the future of agriculture.

“As we begin to look at crops as a renewable resource, it becomes more important to understand plant genetics,” he says, citing the huge potential for producing chemicals from field crops. “Plant biotechnology offers tremendous opportunities outside just plain food production.”
In the two years since the Tennessee Beef Cattle Improvement Initiative was announced, the program has made inroads toward improving producers’ bottom lines. A new Master Beef Producer Program promises even greater advances.

The beef educational program, the most extensive ever presented in Tennessee, will be offered through county offices of the Agricultural Extension Service. In August, Extension specialists and College of Veterinary Medicine faculty who developed the program “trained the trainers.” Seventy-seven Extension agents completed four days of training and will now lead local programs. Hamilton County presented a pilot program this fall.

Dr. Jim Neel, Extension beef specialist, is coordinator of the program. Neel says the curriculum was developed with input from agribusinesses, veterinarians, and Tennessee Cattlemen’s Association representatives. Participants will receive a certificate recognizing their training and a Master Beef Producer cap. They will also earn a sign to display on their farm.

How do you convince producers to participate? That’s the $64,000 (or is that $500 million) question.

Last January the initiative launched a large-scale cattle demonstration to prove the value of improved management. The trial involves 17 herds from 16 counties. Dr. Emmit Rawls, the initiative’s coordinator, says the demonstration is the largest ever in Tennessee, stretching from Hawkins County in the east to Lauderdale County in West Tennessee.

The demonstration is expected to show how quickly superior bulls can enhance a herd’s genetics. Rawls anticipates that the calves with the improved genetics will be superior. “There may be a few surprises,” notes the economist, “but the gain from improved genetics and known health management practices should convince serious producers that these practices are essential to a healthy business.”

For more information, contact your county Extension office or Dr. Emmit Rawls at e.rawls@utk.edu.
NEW WORKING FOREST

Fifty-five percent of Tennessee land is forested and much of that is privately held. Many donors and alumni have struggled with the nostalgic desire to preserve ancestral woodlands versus the expense of upkeep, maintenance, and high estate taxes. Now, the Institute and the Department of Forestry, Wildlife, and Fisheries, in cooperation with the University of Tennessee Foundation, have established a University Working Forest. The new program meets donor wishes to preserve forestland while providing income to advance the mission of the department.

Over the years, the Institute of Agriculture has had requests from potential donors for the University of Tennessee to preserve gifts of forestland.

4-H CAMPAIGN NEARS GOAL, HELP NEEDED

After nearly three years, the “Foundations for the Future: Building Youth Leadership, Citizenship & Character” 4-H Endowment Campaign has nearly reached its $2 million goal. Led by Murray Miles, chair of the endowment campaign steering committee, the fund drive was launched in 2000 to help support various county, district, and state 4-H educational youth development projects, activities, and events.

Thanks to the generous support of hundreds of individuals and organizations, more than $1.85 million has already been given or pledged to the effort. Still the committee needs your help to meet their goal and make the campaign a success. The campaign is slated to end this year, the 50th anniversary of the formation of the Tennessee 4-H Foundation.

According to Buddy Mitchell, UT associate vice president for agricultural development, “4-H makes a dollar go a long way and has a proven record of producing productive, responsible citizens and leaders. An investment in 4-H is an investment in the future of Tennessee. It’s important to help make the endowment a reality for current and future generations of 4-H members.”

Tennessee has one of the largest 4-H programs in the nation with 236,000 youth participants. The endowment campaign is a cooperative effort of the Tennessee 4-H Foundation and the University of Tennessee Institute of Agriculture.

For more information about the campaign or to make a pledge, contact your county Extension office, write to the Tennessee 4-H Foundation at 2621 Morgan Circle, 205 Morgan Hall, Knoxville, Tennessee 37996-4510, or visit the Web at www.utextension.utk.edu/tn4hfoundation. Mark Gateley, 4-H Foundation executive director, can be reached at (865) 974-7436.
Other states have similar programs, but until recently there was no way to preserve a gift of land as a forest. The new University Working Forest provides an excellent gift option to those thinking of making a gift to UT.

Gifts of forestland will be managed under the guidance of a board of advisors for the benefit of the Department of Forestry, Wildlife, and Fisheries. The forestland will be operated as a University Working Forest, used for scientific, instructional and service-oriented programs, and to generate income from the sale of timber and other forest products. The department will use income from the property to advance the management, utilization, and appreciation of natural resources through the university for the citizens of Tennessee and the region.

Forestland donations must have significant and sustainable timber volumes and appropriate access for departmental activities. The property will be held by the university for a period of years as agreed on by the donor and university, but typically not to exceed 30 years or the lifetime of a specified individual.

For more information, contact Dennis Jones at (865) 974-7396 or Rhodes Logan at (865) 974-1928.

The University of Tennessee and friends and family of the late Dr. Don Williams have announced a campaign to raise funds that will create an endowed professorship in horticulture at UT. Co-chairing the fund drive to establish the Donald B. Williams Endowed Professorship are Interim President Joseph E. Johnson and Dick Ott, UT alumnus and vice president of educational programming at Symbiot Business Group.

Williams passed away in 2002 after 38 years at UT. He was the first head of UT’s Department of Ornamental Horticulture and Landscape Design and established the UT Gardens. Teaching, however, was his passion.

“An endowed professorship in Don’s honor will help to ensure that the very best learning opportunities are available for students studying horticulture at UT,” said Dr. Jack Britt, vice president for agriculture.

A 15-member steering committee was formed last summer to lead the campaign.

For information about making a gift, contact Sharon Littlepage, director of external relations, at (865) 974-7439 or slittlep@utk.edu.
AT UT’S TOBACCO EXPERIMENT STATION . . .

World renowned for its research in burley tobacco breeding and production, the University of Tennessee’s Tobacco Experiment Station has been responsible for a number of innovations that have helped to improve the bottom line of state and regional producers.

The Tobacco Station, one of 11 branch stations making up the Tennessee Agricultural Experiment Station, is situated in the Appalachian foothills of Greene County in upper East Tennessee.

Major accomplishments include developing TN-90, the most popular burley variety in the world today; developing and refining now widely used outdoor hydroponic tobacco transplant production systems, as well as refining low-profile, low-cost burley curing systems; and identifying production systems that cut labor costs by a third.

Despite its name, the station is also known for animal research in beef cattle production, and, given its location, it is well suited for animal management research with goats, sheep, and horses, as well. “If you pick one thing landowners in this region have to market,” says Superintendent Dr. Darrell Mundy, “it’s grass”—whether cut for hay, sold as turf, or marketed through grazing animals. Consequently, the station is embarking on a major emphasis on the production and marketing of hay in the diverse market of this multi-state region.

Other areas of research directed toward helping growers diversify their operations include greenhouse tomato and cucumber production and marketing, corn silage variety trials, forestry production, and the disposal and use of waste sawdust on corn and tobacco crops. The station also helps host field days and other events and activities throughout the year. A sampling includes the Tobacco & Specialty Crops Field Day; the Tobacco Display for industry evaluation of tobacco leaf samples grown at research/Extension facilities in Tennessee, Kentucky, North Carolina, and Virginia; Kids’ Day on the Farm; and the Northeast Tennessee Beef Expo.

A community partner works to expand options for region

AT A GLANCE: The station contributes over one million dollars annually to the economic activity of the community and region.

Employees: 12 full-time, three part-time, plus during the summer eight high school and/or college students and six migrant workers

Payroll: Approx. $333,000

Commodity sales: $203,000

Private grant income: $95,000

Expenditures: Approx. $295,000 for seed, fertilizers, plant protection products, feed, equipment, fuel, utilities, supplies, travel, and housing
Diversification is becoming the name of the game in East Tennessee where most of the state's tobacco production has been centered and on land across the state where producers are looking for new crops to add value to their operations.

A $600,000 USDA National Research Initiative grant to the University of Tennessee’s Institute of Agriculture is funding investigations into alternative, sustainable production systems for farms in Tennessee, North Carolina, and Kentucky. Some of the crops beginning to emerge from this research that hold promise for Tennessee include blueberries, hydroponic tomatoes and cucumbers, cantaloupes, and pumpkins.

In particular, UT researchers have refined production techniques to obtain maximum yields with a high quality and better taste. Having studied a number of different varieties and treatments, “we’re now in a position to recommend to potential producers the variety they need to be growing and the treatment they should use,” says Jim Wills, a professor of biosystems engineering and lead investigator of the multi-state research project. An added benefit of the work is research into biological controls that are lessening the need for conventional chemical controls. The result could help area growers move into the organic market where crops sell for a higher price.

Plans are under way for a short course this coming spring “where we’ll invite people into the greenhouses and show them step by step how to grow and produce these crops, holding costs to a minimum while maintaining high yields and product quality,” Wills says.

Future research will look at other high yielding, potentially profitable crops such as strawberries, which currently have a high retail value.

Contact: Professor Jim Wills, (865) 974-7237, wills@tennessee.edu
There was a time when all that farmers needed to keep their farms operating was good weather, no pests, and a plentiful harvest. Today they often need more than traditional row crops and livestock to stay financially afloat. Agritourism is filling that gap for many farmers with the help of tourism and agriculture organizations.

Valley Home Farm in Wartrace is one such family farm. The Potts family began farming in the 1970s with soybeans, corn, hogs, cattle, and hay. In the intervening years, they’ve added a broiler chicken operation and pick-your-own strawberries.

“We began the specialty crops/agritourism move in the fall of 1999,” says Nancy Edwards, a Potts family member. “Our first crop of plasticulture strawberries was in 2000. We are in our third season of specialty crops with fall pumpkins, mums, and agritourism.”

Some of the activities bringing tourists and locals to the farm are a corn maze, hayrides, Big Dad-y’s Country Café operated in the fall, and a Fall Market where you can purchase jams and relishes (also available through mail order), and items for your fall yard decorating.

“I see agritourism as the answer to getting people to your farm to buy the crops you produce at a price that allows you to make a living from the farm,” Edwards says. “I don’t believe it’s everyone’s answer, but it appears to be ours.”

Another successful agritourism venture is the Tennessee Overhill Heritage Association’s Agriculture Trail, detailed in a popular brochure that includes information and directions to 17 farms or agriculture-related attractions in McMinn, Monroe, and Polk counties. The sites range from a daylily farm and a tobacco auction house to a cheese factory and a native plant garden.

“Several businesses have told me that they have people coming to their place of business carrying the brochure,” says Linda Caldwell, executive director of the Tennessee Overhill.

With the increasing appeal and importance of agritourism, officials are looking for ways to help the state’s farmers explore these options. A collaborative effort between the Tennessee departments of Agriculture, Tourist Development, and Economic and Community Development, the Tennessee Farm Bureau Federation, and the Center for Profitable Agriculture is under way to compile a comprehensive list of the state’s agritourism ventures.

Megan Bruch, an Extension specialist at the CPA, says about 600 ventures have been identified so far. When complete, the inventory will be used for promotional and educational purposes.

For more information:

Valley Home Farm, (931) 389-6470, www.cafes.net/valleyhome/
Tennessee Overhill, (423) 263-7232, www.tennesseeoverhill.com
Center for Profitable Agriculture, (931) 486-0141, http://cpa.utk.edu
Pick Tennessee Products, www.picktnproducts.org