

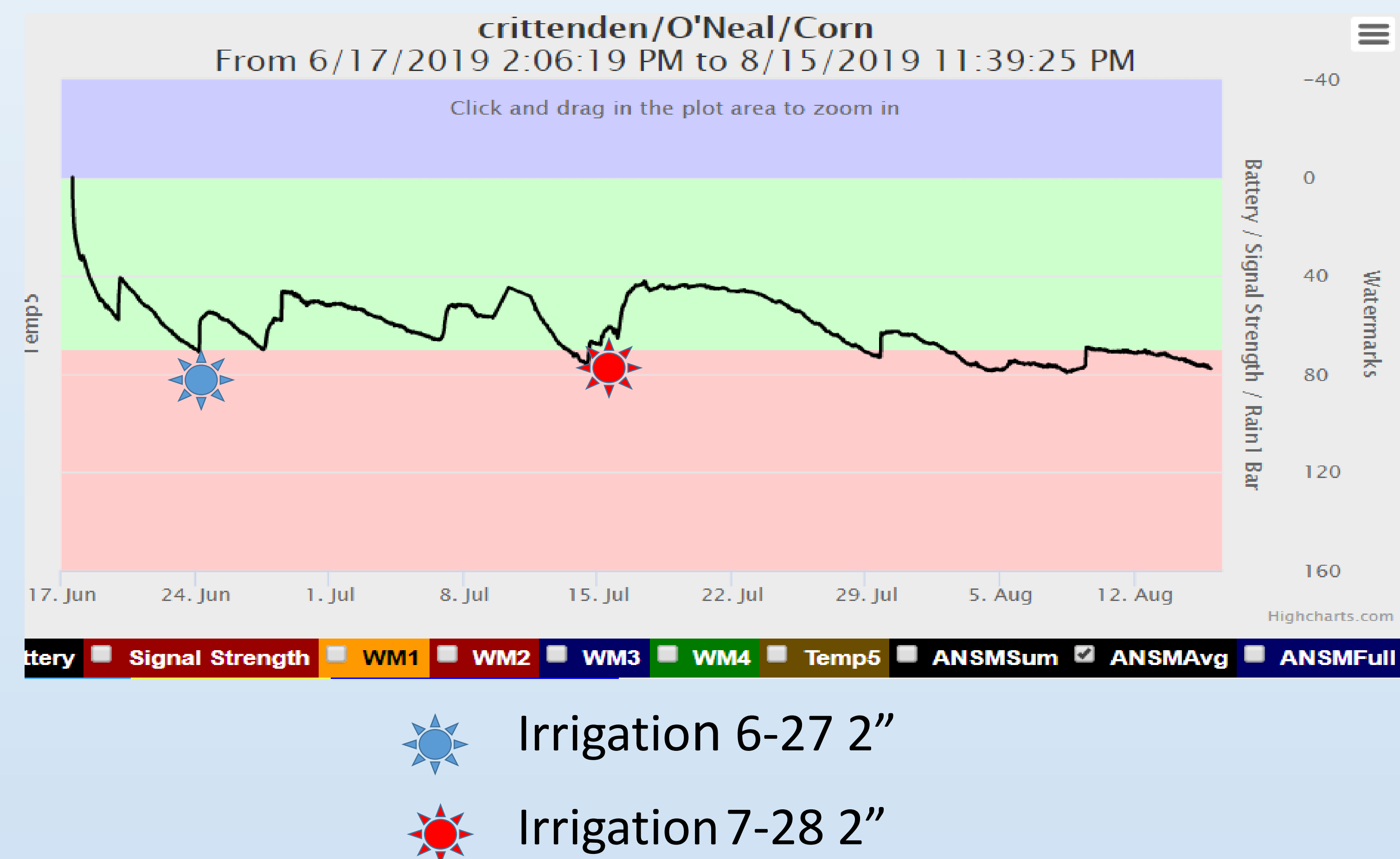
The objective of this project is to aid producers in applying irrigation water for the most effective timing relative to crop needs using moisture sensors and forecast rainfall

2019 Corn Irrigation Timing

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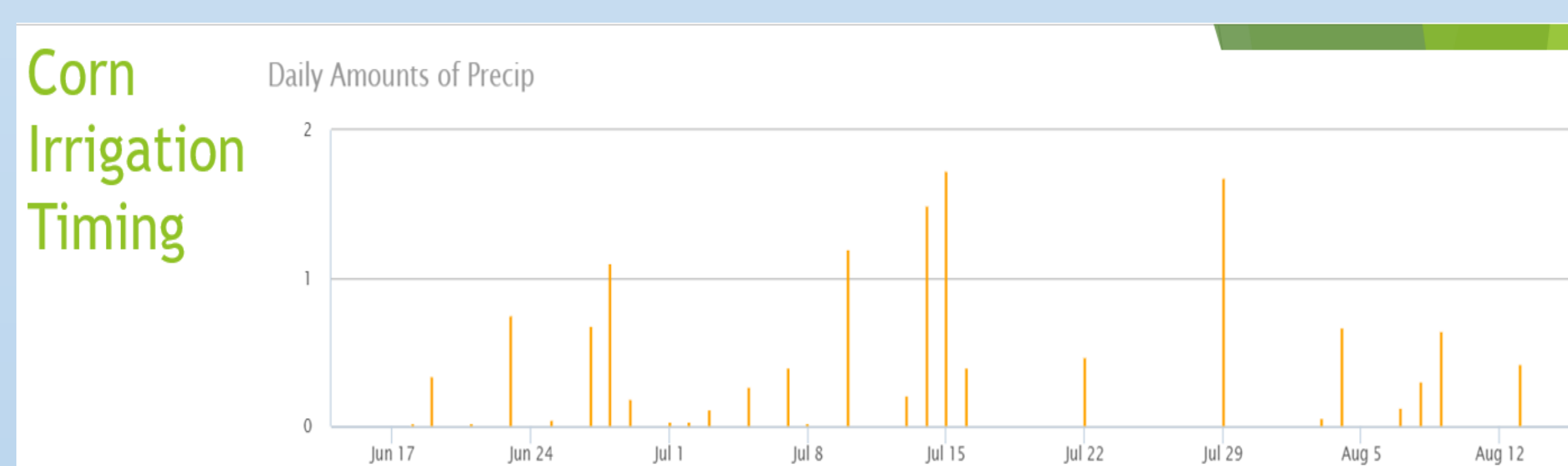
Moisture sensors before installation L-R 30" to 6"

Corn Irrigation Timing

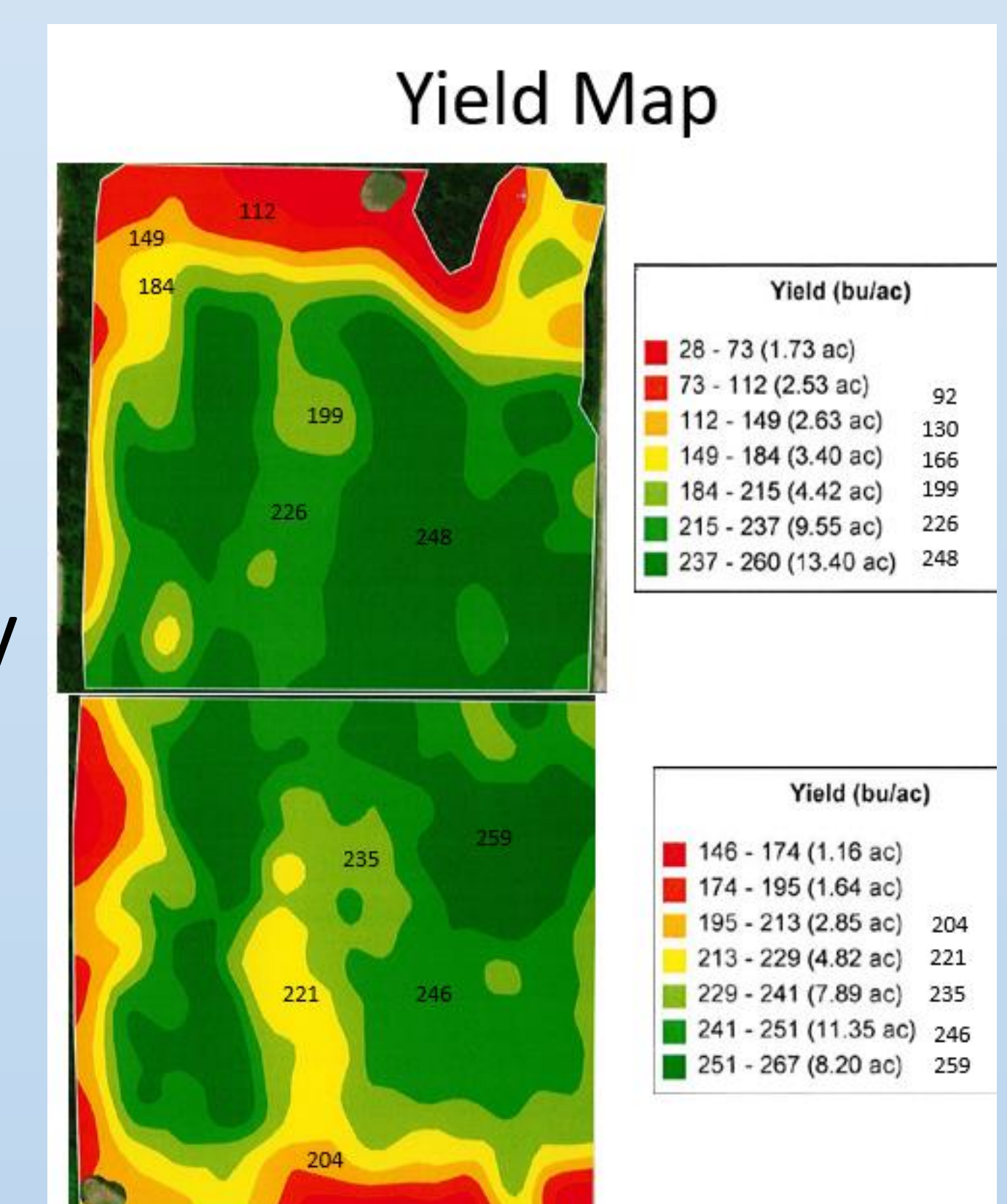
Crop Details

- ▶ Planted 4-23
- ▶ Irrigated June 27 36 hours 2"
- ▶ Irrigated July 28 36 hours 2"
- ▶ Yield 213
- ▶ 4 acre inches of irrigation water applied
- ▶ Control Field Pivot Irrigated 4 times at .7" per circle 2.8" total
- ▶ Control field yield 215

The crop was able utilize soil moisture throughout the root zone. The average of all 4 sensors never exceeded 80 Centibars, which should have left 1" of available moisture



By supplying moisture to the crop when needed an average yield for the field was 213 bu/ac. By conserving irrigation expenses a profit of \$203.00 /acre was achieved for this operation based on budgeted expenses



Total Rainfall during the irrigation season was 13.49"

Table 1. Crop Water Demand for Corn

Stage	Stage	Days to maturity	Water needed to mature (in)
R4	Dough	34	7.5
R4.7	Beginning dent	24	5
R5	¼ milk line	19	3.7
R5	½ milk line /full dent	13	2.2
R5	¾ milk line	7	1.0
R6	maturity	0	0

Source: Yonts, C.D., S.R. Melvin and D.E. Eisenhauer. Predicting the last irrigation of the season. Nebguide G1871. Lincoln, Nebraska. This table reports inches of water for simplicity but is acre-inches/acre.

By using this corn water demand chart, and precipitation amounts, management could make decisions concerning irrigation timing and termination for the crop

The Corn Irrigation timing and the most Irrigation Termination Demonstration was conducted utilizing Watermark Soil Moisture Sensors placed at depths of 6 in, 12 in, 18 in. and 30 in. The Moisture data was logged and transmitted via an Agsense telemetry unit

