



# COTTON SEED VARIETY TRIALS IMPROVE YIELDS

## Challenges

- Between the 2002 and 2022 Censuses of Agriculture, the number of planted acres of cotton per farm increased by 8% for those farms that grow cotton, and the yield per acre increased by 39.9%.
- Variety selection is both more important and more difficult than ever before. A well-performing variety usually has a lifespan of 4 to 6 years, and there are many new varieties entering the market each year.
- Private industry and university official variety trial data are now evaluated for 1 to 2 years in advance of the variety's release, instead of the 2 to 3 years that has been the historical norm.

## EXTENSION RESPONSE

To assist producers, Mississippi State University Extension Service faculty and professional staff conduct the Mississippi On-Farm Cotton Variety Trials to evaluate varieties using normal production practices over a wide variety of conditions.

- To assist cotton producers in making planting decisions, the program evaluates no more than 10 top-performing cotton seed varieties in 14 local, on-farm demonstration plots (in 2024, six demonstrations were in the Delta and eight were in the Hills).
- Planting and harvesting are performed by standard industry equipment to simulate commercial production conditions. Field sites are selected based on grower preference and elements that are required to conduct a reliable yield trial.
- Harvest measurements for both lint and seed are conducted using state-of-the-art equipment to ensure accurate producer information.
- Metrics reported to help producers make informed decisions include lint yield, lint percent, micronaire (fiber cell wall thickness and air permeability), staple length, fiber strength, fiber uniformity, and leaf grade.

## ECONOMIC IMPACTS

- Data from the 2023 trials (for crops planted in 2024) showed that the five best cotton varieties improved yields by a 5-year average of **22 pounds of lint per acre**.
- Given a 95% adoption rate, this translates to a potential increase in revenue of **\$7.1 million** for Mississippi cotton producers; this is critical to farm sustainability in a year when corn prices and planted acreages experienced substantial declines.
- We estimate that this increase in farm revenue could result in **46 jobs** earning **\$2.5 million**, generate **\$4.7 million** in value-added, and result in **\$12 million** in output.
- Local taxes could increase by **\$17,516** for municipal governments, **\$43,699** for local special districts (e.g., school districts), and **\$35,442** for county governments.
- In addition, state taxes could increase by **\$241,697** and federal taxes by **\$615,909**.



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