

2019

R&E GOERING FARMS

**KANSAS WATER OFFICE
WATER TECHNOLOGY FARM**

WATER TECHNOLOGY FARM OBJECTIVE

- Study reduced water application approaches through low pressure/low drift nozzling packages
- Analyze low pressure/volume application methods to reduce/eliminate electric “Demand Charges” from BPU.

VENDORS AND TECHNOLOGIES DEPLOYED

- Soil Moisture Probes – Servi-Tech (one in control and each treatment)
- Autonomous Pivot – GPRS Soil Moisture (product in development in 2019)
- Arial Imagery:
 - Ceres – Fixed Wing Imagery
 - Terravion – Fixed Wing Imagery
 - American Robotics – Daily Drone Imagery
- Weather Station:
 - Farmers Edge
 - Servi–Tech Electronic Rain gauge

RESEARCH PLAN

- 1st-4th spans, Senninger Xi-Wobs 15psi at 1.0” per application
- 5th Span, Komet Twisters - 6psi at 90% application rate
- 6th Span, Netafim Mobile Drip Irrigation at 80% application rate
- 7th Span, Senninger LDN bubblers - 6psi at 80% application rate

Netafim Precision Mobile Drip Irrigation



Senninger Xi-Wob

Komet Twister



Senninger LDN Bubbler with shroud



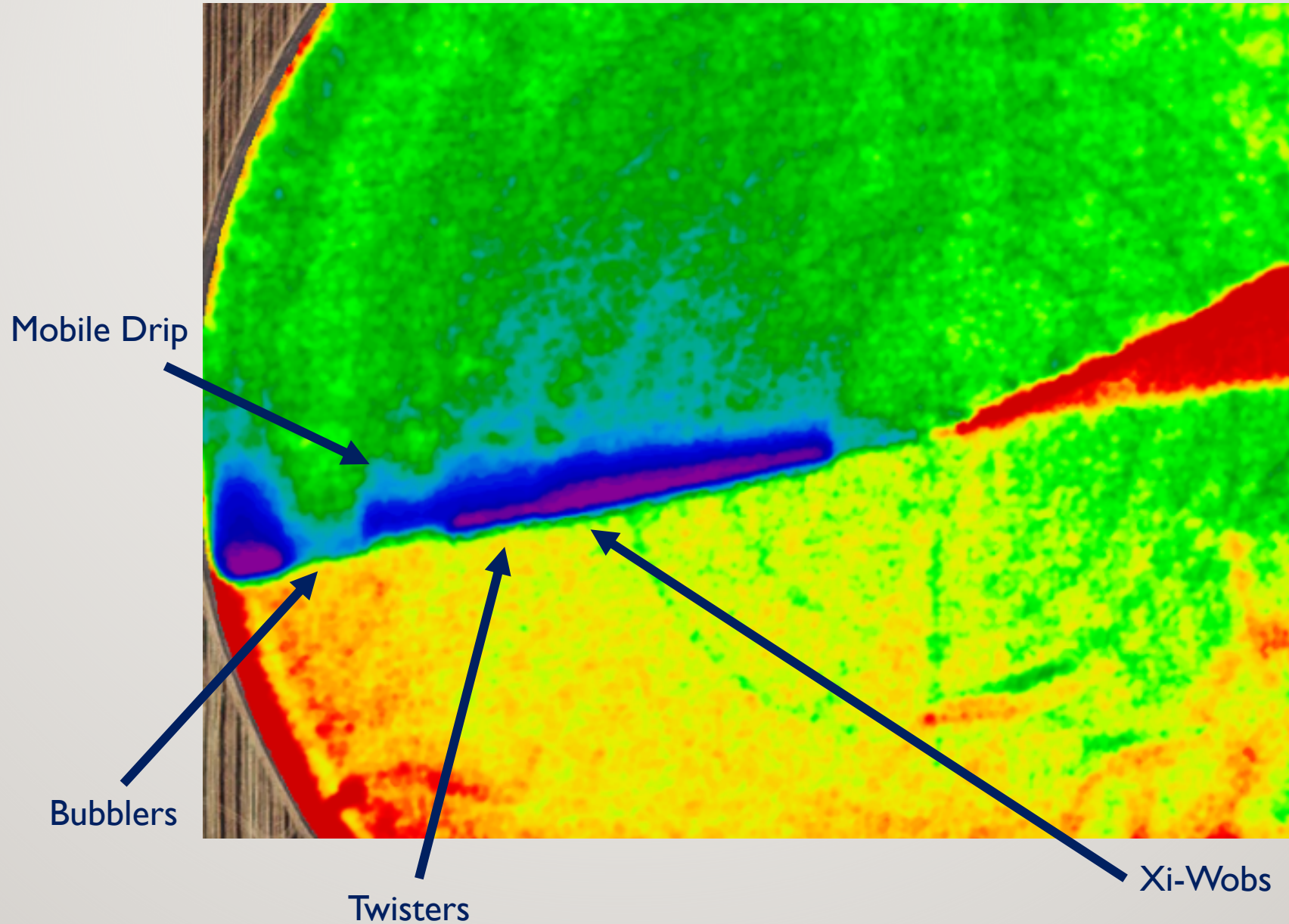
Senninger LDN Bubbler



MEASURED APPLICATION RESULTS

- 1st-4th spans, Senninger Xi-Wobs as control at 0.75” per application
- 5th Komet Twisters with 6lb regulators at 87% rate
- 6th Netafim Precision Mobile Drip Irrigation at 86% rate
- 7th Senninger LDN Bubblers with shrouds at 80% rate

JULY 18 CERES - WATER STRESS (THERMAL)



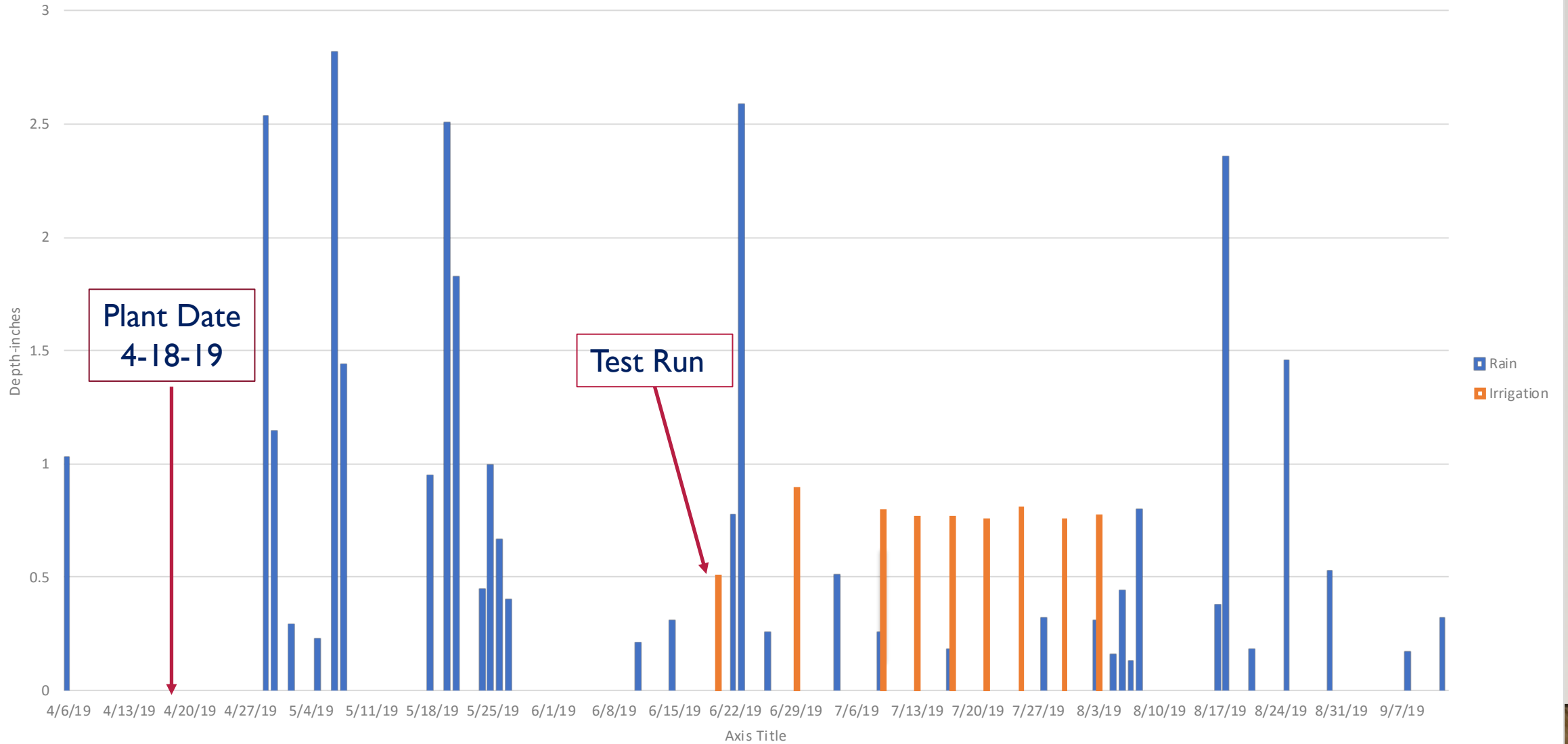
2019 RAIN AND IRRIGATION

- 29.62 inches of rainfall from April 6th to September 12th
- 8 full rate irrigation passes
 - (initial .5 inch application for testing)

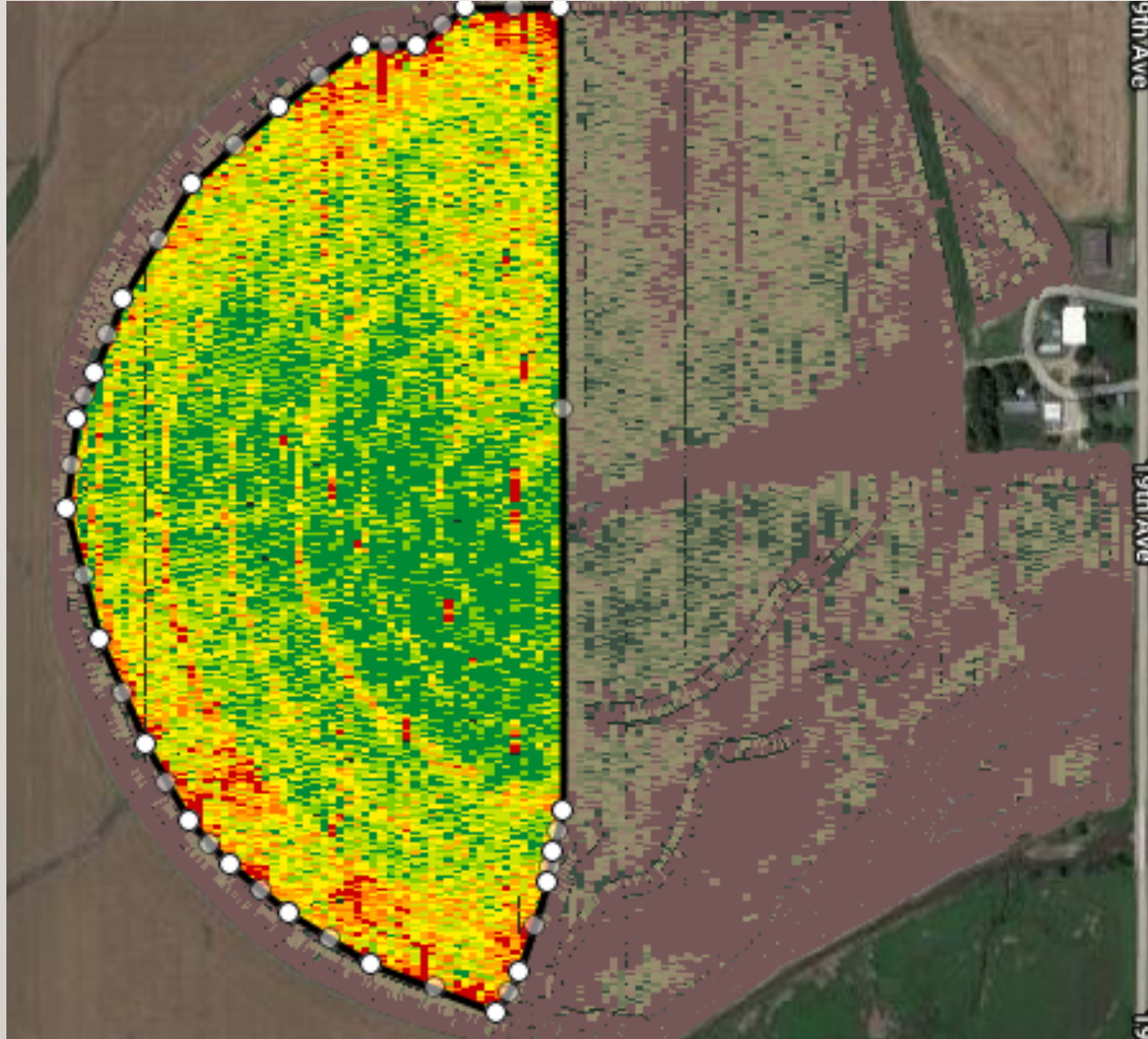
- Control spans – 6.8” (0.75” /application)
- Mobile Drip & Twister – 5.8” (0.64” /application)
- Bubbler’s – 5.4” (0.60” /application)

2019 IRRIGATION AND RAINFALL DATA

Goering Water Tech Farm 2019 Irrigation and Rainfall



2019 CORN HARVEST YIELD



Yield:

233 bu/acre
avg.

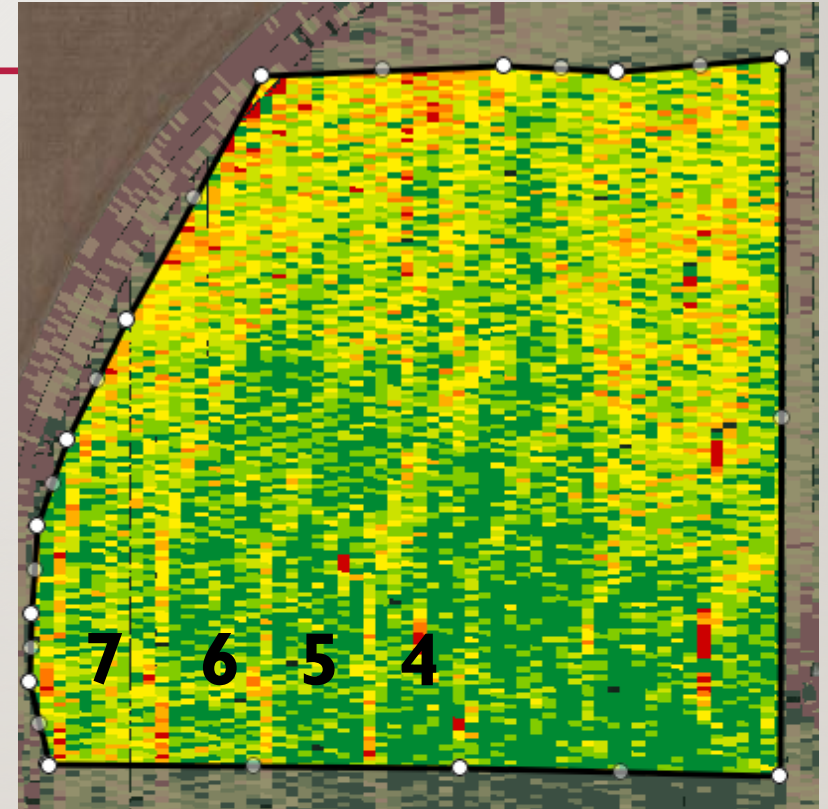
Measured
from last
tower to pivot
point

Variety:

Pioneer I366AM

YIELD RESULTS SAMPLES AREAS

- 4th span, control - 241 bu/acre
- 5th Span, 87% rate - 241 bu/acre (100%)
- 6th Span, 86% rate - 238 bu/acre (98.8%)
- 7th Span, 80% rate - 231 bu/acre (95.9%)



Yield:
237 bu/acre avg.