

# BMPs & Precision Ag Tools

## Reducing Inputs While Maintaining Yields

Results of a USDA/NIFA study at the University of Georgia Strippling Irrigation Research Park (SIRP) show that Best Management Practices (BMPs) using precision agriculture tools can reduce fertilizer and irrigation water use without reducing yields.

### THE STUDY

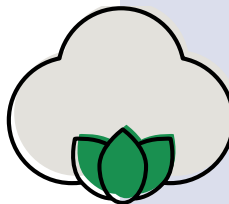
- Three-year cotton-peanut-corn rotation; crops planted into rye cover crop using strip tillage.
- Fertilization method: traditional vs fertigation (application of liquid Nitrogen (N) through irrigation system) on cotton and corn.
- Irrigation scheduling: calendar, smart irrigation app, soil moisture sensors (SMS).

## KEY FINDINGS



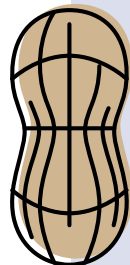
### CORN

- Fertigation resulted in similar yields (-1%) to traditional fertilization methods while using 17% less N.
- Use of corn app and SMS reduced irrigation by 49% and 51%, respectively, compared to calendar scheduling while maintaining similar yields (3%).



### COTTON

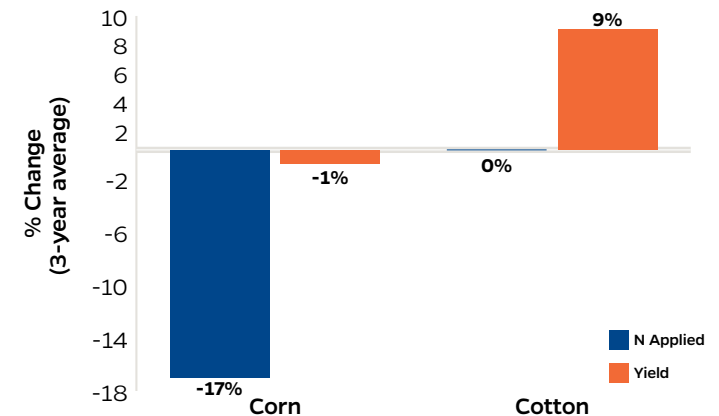
- Fertigation resulted in a 9% yield gain but no reduction in N rates when compared to traditional fertilization methods.
- Use of cotton app and SMS reduced irrigation by 29% and 54% compared to calendar scheduling while increasing yield by 2% and 13%, respectively.



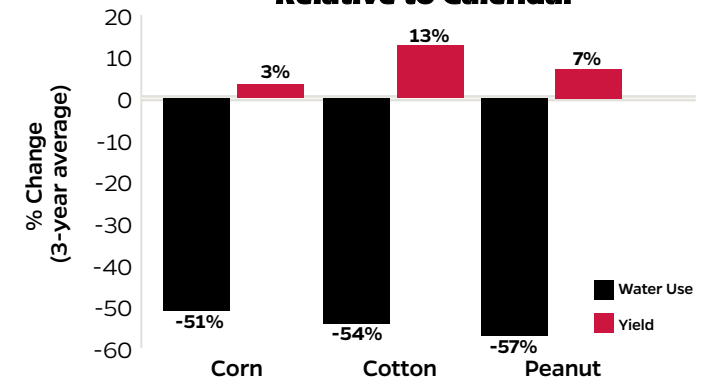
### PEANUT

- Use of SMS reduced irrigation by 57% compared to calendar scheduling and resulted in 7% higher yield.

### Fertigation Yield and N Applied Relative to Traditional Methods



### SMS Yield and Water Use Relative to Calendar



This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2017-68007-26319. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.