

DEPARTMENT

of Plant and Soil Sciences:



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Research Touching All Mississippians

As one of Mississippi State University's largest departments, Plant and Soil Sciences is home to research projects ranging from work with turf grass for the home lawn to studies of new varieties of every row crop grown in the state.

During 2004, researchers in the department released Highlander, a new variety of eastern gamagrass. A native of the Southeast, eastern gamagrass is a warm-season and conservation species, and the Highlander variety has improved seed germination and superior yield and persistence compared with currently available varieties.

In addition to work with development of new varieties, Plant and Soil Sciences turf researchers are working on projects dealing with the environmental impacts of golf courses and res-

idential lawns. An important goal of ongoing research is the determination of rates of off-site movement of pesticides and nutrients once they are applied to turf on golf course fairways or residential lawns. In fact, Mississippi State is part of a small group of universities working to develop valid research protocols upon which such studies will be based. The expected long-term benefit of this work will be "best management practices" that turf managers can use to minimize environmental impacts of agrochemical runoff.

MAFES weed scientists are working with the GeoResources Institute to evaluate applications of remote-sensing technologies to control weeds in soybeans, corn, cotton and other row crops, with the goal of adapting the technology to provide significant savings for producers.

U.S. Department of Labor funding is allowing MAFES horticulturists to study various aspects of mechanization for greenhouses. A project that began in 2004 is examining the use of radio frequency identification devices for inventory control and management of plants in commercial nurseries.

Crop modeling research with cotton is under way by MAFES scientists in the department. The study of how solar radiation levels, temperature, carbon dioxide levels, moisture supply and soil nutrient levels combine to influence how cotton plants grow and develop has contributed to crop models designed to make prediction of potential cotton yield.

Another current project is a cooperative effort with the Civil Engineering Department to develop a comprehensive water quality model for the St. Louis Bay estuary and watershed in south Mississippi. Supported by the Mississippi Department of Environmental Quality, the purpose of the study is to integrate specific information on soil parameters, land use changes over time and other information to improve the understanding of how best to protect the region's water quality.

Two projects just recently funded in the department include an effort to map the genome of pine trees, which is receiving a \$1.6 million National Science Foundation grant, and rice water management work funded in part by the Mississippi Rice Promotion Board.



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For more about research in the Department of Plant and Soil Sciences, visit www.msstate.edu/dept/pss/public_html/pspage.html.