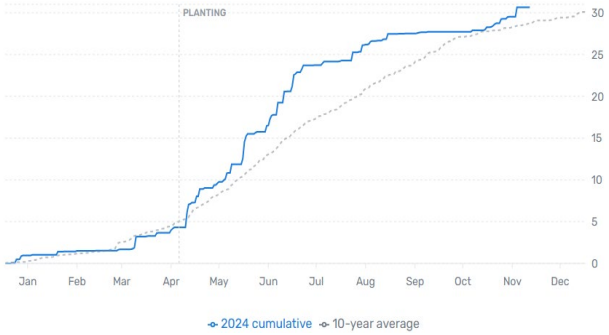
Test of Two Irrigation Scheduling Tools in Soybeans

Study ID: 1315141202403
County: Platte
Soil Type: Nora-Crofton complex
Harvest Date: 10/5/24
Population: 127,000
Row Spacing (in): 30”
Variety: Channel® 3124RXF, Pioneer® 28A42
Reps: 6
Previous Crop: Corn
Tillage: Strip-till
Herbicides: ***Pre:*** glyphosate + dicamba ***Post:*** glyphosate + Engenia®

Irrigation: Pivot
Rainfall (in):



Introduction: This study (with the east field) evaluated the use of Aluvio™ (https://aluvio.us/) and Phytech™ (https://www.phytech.com/) as irrigation scheduling tools for soybeans. Note that this grower has been using the Phytech™ technology for many years to support his irrigation decisions. A center pivot equipped with a FieldNET system by Lindsay™ allowed for different irrigation rates applied in each irrigation event based on a speed control variable rate irrigation. A total of 180 degrees angle of the center pivot was used in this experiment.

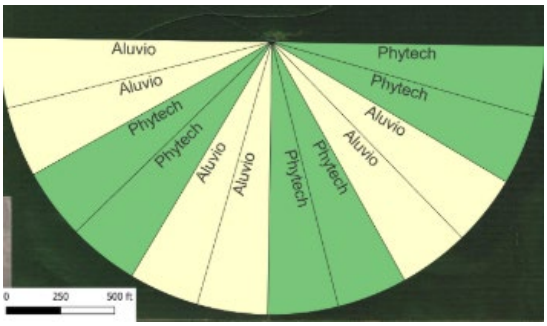


Figure 1: Project Layout and Design

Whenever the grower decided to irrigate based on when the Phytech™ or Aluvio™ system was recommending irrigation, an irrigation prescription map was uploaded in the FieldNET system and irrigation started.

Results:

	Total Irrigation (in)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Phytech™ (grower’s decision)	4.80	8.3 A*	86 A	933 A
Aluvio™	3.50	8.7 A	87 A	941 A
P-Value:	-	0.15	0.87	0.9

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 13% moisture.
‡Marginal net return based on $11/bu soybeans, $8/ac cost for Aluvio™ technology, $6.15/ac cost for Phytech™ technology, and $6/ac-in water applied.

Summary:

- There were no significant differences for moisture, yield, or marginal net return between treatments.
- The total irrigation water applied was 1.3 in lower when using Aluvio™ system in comparison with Phytech™.