

BMPs & Precision Ag Tools Can Reduce Inputs Without Diminishing Yields

Results of an ongoing USDA/NIFA study involving the UF/IFAS North Florida REC and area farmers show that Best Management Practices (BMPs) using precision agriculture tools can reduce fertilizer and irrigation inputs without reducing yields.

THE STUDY

- Corn (2018) - Carrot (2019) - Peanut (2019) - Corn (2020) rotation
- Fertilizer rates: 100, 200, 300 lb Nitrogen/acre (N/ac)
- Irrigation scheduling: Calendar, App, Soil Moisture Sensors (SMS)



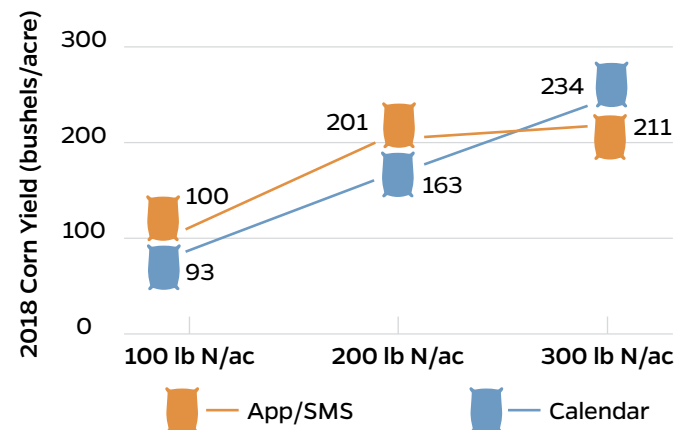
KEY FINDINGS

CORN



- Increasing N rate above 200 lb/ac did not significantly increase yield when using App and SMS irrigation scheduling in either 2018 or 2020.
- In 2018, the 300 lb N/ac treatment produced 44% more yield than the 200 lb N/ac rate produced when using calendar based irrigation scheduling. In 2020, N rates produced similar yield.
- App and SMS irrigation scheduling resulted in significantly less water use in both 2018 and 2020.

Nitrogen Fertilizer Effect on Corn Yield

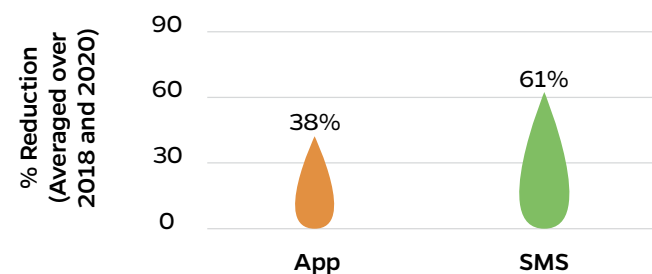


CARROT*

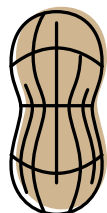


- Use of SMS and App irrigation treatments reduced irrigation by 14% compared to calendar with no significant difference in yield.
- Increasing N rate above 200 lb/ac did not significantly increase yield.

Reduction in Corn Water Use Relative to Calendar



PEANUT*



- SMS use resulted in 40% reduction in irrigation compared to calendar with no effect on yield.

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*2019 results