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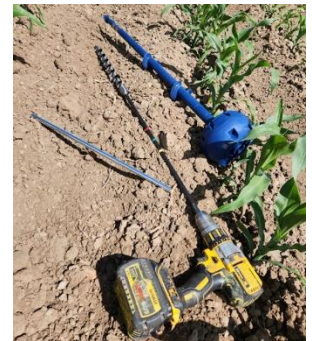
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WEBINAR Highlights – Irrigation Scheduling with Soil Moisture Sensors

[Recorded July 22, 2026](#)

Presenters: TJ Knecht, LoPresti Farms, Avondale, CO, and Greg Peterson, Executive Director, Colorado Ag Water Alliance (CAWA).

Background: TJ earned a degree in Agronomy and worked as a crop consultant before returning to the LoPresti family farm. He became interested in seeing if they could use soil moisture sensors to more accurately match irrigation applications with crop water needs. The CAWA Ag Drought Resilience grant provided funds to purchase soil moisture probes. He also installed a weather station to track weather-related variables. In 2023 he started running a field trial using Watermark tensiometers coupled with a wireless node that enabled cloud storage and data access. He later installed CropX soil moisture sensors near the top and bottom in half of a corn field, and irrigated it based on the sensor data. On the other half of the field, he used typical 'look and feel' evaluation of the soil to determine when to irrigate. They irrigate with siphon tubes. The soil is a loam.



Soil Moisture probe
and installation tools.
Photo: TJ Knecht

Summary of Trial:

- The hardest part of the project was determining where to set the top and bottom thresholds when to irrigate (plant stress) and when to stop (avoid over-application).
 - CropX provided an initial range and then provided adjustments through the season based on communications between TJ and the company.
 - The range set by the company was initially too narrow to accommodate furrow irrigation. The range had to be widened. It was understood that the crop would be under some stress at times.
 - An outside crop consultant helped TJ better “dial in” the correct threshold levels.
- In 2025, TJ added tensiometers (manually read) beside the CropX sensors to check their accuracy. He found the tensiometer readings aligned well with the CropX sensor output.
- In 2025, in the trial half of the field, using the soil moisture sensor output, he cut his irrigation set times from 24 hours to 16 hours and irrigated 6 times throughout the season. On the control half of the field, he irrigated 7 times and used typical 24 hour set times.
- For the 2025 season, 3.2 acre-feet / acre was applied on the trial half of the field versus 5.0 acre-feet / acre applied on the control half.
- The trial half had a yield of 316 bu/acre and the control half had a yield of 321 bu/acre.

The trial half of the field produced \$33.37 more profit per acre than the control half due to labor savings of one less irrigation and not pumping as much water. A \$20/acre cost for the soil moisture sensors was included in the P/L estimates for the trial side of the field.

- In 2026 (drought year with less water) they are using the sensors to reduce set times and stretch water further.

Take-homes:

- It took a lot of time (3 growing seasons) to become comfortable with using soil moisture sensors.
- Make sure the dealer selling the soil moisture sensors provides strong technical support.
- TJ had a soil texture analysis done on his soil to determine the percentages of sand, silt and clay. This knowledge, along with help from the crop consultant, helped refine where they set the watering thresholds.
- The sensors also helped increase understanding of the crop root depths through the season and how water moves through the field below the surface.
- If you want to try using soil moisture sensors to better inform water applications, pick a crop that is interesting to you and commit to spending significant time learning how to utilize them.