Extension agents make every drop count

University of Georgia researchers developed new irrigation technology called variable rate irrigation for center pivot irrigation systems. With VRI, individual nozzles turn on when they pass over drier areas and turn off over wet areas. This reduces runoff, applies less water and produces higher yields. Cost share dollars are now available for growers for VRI technology.

Through conservation tillage and agricultural water management education programs, Cooperative Extension teaches producers how to use conservation tillage to save water when they irrigate crops. Specialists also offer publications and trainings on how to improve management of center pivot irrigation systems.

Producers and consumers use the Georgia Automated Environmental Network (www.georgiaweather.net) to obtain current and historical weather information along with calculators for better water management.

The Southeast Climate Consortium provides seasonal climate forecasts as decision-support tools for agriculture, forestry and water resource management in the Southeast. The consortium’s hub in Griffin makes information available for Georgia users through Cooperative Extension.

Population growth will place strain on water resources

Georgia’s population is expected to double in the next 25 years. Rapid growth is placing an ever-increasing strain on water resources. In fact, the demand for water is expected to outpace the supply. Adopting new technologies for using water efficiently and educating our state’s citizens on wise water use are critical to having enough water in the future.

Water use and conservation

Wise use of a most precious resource
Audits and conservation tillage reduce water use

An audit of landscape irrigation systems in Douglas, Ga., determined that a 20 percent reduction in water use could be achieved through improvements to the existing irrigation systems. Through conservation tillage programs, Extension specialists have estimated that at current rates of adoption, water savings on cotton acres could be as much as 4.4 billion gallons annually.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Some wells are entryways for groundwater contaminants

According to the 1990 census, 476,726 private water wells serve 20 percent of Georgia’s households. That number was estimated to be about 557,000 by the end of 2006. Just one of these wells, improperly maintained, constructed or abandoned can become the entryway for groundwater contaminants that can affect an entire community.

Many uninformed well owners think a well will last forever. The truth is that the lifetime for steel-cased wells in most Georgia counties rarely exceeds 50 years. Private well owners need knowledge on how to maintain and protect their water supplies to ultimately protect our shared groundwater resources. With this knowledge they then need to take responsibility for making sure their water is safe to use, steps to correct existing problems and action to maintain a safe water supply.

The first step is water testing. Presently, only about one percent of private wells in Georgia are tested annually. Our rights to own and use private wells could be jeopardized unless we can show that private water well owners successfully maintain their water supply and protect our shared groundwater resources.

County agents educate well owners

County agents have eight tools specifically created to educate private well owners. These are an introductory DVD production outlining basic responsibilities for a well owner; a three-panel display graphically conveying that well owners must test and maintain their wells; a Farm Bureau news video accentuating the need for proper well construction; a team of agents who can run video cameras down inside a well and under water to find...
Down-well camera exposes aquifer contamination

Working with Georgia Environmental Facilities Authority and Tetra Tech, Inc., the UGA Down-Well Camera Team documented casing leaks in a household well near Savannah, Ga., that allowed gasoline from an underground storage tank into the Floridian Aquifer. This aquifer is source of drinking water for essentially everyone in that area — municipalities and private well owners alike.

Georgia is the leader of an entire southern region team including Alabama, Kentucky, Louisiana, Oklahoma, Tennessee and Texas who are using these well cameras to inspect water wells and educate those responsible for keeping groundwater clean.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Extension agents are experts on water management. UGA Cooperative Extension is involved in many activities designed to reduce runoff, prevent erosion, minimize sedimentation and increase storm water knowledge. Programs available through county Extension offices, such as water wise landscaping, proper application of pesticides and fertilizers, stream monitoring, rain garden design and low impact development educate citizens and help counties meet requirements for public education and involvement. Trainings on artificial wetlands, pond management, vegetation control and storm pond management can help counties meet post-construction storm water requirements.

Who knows plants better than the UGA College of Agriculture and Environmental Sciences and Cooperative Extension? Let our experts provide the latest research-based information on vegetation management, erosion and sediment control and storm water management. Extension can help prevent soil loss, minimize water impairment and improve compliance with federal, state and local regulations in your county.
Various water educational programs are successful

UGA Extension offered more than 50 erosion and sediment classes for individuals involved with land-disturbing activities. As a result over 2,500 contractors, developers, builders and landscapers learned how to comply with local, state and federal erosion and sediment laws and techniques for using structural and vegetative practices to protect soil and water resources.

Extension’s Watershed, 4-H and Master Gardener programs in Clarke and Barrow counties built more than 300 rain barrels. This community project is improving water use by educating citizens about storm water and water conservation while helping them convert 700,000 gallons of rooftop runoff each year into water for garden irrigation.

Metro Atlanta Extension agents work with the Atlanta Regional Commission to provide programs on rain gardens and barrels, lawn care, integrated pest management and water-wise landscapes. They teach citizens about water conservation, protection and meeting federal NPDES storm water requirements.

As part of Water Talkers, a 4-H educational program in Lamar County, 4-H’ers participated in a water education series and helped restore local wetlands. 4-H’ers and adults used the knowledge gained to remove trash, brush and debris and stabilize the wetland area with vegetation. The USDA Natural Resources Conservation Service estimates that 15 tons of soil erosion was offset by the collaborative work on these wetlands.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Wastewater management

A lesson in conservation of water

Sludge, biosolids and laws, regulations

It’s a fact of life. As Georgia’s population grows, it generates more waste. That waste does not disappear when the toilet is flushed. It has to be treated and disposed. Wastewater treatment can put tremendous pressure on county and municipal governments, whether it is through increasing capacity at a wastewater treatment facility, disposing of the sludge or biosolids generated at that facility or dealing with package plants and septic systems.

Many laws and regulations deal with aspects of wastewater management. Most are part of the Georgia Water Quality Control Act, which is largely administered by the Georgia Department of Natural Resources Environmental Protection Division. EPD requires permits for wastewater discharge into surface waters, land wastewater application through spray irrigation, overland flow systems or constructed wetland systems, land application of biosolids and large onsite wastewater treatment systems. The Georgia Department of Human Resources Division of Public Health is responsible for permitting most onsite wastewater treatment systems.

Extension specialists explain water regulations

UGA Cooperative Extension has both county agents and state specialists with in-depth experience and knowledge in these areas. Many Extension specialists are called on to provide training for EPD personnel. The Agricultural Pollution Prevention Web site, www.agp2.org, has a section on land application with printed material and PowerPoint presentations on biosolids management and the advantages and disadvantages of centralized and decentralized wastewater management systems. Extension specialists
In 1997, the City of Douglas needed a different approach to manage both their sludge and yard waste. The county agent contacted specialists and scientists from the CAES department of biological and agricultural engineering to suggest improvements to the existing land application system. During the visit, engineers noticed the city had also accumulated excess yard wastes very close to the wastewater treatment facility and suggested a composting operation. After working with the city to obtain funding through the Georgia Environmental Facilities Authority, both wastes were used to create a compost product that has been in high demand. Yard waste provided the base material and sludge provided the nitrogen to the mix that allows a quicker breakdown of the city’s yard waste. Homeowners, landcapers, farmers and the city all use the compost in flowerbeds and gardens. In the spring and summer, pickups will be lined up waiting for their share. This successful project used Extension and university expertise to turn a problem into a model program.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Total maximum daily loads

Managing watersheds to reduce pollution and restore water quality

Keeping clean water and navigating laws and regulations

Clean water has many benefits, including public health, real estate, tourism and recreational value. Storm water from urban areas, runoff from rural and agricultural areas and municipal/industrial discharges pollute water bodies. Pollution identification, assessment and management may be required to maintain or improve water quality.

In order to monitor water quality and comply with the Clean Water Act, the Georgia Environmental Protection Division (EPD) assesses state waters and classifies water bodies as supporting, partially supporting or not supporting their designated use such as source water for drinking, swimming, or fishing. Impaired waters require a total maximum daily load (TMDL), the maximum amount of a pollutant that a water body can receive or assimilate and still meet water quality standards. TMDL implementation plans recommend management practices that can be used to help reduce pollutant loads to a point that the water body can meet standards.

County agents help with water quality issues

Improving surface water quality requires assessment, education and management. UGA Cooperative Extension can help counties verify problems, monitor and assess water bodies, identify pollution sources and develop management solutions. In addition, Extension has trained agents who can help facilitate public education and involvement. Your local county Extension office is directly linked to the technical expertise of UGA specialists and the EPD-approved UGA Agricultural and Environmental Services Laboratories. If a county government needs to improve water quality, Extension can help. Once improvements are made, Extension can help your county remove a water body from the TMDL list.
Oranges help track water flow

A group of Glynn County high school 4-H’ers, calling themselves the Sea Monkeys, was concerned about high bacteria in the water along the beaches of St. Simons Island. Runoff into tidal streams was blamed for this problem. The students released 280 oranges to track the flow from the suspected tidal streams. Based on the group’s findings, environmental scientists found bacteria sources. The Sea Monkeys discovered an additional source of bacteria — dog droppings on the beaches. They mounted an intensive public education campaign to turn that brown tide blue.

In an ongoing project, UGA Extension is leading a Morgan County group — consisting of county commissioners, Madison city officials, high school representatives and Georgia Forestry Commission employees — as they educate property owners in the Big Sandy Creek Watershed. The project focuses on increasing interest in water quality and promoting best management practices for reducing pollution. Education alone could solve this problem and eliminate the need for expensive alternatives. To date, the city of Madison agreed to analyze bacteria samples and a sampling/quality assurance plan has been submitted to EPD for review.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Cooperative Extension has both county agents and state specialists with in-depth experience and knowledge in these areas. Your agent can provide you with detailed publications describing Georgia Department of Natural Resources Environmental Protection Division rules and assist you or the county environmental official or consultant with the public education and involvement components of these requirements. In addition, specialists and other UGA College of Agricultural and Environmental Sciences faculty can assist in implementation, provide critical review or assistance and help your community develop plans that are technically and fiscally sound and protect water resources. Often, implementing these plans will require identification of agricultural sources and ordinance development to address these sources. Your Extension agent has access to faculty with the legal and policy background to assist you in these efforts.
Watershed assessment plans protect water resources

The Watershed Assessment Group at UGA has been conducting evaluations throughout Georgia for eight years. Watershed assessments consist of three components: watershed monitoring — data collection, water quality and biological quality assessments; watershed assessment — analyzing the results, predicting outcomes of growth on water and biological quality and suggesting methods of improving water and biological quality; and watershed protection — a document that outlines a city or county’s water resources plans, long term goals and improvement benchmarks.

An example of a successful watershed assessment project is Georgetown, Ga. The City of Georgetown had no system for wastewater conveyance or treatment, other than septic tank systems, until October of 2006. Their location on the W.F. George Reservoir, which is popular with boaters and fishermen, prompted the city to approve a wastewater transport and treatment system so they could compete with Eufaula, Ala., located less than a mile away, for tourist revenue. A watershed assessment helped Georgetown understand their current watershed and water quality conditions and will help them grow while protecting the quality of their water resources.

Throughout Georgia, source water protection plans have been developed without adequate public involvement and education, resulting in unrealistic plans. For example, one community developed a plan that included an ordinance prohibiting the use of pesticides, fertilizer, or grazing of animals within 100 feet of all streams within five miles upstream of the drinking water intake. Once the community heard of this, there was considerable outrage. The local Extension agent worked with the commissioniners and UGA specialists to craft a new ordinance that protected water quality without impacting the livelihood of the upstream farmers.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Growing obesity, increasing chronic diseases

Obesity in Georgia is growing at an alarming rate. The percentage of overweight adults in the state rose from 37 percent in 1984 to 61 percent in 2003 — a 3 percent annual increase. Obesity and being overweight contribute to the occurrence of chronic diseases including diabetes, high blood pressure, cancer, heart disease, arthritis and gall bladder disease.

Inactivity is also a major contributor to chronic diseases. The Georgia Department of Human Resources estimates that three-fourths of Georgians are inactive. The problem isn’t restricted to adults. University of Georgia research found that 20 percent of Georgia’s children are overweight compared to a national average of 15 percent. Overweight children and children at risk for becoming overweight most often live in rural areas.

Extension agents conduct nutrition and fitness programs

Extension agents conduct nutrition and fitness programs to reduce the incidence of chronic disease in those at risk and to control chronic disease in those already diagnosed. The Walk-a-Weigh program, for example, encourages physical activity and promotes dietary changes to control weight in adults. The Power of Choice, Win Kids and other programs promote positive lifestyle changes aimed to prevent children from becoming overweight. Georgia 4-H offers a Nutrition and Healthy Lifestyles program that focuses on establishing early healthy eating habits to try to prevent children from becoming overweight later in life. Right Bite Diabetes Cooking School and Cancer Cooking School help those diagnosed with chronic diseases learn to prepare healthy food.
Workplace wellness programs reduce healthcare costs

Workplace wellness programs can help reduce healthcare costs by 20 to 25 percent and can cut sick leave by up to 32 percent. They also help increase employee productivity. Several UGA Family and Consumer Sciences Extension agents work with county government employee wellness programs:

- The Sumter County Extension agent serves on the county wellness committee and produces a county employee newsletter on health, nutrition and fitness.
- The Athens-Clarke County Extension agent operates comprehensive education programs that award participants “wellness points” that can be exchanged for prizes. At a certain wellness point level, the county employee gets a discount on their county health insurance premium.
- The Columbia County Extension agent delivers a health and fitness program for county workers which has helped employees change habits and improve their overall health.
- In Cobb County, the Extension agent worked with the county government to install a new fitness center in the main county government building. Cobb County is also encouraging employees to take the stairs as a form of exercise and made improvements in the physical appearance of stairwells.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Food safety
Reducing the risk of foodborne illness

Foodborne illness costs lives and dollars

About 76 million Americans become ill from foodborne illnesses each year, 325,000 are hospitalized, and 5,000 die. The Economic Research Service estimates five specific types of foodborne illnesses cost $6.9 billion annually. The CDC says Georgia had the highest incidence of salmonellosis of all 10 sites monitored by their Food Net system. Infants, young children, the elderly and those with weakened immune systems are most at risk of serious complications, which include kidney failure, seizures, strokes, heart complications and death.

Most foodborne illness can be prevented by careful food preparation. Annual food safety training for foodservice workers is required by many Georgia employers and health districts. Foodservice employee turnover rates are very high, creating an on-going need for training programs. An in-home study of consumer food handling practices found that only 52 percent of the food preparers washed their hands prior to food preparation; only 3 percent used a thermometer to determine doneness of a hamburger; and 82 percent of the time they undercooked chicken.

Extension agents provide consistent, accessible food safety and sanitation education for foodservice employees and consumers of all ages. Training programs include safe food handling, implementation of Hazard Analysis Critical Control Point systems and ServSafe® certification. Agents and specialists provide training that fulfills state requirements for employees in the school nutrition program, childcare facilities and other institutional and organizational settings.
Family and Consumer Sciences Extension agents in southwest Georgia conducted HACCP workshops for about 1,200 school foodservice personnel during the summer of 2006. Over 90 percent of the foodservice employees said they would improve how they handle food at their schools as a result of the training.

Almost 700 foodservice managers were certified in the ServSafe® food safety education program in 2006. Evaluations showed participants significantly improved their knowledge of safe food handling practices and intended to implement recommended food handling practices in their food establishments. Foodservice managers indicated that they would train and monitor their employees’ food safety habits.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Extension agents promote personal financial management

Financial planning needs vary with age, so Extension agents offer a variety of educational programs designed to maximize limited financial resources, help set financial goals and promote financial responsibility. UGA Cooperative Extension is an approved provider of personal financial management educational courses mandated by the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 and an approved Housing and Urban Development housing counseling agency.

Credit abuse and overspending

The increasingly sophisticated financial marketplace is a risky place. Limited financial management skills make some Georgians vulnerable to unfair and fraudulent business practices. Big debt and small savings contribute to financial insecurity for many households.

Bad financial habits don’t help. Georgia’s personal savings ranks 35th in the nation, well below the national average. Atlanta is 123rd among metro areas for savings, and Georgia is 10th in the nation for most personal bankruptcy filings. Between December 2004 and December 2005, an alarming one of every 46 Georgia households filed for bankruptcy.

Research shows improving financial understanding for youth and young adults reduces credit abuse and overspending later in life. Targeted education programs can help consumers of all ages reduce debt, maximize tax credits, increase savings, control spending, protect from consumer fraud, find special mortgage programs for home buying and prevent foreclosure.

Wellness

Economic well-being

Helping Georgians meet financial goals
More Georgians learn about money management

Georgia 4-H made financial awareness one of its statewide issues for 2006. Local and state 4-H programs helped their students learn more about basic money management. More than 100 youth attended the Youth Financial Literacy Conference in southwest Georgia where they learned about money management and the importance of saving.

In Atlanta, Extension partnered with the Fulton County Drug Court to provide a six-week financial course for non-violent, drug-dependent defendants as part of their intensive treatment program. Participants made significant changes like opening a savings account, creating a home budget box and using public transportation to save money. More than 90 percent of participants now aim to get out of debt, organize financial records and write a spending plan.

Participants who completed the First Time Home Buyer Education programs in Gilmer and Colquitt counties now know more about buying a home. The program helped them learn the importance of timely payments, careful household budgeting, mortgage shopping and family needs assessment.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Effective parenting and childcare

Educating on the high cost of low-quality childcare

Child abuse and neglect

Every 30 minutes in our state, a child is the victim of confirmed abuse or neglect.

The rate of child abuse and neglect in Georgia has risen dramatically from 11.3 per 1,000 in 1997 to 23.1 per 1,000 in 2004. This growing problem costs every Georgia family an average of $1,500.

Child abuse and neglect are strongly related to family poverty, especially in combination with depression, social isolation, and substance abuse. Poor parenting skills place children at risk for abuse and neglect, and teen parents are twice as likely as older parents to abuse their children.

Affordable, accessible, high-quality childcare is not available to many Georgians, in part due to the fact that childcare is the third highest household expense for most parents of young children. That often leads parents to seek the least expensive source of care, devoid of the benefits of quality early care and education.

Extension agents provide parenting training

UGA Cooperative Extension agents conduct targeted parenting education programs for teen parents, parents identified as at-risk for abuse and neglect and grandparents raising grandchildren. They help parents identify and select high-quality childcare and collaborate with employers and community leaders to ensure consistent, high-quality childcare is available as a vital part of community infrastructure. Extension agents provide state-accepted training hours for childcare providers on various childhood development topics and facilitate poverty simulations to help communities better serve the needs of low-income families.
Targeted programs are successful

UGA Cooperative Extension is one of the largest sources of the required community-based education for childcare providers in many Georgia counties. Extension typically provides this training at approximately one-fourth of the total cost of consultants or other agencies. Extension agents trained almost 10,000 childcare providers in 2006 in best practices for improving the quality of childcare they provide.

Targeted parenting education efforts included a demonstration project funded by the Georgia Department of Human Resources for families considered to be at-risk for child abuse and neglect in five southwest Georgia counties. This project provided educational support to families diverted from open-case status in child protective services.

Another targeted program in Candler County focused on educational and enrichment opportunities to help increase academic success and leadership development while supporting parents, teachers and community leaders in creating a safe, healthy and nurturing environment for low income pre-adolescent males. In Colquitt County, the Parent School Partnership Program, a 10-lesson series that focused on establishing a strong relationship between parents and schools, graduated 102 migrant and/or low-income families.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.
Wellness

Injury prevention

Protecting children and teens from injuries

Car crashes are the number one killer for young children

The leading killer of Georgia’s children is trauma from unintentional injuries. The leading culprit is car crashes. In 2004, 30 children under age five were killed in motor vehicle crashes in Georgia.

State law requires that children be secured in child safety seats, but too many Georgia children still travel unprotected. According to NHTSA, nine out of 10 children who ride in a child safety seat do so in one that is installed incorrectly.

Research shows that parents who put their children in safety seats are also more likely to buckle up themselves. And children who ride in safety seats are more likely to continue buckling up as they grow older.

As these older children approach driving age, Georgia law now requires that beginning drivers complete 40 hours of supervised driving practice before applying for a driver’s license. Unfortunately, many parents fail to provide proper supervision, an issue that can affect everyone on our roads.

Extension agents teach others about child safety seats

UGA Extension agents teach parents and caregivers to properly select and use child safety seats. They also teach public safety officers to recognize proper use and to correct misuse. Extension also provides the Georgia Teens Ride with P.R.I.D.E. safe driving education program for teen drivers and their parents.
Extention trained almost 200 child passenger safety technicians in 2006 to recognize potential problems with child safety seat use. In community seat checks, over 97 percent of the child safety seats checked were being used incorrectly. Instructors gave proper directions to the parents and caregivers. Child safety seat use in Georgia rose from 20 percent in 1983 to 93 percent in 2004. This improvement saved the lives of an estimated 125 Georgia children and reduced injuries for 10,000 more.

Over 2,300 parents and teens participated in the Georgia Teens Ride with P.R.I.D.E. safe driving education program. Within one year of attending the class, 89 percent of the parents responding had provided the required 40 hours of supervised driving to their teens.

For more information:
Contact the Georgia Traffic Injury Prevention Institute at 1-800-342-9819 or www.ridesafegeorgia.org or your local Cooperative Extension office at 1-800-ASK-UGA1.
Healthy indoor air

Reducing environmental contaminants at home

Indoor air pollution may lead to chronic health problems

Many Georgians are exposed to health hazards in their offices, schools and environment, but it is often in our houses that the most problems exist. Scientific evidence shows that the air we breathe at home can be more polluted with toxins than outdoor air. Considering we often spend about 90 percent of our time indoors, particularly older adults and children, the exposure can be extreme.

Residual toxic chemicals and gases, such as lead, radon and asbestos, can lead to lung cancer, asthma and other chronic health problems. The most concerning contaminants cause polluted drinking water and poor air quality.

Extension agents teach classes on indoor air quality

Extension programs aim to increase awareness of the importance of pollutant identification devices, source control practices and mitigation measures. Agents teach classes on indoor air quality; distribute radon test kits; provide educational information on lead-based paint for contractors, realtors and other housing professionals; and educate childcare providers on managing pests safely to insure a healthy indoor environment for young children.
Georgians reduce their risk of radon exposure

Georgians who participated in the radon education programs in 2006 improved their knowledge about radon contamination. Almost 1,500 participants tested their homes for radon; 194 of those found elevated radon levels. Extension agents and specialists taught these families about health risks associated with radon gas. More than half took steps to reduce their exposure at home.

The EPA estimates 21,000 people in the U.S. die from radon-related lung cancer each year. By preventing radon-induced lung cancer for just one person, this program potentially saves $5.8 million in healthcare costs.

For more information:
Contact your local UGA Cooperative Extension office at 1-800-ASK-UGA1 or on the Web at www.ugaextension.com.