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SHOW ME THE DATA!

Empowering Conservation Champions with Innovative, Real-time Soil Metrics.

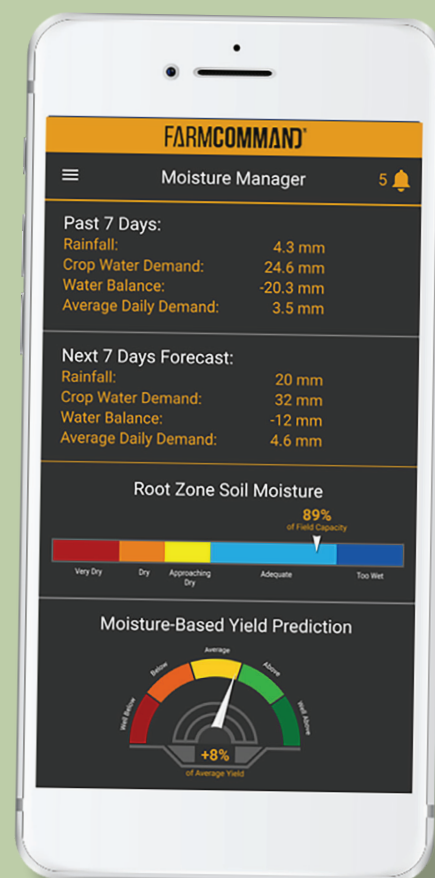
Minnesota and Wisconsin: Upper-Mississippi River Drainage Basin

Soil moisture and temperature are key drivers of agricultural production systems. These factors dictate planting schedules, crop development, and the timing of field operations. Under current climate prediction models, soils in the Midwest are expected to be exposed to extended, intermittent flash-drought conditions, as well as periods of more intense rainfall and flooding. In addition to the farm management obstacles magnified by these changes, water quality problems can be exacerbated by increased frequency of these high-intensity events.

Project Overview:

"Show Me the Data! Empowering Conservation Champions with Innovative, Real-time Soil Metrics" is a three-year, on-farm demonstration integrating remote sensing and soil sensors with the collection of soil health metrics. This information will aid farmers in making in-season management decisions based on real-time soil moisture and temperature data. Results will address growing management concerns among those challenged by extreme (*abundance or deficit*) precipitation events.

The purpose of this collaborative demonstration is to provide farmers with technology and comprehensive data to empower them to make effective decisions (e.g. when to plant or apply nutrients) while advancing the implementation of soil health management system (SHMS) principles. Access to real-time data helps farmers manage their farms toward a more resilient system, and gives them confidence in their decision-making.





SOIL HEALTH PRINCIPLES

- 1) Minimize Soil Disturbance
- 2) Maximize Soil Cover
- 3) Maximize Plant Diversity
- 4) Maximize Presence of Living Plants/Roots
- 5) Integrate Livestock

Demonstration Approach:

Soil probes were installed across Minnesota and Wisconsin on fifteen sets of paired fields. Each pair has soils with similar texture and land position. Sites were identified with varying management principles to quantify how infiltration, water holding capacity, soil trafficability, leaching potential, aggregate stability, and other soil properties critical to improving resiliency and reducing nutrient transport are influenced.

In addition to annual soil health and routine sample collection, a Farmers Edge technology subscription to in-field, soil temperature and moisture probe data was employed at each field to provide real-time data for each of the collaborating farmers.



FOR MORE INFORMATION CONTACT:

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PARTNERS & SPONSORS



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Sand County Foundation inspires and empowers a growing number of private landowners to ethically manage natural resources in their care, so future generations have clean and abundant water, healthy soil to support agriculture and forestry, plentiful habitat for wildlife and opportunities for outdoor recreation.

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