

# Macon Ridge Research Station



## Report to Stakeholders-December 2019

### 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

#### Entomology

Research is focused on insect management and crop response to new and currently registered insecticides, development/ updating of economic thresholds in field crops, quantification and characterization of insecticide resistance by target insects. Identification and documentation of invasive insect species, development of IPM programs in field crops, and investigation of insect resistance management strategies to evade or mitigate insects that could or have developed resistance to insecticides.

#### Plant Pathology

The pathology program focuses on applied projects geared towards developing new or refining existing integrated disease management strategies. Commercial and experimental fungicides are evaluated for effectiveness on many foliar and soilborne diseases. Fungicide resistance in important row crop pathogens is identified and monitored while developing mitigation strategies. Breeder selections, varieties, and hybrids are screened annually for naturally-occurring diseases and chloride tolerance. The effect of cultural practices such as crop rotation or tillage type are continually investigated as part of an integrated disease management program. New and emerging diseases are identified and management strategies are developed accordingly. Laboratory and greenhouse facilities at the station allow for diagnosis and basic research on economically important row crop pathogens. Results from this program are used extensively by parish agents, producers, industry, and agricultural consultants to make disease management decisions agronomic crops.

#### Row Crop Agronomy

Results from research efforts in conservation tillage have led to widespread utilization of reduced tillage in the area. Other agronomic practices, such as plant population, planting date, row spacing and fertilization, are also evaluated. Optimum fertilization including right source, rate, timing, and placement are very important for profitable crop production and sustain soil fertility and productivity. Fertilizer recommendations based on nutrient concentrations at different soil depths as well as the impact of fertilizer source (liquid vs. granular), application timing (fall vs spring), and placement (banding/injection vs. surface application) on crop yields are routinely evaluated to update nutrient management strategies with recent genetics and technologies. Varieties of most agronomic crops are evaluated at the research station, and strategies are developed for producing multiple crops on a given land area within the same year.

### Macon Ridge Research Station

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#### Email:

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#### Web site:

[https://www.lsuagcenter.com/portals/our\\_offices/research\\_stations/maconridge](https://www.lsuagcenter.com/portals/our_offices/research_stations/maconridge)

Office Hours: 7:30am - 4:30pm

#### Interim Research Coordinator

Trey Price

Size: 815 acres

#### Research focus:

#### **Corn, Cotton, Grain Sorghum, Oats, Rice, Soybean, Wheat**

- ◆ Integrated Pest Management
- ◆ Pesticide Efficacy
- ◆ Transgenic Technologies
- ◆ Variety Development/Evaluation
- ◆ Fertility/Soil Health
- ◆ Cultural Practices (Conservation Tillage, Crop Rotation, Cover Crops, etc.)
- ◆ Irrigation/Salt Water Tolerance
- ◆ Remote Sensing/Precision Agriculture

## Weed Science

The research basis is to develop weed management strategies for rice, corn, soybean, cotton and grain sorghum. There are four main areas of work: 1) preplant, 2) in-season, 3) post-harvest and 4) fall weed management. Crop and weed response to new and existing herbicides and herbicide resistance management are important components of the research effort.

## Significance of Research

- Pest management strategies developed at this location are widely adopted and reduce the incidence of resistance in insect pests.
- Agronomic research has been instrumental in widespread adaptation of conservation tillage practices in row crop production in Louisiana.
- Research conducted in plant pathology provides information and solutions to minimize the effects of potential disease outbreaks.
- Effective weed management programs have been developed through research to protect yields of all major agronomic crops in the area.
- Research at the Macon Ridge Research Station is focused on improving profitability of agriculture through the use of environmentally sound production practices.

## 2018 Industry Facts

- Economic value to Louisiana of crops grown at the Macon Ridge Research Station totals more than \$1.8 billion.
- 11 of the 12 parishes in the Northeast Region contribute 51% of this value in cotton, feed grains, rice, soybean, and wheat.
- The Northeast Region served by the Macon Ridge Research Station accounts for approximately 64, 71, 13, and 48 percent of the cotton, corn, grain sorghum, soybean, rice and wheat, respectively, produced in Louisiana.
- Total economic value of cotton, feed grains, rice, soybean, and wheat in the Northeast Region was \$147.7, \$252.2, \$67.8, \$448.4, and \$0.65 million, respectively, during 2018.

Data from the Louisiana Ag Summary [website](#).

## Future Plans

Agriculture production is crucial to the economy of the Northeast Region and state. Personnel at the Macon Ridge Research Station are dedicated to providing research information important to continuing profitability in agriculture production. Research efforts will continue to focus on evaluating new technologies available in agriculture to determine the potential benefits when utilized in production fields. New crop varieties and pest-control technologies will be a part of these evaluations. Research with crop rotations, tillage, fertilization and management effects on disease, insect, and weed impacts will be conducted. Weed science efforts will continue to focus on resolving known and anticipated weed problems in northeast Louisiana. All research efforts will focus on providing information to sustain long-term agriculture production in an environmentally sound manner.

Please keep on the lookout for upcoming field day advertisements such as the Annual Wheat, Oat, and Cover Crop Field day in April!

William B. Richardson, LSU Vice President for Agriculture, Louisiana State University Agricultural Center, Louisiana Agricultural Experiment Station, Louisiana Cooperative Extension Service, LSU College of Agriculture. The LSU AgCenter and LSU provide equal opportunities in programs and employment.

## 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.



For the latest research-based information on just about anything, visit our website:

[LSUAgCenter.com](http://LSUAgCenter.com)