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## WITH UP-TO-DATE SOYBEAN PRODUCTION INFORMATION

### MISSISSIPPI SOYBEAN PROMOTION BOARD PROJECT NO. 29-2017 (CONT) 2017 ANNUAL REPORT

Title: Delta Agricultural Weather Center

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#### BACKGROUND/OBJECTIVES

Agricultural weather data are needed by producers, researchers, and policy makers to make decisions daily. Producers utilize the data for critical management decisions about tillage, planting, crop protection applications, irrigation, fertilization, and harvesting. Researchers require agriculture weather data to analyze test products, verify field data, and compare different data sets to each other. Policy makers use agricultural weather data in reports from county agriculture statistics to worldwide agriculture supply and demand estimates

Producers and researchers in the intensive agricultural region of the Mississippi Delta have a tremendous need for weather information to use to develop critical research and management strategies for planting, irrigating, fertilizing, and harvesting, as well as the timing of other critical production practices on soybeans planted in the Delta. This project's goals are to continue data collection and dissemination of pertinent agriculture weather data and products that are required by researchers and farmers and to increase the availability and quality of the data and products available.

#### PROGRESS/ACTIVITY

The Delta Agricultural Weather Center has continued to supply weather data to researchers and growers throughout the 2017 growing season through the center's website.

The center obtained nine weather stations that were put in various locations throughout Mississippi for the Miss. soybean variety trials. Programs were written for each station by center personnel to measure hourly temperature, humidity, and rainfall, as well as 24-hour readings at each of the locations. The program was set up to monitor the data with consistent downloads to be conducted by the center. The program was written to store data in time so that extreme temperature events as well as rainfall will be noted at the time of day it has occurred. The Center has maintained the eight weather stations throughout the growing season. The Center has finalized the collection of data sets for the MSU soybean variety trials. All Weather data were sent for inclusion in the 2017 MSU Variety Trial Publication.

The Center has updated the new 30-year normals for Stoneville on the DREC Weather Website. The Center has also established a new website that offers real-time weather data, every fifteen minutes, hourly and daily readings. The new website can be found at [www.deltaweather.extension.msstate.edu](http://www.deltaweather.extension.msstate.edu) The website also includes fifteen minute, hourly, and daily readings from the MSU Variety Trial Stations.

The Center also supplied weather data for a USDA publication "Web-based Real-Time Temperature Inversion Determination for Recommending Timing of Aerial Application in the Mississippi Delta".



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## **WITH UP-TO-DATE SOYBEAN PRODUCTION INFORMATION**

This website is now active (also posted on MSPB website) and uses these data to help pesticide applicators determine safe spraying times.

The Center is also involved in Project2234 “Effect of Planting Date, Latitude, and Environmental Factors on Choice of Maturity Group in Mid-South Soybean Production (Year 4 of 4). The Center has supplied temperature and rainfall data for this project. Without these data this project could not be carried out.

The Center is also involved with supplying weather data for the following projects.

Title: Weed Management Program for Mississippi Soybean Production. Principal Investigator: Jason Bond

Weather data is essential for calculating ET values for the following studies here at Stoneville:

- 1) Row-Crop Irrigation Science Extension and Research (RISER) Program
- 2) Developing Sustainable and Profitable Deficit Irrigation Programs
- 3) Improving Irrigation Application Efficiency
- 4) Screening Irrigation Scheduling Tools
- 5) Cover Crop and Tillage Effects on Irrigation Application Efficiency, irrigation Scheduling, Soil Physical Properties, Run-Off, Soybean Yield and Economic Return.

### **IMPACT AND BENEFITS TO MISSISSIPPI SOYBEAN PRODUCERS**

The data are used for research to indicate the amount of rainfall the crop receives throughout the growing season. This info is beneficial in making management decisions, such as when to schedule irrigations to supplement the lack of rainfall the crop might need in order to achieve maximum yields. It can be helpful in justifying harvest dates that might be later than the norm due to heavy rains late in the season that might have delayed harvest. At a location that has both irrigated and non-irrigated tests, the Center’s rainfall data are important to show the crop’s irrigated yield potential when compared to one that was only rainfed.

The Center is making data collections that will be sent to the requesting persons. Each weather station that was purchased will be put into storage for future use in Soybean Variety Trial Research.

The Center will continue to maintain the nineteen stationary stations located throughout the Mississippi Delta and beyond to ensure these data will be available for soybean growers and researchers across the State of Mississippi.

The newly-designed website will enhance agricultural research as well as help growers make more efficient and timely management decisions.