

Mississippi Corn Promotion Board 2024 Progress Report



Project Title: Corn Verification Program

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Project Summary (Issue/Response)

Corn production is a growing integral component of Mississippi's agricultural economy as it has become the second or third most popular row crop based upon acreage and value during the past fifteen years. This indicates tremendous potential to improve our corn production systems. Thus, Mississippi State University Extension has established a Corn Verification Program supported by the Mississippi Corn Promotion Board using your checkoff funds.



The fundamental goal of the Corn Verification Program is to increase corn profitability and sustainability of Mississippi's corn production systems. We continuously serve this role by assimilating research findings into practical management strategies and educational programs addressing key limitations of Mississippi's corn producers. We can help achieve these fundamental goals by demonstrating improved management practices, new technology and decision-making directly in grower corn fields. This program fosters opportunity to regularly inspect grower fields and communicate with growers, so we can identify potential limitations first-hand, and constantly improve management plans. This inspires us to produce and deliver leading educational programs to help all Mississippi growers, crop consultants, agricultural industry, retail industry, and consumers. We also heavily utilize knowledge generated from this program to provide critical direction for future research initiatives and efficiently use your checkoff funds.

In summary, we develop and apply innovative, science-based management solutions to directly address corn production limitations and demonstrate value. There is no stronger tool to encourage adoption of better practices than successful demonstration in the field.

Project Results/Outcomes

Our experience with Mississippi growers and Corn Verification Fields has identified three fundamental management topics which principally establish corn yield potential and affect profitability: hybrid selection, stand development, and plant nutrition. Specific limiting factors may differ by farm, but this program gives us tremendous insight from which we can improve corn research and educational efforts. Our climate presents unique challenges which cause substantial issues with several key topics for southern corn growers. Abundant rainfall commonly presents intrinsic problems for corn planting and stand development in the Midsouth. Abundant spring moisture not only restricts and delays corn planting, but also increases stand failure, growth disparity and soil compaction, which substantially reduce yield. Thus, we promote planting guidelines based upon favorable soil temperature and moisture, rather than relying solely on historical weather data or calendar date. Recent efforts are focusing upon methods to improve corn stand uniformity and vigor, including new planter technology, profitable seeding rates, and refining raised bed preparation and seeding depth.



Project Results

Our experience has also shown tremendous opportunity exists to improve corn profitability through better soil-water management. We work closely with our irrigation team and have found a vast majority of corn growers apply far more irrigation than necessary. This leads to incessant soil saturation, which stunts corn growth and root development. Thus, we have integrated new technology with crop needs to develop innovative irrigation guidelines which enhance corn productivity and dramatically reduce expenses. Additionally, wet soils restrict plant nutrition by promoting nitrogen loss, and create soil compaction during various field operations, which restricts root growth. Accordingly, we tailor nitrogen fertility programs to ensure fertilizer sources are applied using suitable methods and timing capable of improving crop availability and reducing loss for both irrigated and dryland production systems. Crop nutrient needs also continue to change as yields rise, different crops are grown, and other conditions evolve. Lastly, the university serves a vital role of independently evaluating corn hybrids. We analyze Hybrid Trials and coordinate an on-farm Corn Hybrid Demonstration Program designed to supplement yield data and thoroughly evaluate characteristics of the market's premier hybrids, so we can recommend better hybrids for specific culture. In summary, these farm-based activities allow us to clearly assess regional corn needs and better direct educational and research programs to enhance profitability and reduce risk for Mississippi corn producers.



The Corn Verification Program offers tremendous opportunity to identify limitations and enhance our cropping systems.

Project Impacts/Benefits

Corn research findings are delivered to growers, private consultants, retail and agricultural industry through this program and our educational efforts. These events include the MSU Row Crop Short Course, MS Ag Consultants Conference, MS Ag Industry Council Conference, the Mississippi Crop Situation Blog and podcast, social media posts, county meetings, field days, workshops and countless phone conversations and field consultations. Furthermore, when seasonal challenges arise, we are there to provide expertise and strategies to optimize your outcome. The Corn Verification Program provides first-hand opportunity to identify factors limiting corn productivity, so that we can develop educational programs and collaborate with scientists and industry to better direct research to address pertinent limitations in our region. The cumulative adoption of progressive practices identified, developed and demonstrated through this program enhance our corn systems and reduce risk. This has increased Mississippi corn yields at rates far surpassing and exceeding the national average. For example, CVP efforts have helped increase corn yields up to 25 bu/a, while reducing irrigation water consumption and expense over 40% compared to standard practices. These benefits alone increase grower profitability nearly \$150 per acre. These activities substantially improve corn profitability and sustainability in Mississippi.

Project Deliverables

- ⇒ 43 Professional presentations, field days, workshops and other MSU Extension educational programs in 2024
- ⇒ 46 Published activities on the Mississippi Crop Situation Blog and Mississippi Crop Situation Podcast in 2024
- ⇒ 28 MSU Extension, MAFES, trade magazine and popular press publications in 2024
- ⇒ 127 Publications on social media (X and Instagram) creating 307,424 impressions and 3658 followers in 2024
- ⇒ 217 Field visits and consultations associated with this program in 2024