

Red River Research Station



Report to Stakeholders-January 2020

About the LSU AgCenter

The LSU AgCenter is dedicated to providing innovative research, information and education to improve people's lives. Working in a unique statewide network of parish extension offices, research stations and academic departments, the LSU AgCenter helps Louisiana citizens make the best use of natural resources, protect the environment, enhance agricultural enterprises and develop human and community resources

Research Highlights

Water Resources

A constructed wetland and a tailwater recycling system have demonstrated a 20-50% reduction in N, P, and total suspended solids in effluent from production fields. Irrigation research has provided information on the use of skip-row irrigation on different soil textures and the beneficial effects of cover crops to improve soil moisture. Demonstrations have also shown the benefits of surge valves and soil moisture sensors to improve irrigation efficiency.

Agronomy/Soil Fertility

Fertility research demonstrated the ability of N-stabilizer compounds, which are currently used with urea and UAN, to improve nitrogen availability from poultry litter to plants; identified the optimum combination of poultry litter and inorganic N-fertilizers for corn; and N-management strategies for conservation tillage. The soybean breeding program has identified soybeans with increased tolerance to Cercospora leaf blight disease, tolerance to flooding and drought, and high protein content. These traits are being incorporated into improved soybean lines.

Pasture and Forages

On selected sites, particularly some bottomlands, tall fescue varieties with the non-toxin-producing endophytes can provide cool-season forage, an improved dallisgrass variety can increase plant diversity and ecosystem benefits, and the native legume, herbaceous mimosa, is a grazing tolerant native species with potential value to contribute increased forage quality and biological nitrogen fixation, particularly for low-input pasture systems.

Horticulture

Research continues to evaluate varieties for yield and quality performance. Cherry and heirloom tomatoes have been included in the evaluation in recent years. Research has shown there is a reduction in the tomato yield with recycled planting media due to salt accumulation. The response was different among tomato varieties and some varieties may be salt tolerant.

Red River Research Station

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https://www.lsuagcenter.com/portals/our_offices/research_stations/redriver

Research Station Director

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Size: 573 acres, including 260 in cropland and 190 acres in pasture. There are four greenhouses for tomato research totaling 15,500 sq. ft.,

Research focus:

Water Resources

Best Management Practices to improve water and nutrient use efficiency and reduce nonpoint source pollution

Agronomy/Soil Fertility

Efficient use of soil amendments and fertilizers, and the impact of production practices on productivity; development of soybean germplasm

Pastures/Forages

Identification of persistent forages for soil health and increased livestock productivity

Horticulture

Economic greenhouse tomato production and tomato variety evaluation

Significance of Research

- Water resource research will improve the efficiency of irrigation and reduce nonpoint pollution from farming practices
- Fertility research will lead to improved production and to more efficient use of fertilizers and soil amendments.
- Disease resistant and flood and drought tolerant soybeans adapted to Louisiana will improve yields and reduce disease management costs.
- The identification of persistent, high quality forages will provide improved cattle performance.

2019 Industry Facts

- 1.45 million acres of row crops were irrigated in 2018
- 64.9 million bushels of soybeans were produced on 1.3 million acres
- 78.8 million bushels of feed corn were produced on 444 thousand acres
- 189 thousand bales of cotton were produced on 108,500 acres
- Gross farm value of greenhouse vegetables (96% tomatoes) was \$1.9 million
- Hay for noncommercial purposes was grown on 364 thousand acres and produced 2.6 tons per acre.

Data from the Louisiana Ag Summary website: LSUAgCenter.com/agsummary

Future Plans

Water Resources

The identification of best management practices to improve water and nutrient use efficiency and to reduce the impact of production practices on nonpoint source pollution. Crop irrigation research will focus on improving the irrigation/water use efficiency through determining the irrigation needs based on the crop, soil health and texture, production practices, and weather. Research will also explore the estimation of reference evapotranspiration and crop coefficient needs for irrigation scheduling.

Agronomy/Soil Fertility

Research focuses on rate, source and time of fertilizer application of plant nutrients; integration of animal wastes and inorganic fertilizers to improve soil fertility and health with minimal environmental impact; integration of winter cover crops to improve soil health and main-crop yields; and impact of various nutrient management practices on nutrient leaching, volatilization and greenhouse gas emissions. The soybean breeding program will continue to develop high yielding germplasm with emphasis on the incorporation Cercospora leaf blight resistance, and flood and drought tolerance. Variety trials for cotton, feed grain and soybean will be conducted.

Pastures/Forages

Continuing research with forage legumes to address environmental benefits of diverse mixtures of plant species in pastures. Responses of forage varieties, including bermudagrass varieties, on different sites of production will be assessed to determine effects of soil type on adaptation of useful species to identify superior forage genotype and environment combinations for enhanced production responses.

Horticulture

Variety evaluation will continue to a focus of the program. Future evaluations will include additional cherry and heirloom tomatoes. Research will investigate the impact of recycled planting media on fertility and crop production.

Louisiana Agricultural Experiment Station

Louisiana's unique combination of crops – ranging from corn, cotton, rice and sugarcane to extensive forestry, poultry, cattle and fisheries industries – present challenges for providing research-based information to ensure sustainable agricultural production systems.

To address the needs of these industries, the Louisiana Agricultural Experiment Station operates 14 departments shared by the LSU AgCenter and the LSU College of Agriculture, as well as 16 research locations across the state. To fund the basic and applied research, scientists compete for federal and state grants and checkoff dollars provided by some farmers' groups, along with state and federal dollars. Many of the facilities also sustain their research operations through the sale of agricultural commodities produced on the stations.

The LSU AgCenter has the most successful record of commercialization of intellectual property in the LSU System. Since 2000, fifteen new companies have been started based on licensed technology from the LSU AgCenter. The income is distributed among the LSU System, the inventors and more research.



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