from the DIRECTOR

Agriculture has played a large role in our state's economy and has provided our farmers a good livelihood. Small wonder then that Mississippi farmers were using farming practices designed to leave minimal impact on the environment long before the term "sustainable agriculture" was coined.

Being good stewards of our environment has never been more critical. A recent study conducted by the United Nations Population Fund has shown that humans as a race are fast using up the Earth's natural resources. This study suggests our world will be unable to support us in future years unless a balance between human and environmental needs is reached.

According to the report, *The State of World Population 2001,* "to accommodate the nearly 8 billion people expected on Earth by 2025 and improve their diets, the world will have to double food production and improve distribution. Most production will have to come from higher yields rather than new cultivation."

This report reaffirms the basic philosophy that has guided MAFES research programs: to conduct sound science that enhances food production efficiency and provides good stewardship to the natural resources entrusted to us. As part of our research efforts, we have turned to agricultural biotechnology to reduce the use of pesticides and improve the health, yield and quality of our crops and livestock.

At the same time, we at MAFES recognize that putting more pressure on our land to produce higher yields may disturb an already fragile ecological balance. Consequently, Experiment Station scientists are also working with Mississippi producers to find the next generation of best management practices for our environment.

We have directed research designed to manage, reuse and recycle waste products of food production. Waste management is an issue that has been the center of much public debate, both here in Mississippi and elsewhere in our nation. To address public concerns and to help farmers continue to meet consumer demand, we're working with environmentalists, government representatives and livestock producers to meet this challenge.

Because water quality is essential not only for agriculture, but for our very survival, MAFES researchers are identifying strategies to limit pesticide, fertilizer, nutrient and sediment runoff. Some of these strategies include the use of site-specific management practices, or precision farming, that ensure proper rates of fertilizer and herbicide application.

We're also working to reduce the effect of human activities on water supplies. At the Coastal Research and Extension Center, water quality projects focus on the impact of nonpoint sources of pollution — including effluent from failing septic systems and untreated storm water runoff — and methods to control them. Mississippi's Gulf Coast continues to grow, raising some concerns about adverse consequences for coastal wetland areas. CREC scientists are learning more about these wetlands to protect these sensitive environments.

We invite you in this issue of *Highlights* to find out more about the environmental research conducted at the Experiment Station. While it provides a description of only a small number of environmental projects that MAFES scientists are involved in, we think you'll see that they reflect our commitment to preserving our environment, while ensuring food security.

Vance H. Watson
Director

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MAFES RESEARCH HIGHlights

MISSISSIPPI AGRICULTURAL AND FORESTRY EXPERIMENT STATION

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