

Farmers seek higher yields from futuristic fields

Written by Becca Brandt

Finding the right balance between conserving resources and maximizing crop yields is an ever-present struggle in farming communities such as Holyoke. With hot debates about overpumping and a constant eye on the weather, it is often difficult to determine the best procedures during the growing season.

Advancements in agricultural technology have led some farmers to deviate from their traditional methods in exchange for something new. One such advancement is soil moisture probes.

Two groups, CropMetrics and Hortau, have gradually been bringing probe technology to Phillips County. Both companies provide on-site support for their products, but there are still many other probes available on the market.

Brett Gerk is working with 20 different farmers managing 80 probes this season. Gerk is a precision data specialist with CropMetrics and has been installing and maintaining probes for four years.

The greatest benefit Gerk has seen from the soil moisture probes is the reduction in overwatering. “Before a farmer would go out and look at his neighbor’s field and if they were watering, he would water, too. It isn’t much of a science that way,” explains Gerk.

With the probes, moisture levels are monitored and sent to a user-specific account. When the amount of water in the soil dips below a desired level, it’s time to water.

Each probe from CropMetrics is inserted 3 feet deep with sensors at 4, 8, 12, 20 and 36 inches to measure the water intake by the roots. Some also measure nitrogen levels in the soil, like the Sentek probes that Gerk uses.

Only one probe is needed for each field and they are installed after planting and spraying and removed before harvest, so it is not a great hassle to implement a soil moisture monitoring system.

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All of the data collected from the sensors is automatically sent to a password-protected profile that can be accessed on a smartphone, tablet or computer. Information is kept current as the probe sends updated information every 30 minutes.



The soil tension probes used by Hortau require equipment like the box pictured to send information to growers. The data collected can be used to develop a more effective irrigation schedule.

Hortau offers a similar system that provides real-time data and a graphed-out response every 15 minutes. The probes vary from others by focusing more on soil tension rather than just a percentage of water.

The tension measure allows for a gauge of plant health by showing how easily water is being taken up by the roots. Alerts can be set to indicate if the ground is too dry or wet, which aids in developing a more beneficial watering schedule.

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