



Mississippi Corn Promotion Board 2018 Progress Report

Project

Title: Row-Crop Irrigation Science Extension and Research (RISER) Program

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Project Summary (Issue/Response)




The RISER Program validates the ability of irrigation water management (IWM) tools to reduce water use while maintaining or improving corn yield and profitability through on-farm demonstration; and 2) provides first-hand learning opportunities for existing and new irrigation management tools. Learning opportunities are provided by 1) utilizing yearly in-service training to educate county extension agents, NRCS personal, private consultants and private sector representatives on irrigation BMPs installed at RISER locations, i.e., PHAUCET, soil water budgets, soil scheduling tools, meter utility, proper irrigation set design, etc.; 2) conducting on-site field-days at multiple RISER locations within the growing season; and 3) providing one-on-one, on-farm consultations for producers interested in adopting the latest RISER validated technologies. RISER locations are implemented with flow meters to determine cumulative water use. Yield and yield components are determined for both RISER and Producer controlled fields. Water and yield data are measured to document BMP effectiveness at the field scale. Collecting field scale data at multiple locations across years allows MSU personal to more effectively identify key physiochemical parameter(s) required for individual BMP success.




Project Results/Outcomes

Funding by the MCPB is instrumental in supporting Mississippi State Universities RISER Program. Irrigation water management tools including Pipe Planner, surge irrigation, in-season tillage, PAM and soil moisture sensor technologies were showcased at 5 locations in 2018. Additionally, we taught 25 producers how to use Pipe Planner.

Project Results





On-Farm Evaluations: Corn



	Yield	Water Use	WUI	Profitability
	---Bu/acre---	---Acre-in---	--Bu/acre-in--	----\$----
Producer	223	9.2	29.9	682
RISER	231	5.5	46.0	709
P-value	0.0526	0.0021	0.0001	0.0560

N = 14 farms
7% population exceeded permitted value, 18 acre-in/year
86% population applied more water than RISER
14% population applied less water than RISER



Project Impacts/Benefits

The RISER program demonstrates potential for irrigation water management tools to improve on-farm profitability up to \$30/acre while reducing water use by 41%. Additionally, the RISER program serves as a catalyst for the adoption of IWM that will make Mississippi corn producers more profitable while reducing demand on the Mississippi Alluvial aquifer.

Project Deliverables

Two scientific talks (60 attending).