



Mississippi Corn Promotion Board 2023 Progress Report

Project

Title: Delta Agricultural Weather Project

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Department: DREC– Delta Agricultural Center

Project Summary (Issue/Response)



The Mississippi State University Extension Service proposed the development of the Basic Weather Service for Research & Extension to fill the void left by the termination of the National Weather Service's Mid-South Agricultural Weather Service Center located in Stoneville MS in April, 1996. Producers and researchers in the intensive agricultural region of the Mississippi Delta have a tremendous need for weather information to develop critical research and management strategies. 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.

Project Results/Outcomes



Producers and researchers in the intensive agricultural region of the Mississippi Delta have a tremendous need for weather information to develop critical research and management strategies for planting, irrigating, fertilizing, and harvesting as well as the timing of other critical production practices on Corn 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. This data is used for our 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. Also 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.

Also, at a location that has both irrigated and non-irrigated tests, this rainfall data is important to show the crops yield potential when compared to one that was only rain-fed vs. rainfall in addition to supplemental irrigations. Weather data monitors, plant growth, yield, and quality of corn entries in the variety demonstration areas planted there. This information should be especially valuable for the years of extreme of drought and high temperature that were experienced in area throughout the years. The data may also be of great value to other producers in that part of the state as they attempt to explain reduced yields to their sources of financial support. Planting recommendation reports for Corn are graphical data sets based on National Weather Service forecasts and/or DREC – Agricultural Weather Center historical data and Mississippi State University Extension Service Recommendations. They allow users to view their particular location in the state and decide on the optimum time to plant crops. They also make users aware of times not recommended for planting thus reducing the risk for seedling emergence problems and potential economic losses.

Project Results

A Mobile Weather Station at a Mississippi State Corn Variety Trial. Nine stations were added to each corn location.

The Station contains:

Air Temperature/Humidity, Precipitation,

And Wind Speed/Wind Direction

The Center added 6 new stationary weather stations in 2023.

A total of 41 stationary Weather Stations are available for 2023.

Smartirrigation Cropfit App is now available using Delta Ag Weather Data

Realtime data is available every fifteen minutes on the

Center's Website at www.deltaweather.extension.edu



Mobile Weather Station at a Corn Variety Trial
At Money, Mississippi

Project Impacts/Benefits

The DREC-AWC data are available for producers to utilize in managing crop production and protection inputs from 41 weather stations throughout the state of Mississippi. Researchers at the DREC and other agricultural research facilities in the region use agricultural weather data in product evaluations, and model verification. Information from the DREC-AWC is used in agricultural statistical analysis from county to global scales. The information is available via the Internet for even wider use, application, and impact. Site specific stations installed will improve research and demonstration results for MAFES, USDA, and Extension service personal. The DREC-AWC is supporting many research and Extension programs in agronomy, economics, and environmental stewardship. Intensive agricultural management continues to become more widely used in Mississippi and throughout the mid-south. The DREC-AWC makes data readily available for producers, as well as the larger universe of state and federal agencies. All data can be accessed on the centers website at www.deltaweather.extension.edu

Project Deliverables

2023 MSU Corn Variety Trails