



JUNE 2025

SHOW ME THE DATA:

Building Resilient Farms with Soil Health

Facing Our Weather Challenges Together

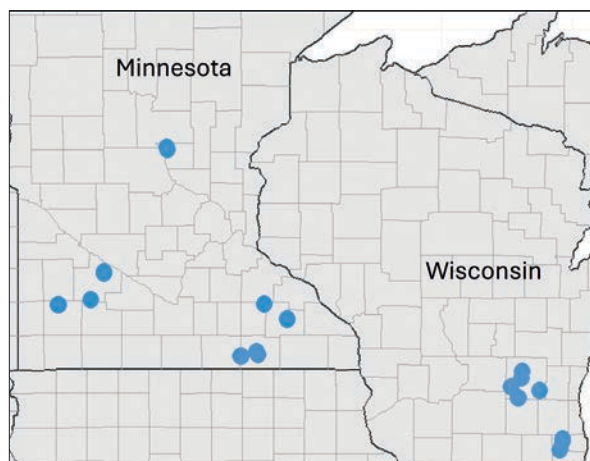
Farmers across Minnesota and Wisconsin know firsthand that the Midwest is seeing more intense rainfall and longer droughts – both tough on their fields and their bottom line. But there's good news: on-farm data has confirmed that **healthy soil is your farm's best defense!** It's key to bouncing back from extreme weather and keeping your land productive.

Real-World Results from Minnesota & Wisconsin Farms

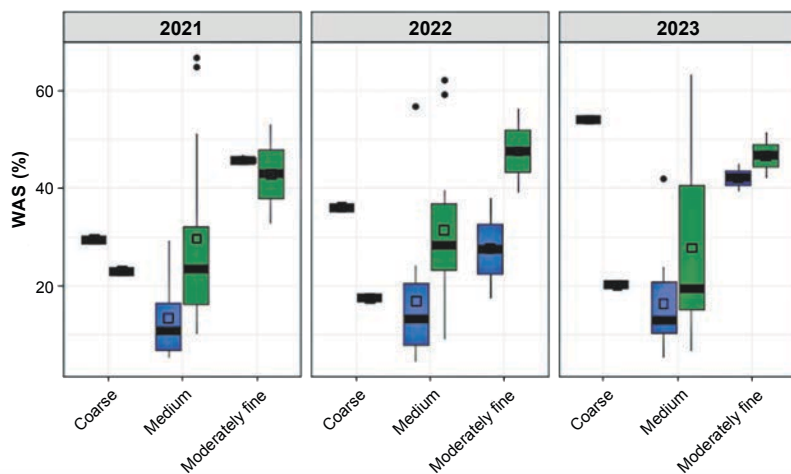
From 2021-2023, the Sand County Foundation partnered with **30 farmers across Minnesota and Wisconsin** for an on-farm demonstration project. We compared fields managed with traditional methods to fields using **soil health practices** such as:

- **Reduced or No-Till:** Minimizing soil disturbance and field passes.
- **Cover Crops:** Planting crops to prevent erosion, suppress weeds, and improve soil structure.
- **Crop Diversity:** Growing a variety of crops (to harvest or for cover) and extending rotations.

Working on active farms, we measured how management can influence soil health parameters and the soil's ability to infiltrate and store water. Each farmer had access to real-time soil moisture and temperature sensors in their fields to see the day-to-day impact, plus annual soil health samples.



Each point on the map represents paired farms in the study.



Traditional Management
Soil Health Management

Two of our collaborating farms (forming one pair) had sandy soil, four had moderately fine-textured soil (two pairs), and twelve pairs had medium-textured soil. Medium-textured soils responded more strongly to soil health management than coarse or moderately fine-textured soils. More than 15 soil properties were measured, and as an example of the results, wet aggregate stability (WAS) is depicted in the graphic to the left.

What we Discovered

1. Stronger Soil Structure = Better Fields!

Soil health management made soil aggregates more stable. Think of soil aggregates as tiny clumps that help create pore spaces. Increased aggregate stability means your soil is less likely to be damaged due to external forces or washed away with precipitation or wind. Strong aggregates can also handle farm equipment better, reducing soil compaction issues.

2. A Buzzing Underground World!

Fields with soil health management saw more active soil microbes, increased nitrogen mineralization, and higher carbon levels. These tiny workers are essential for breaking down organic matter and cycling nutrients.

3. Your Secret Weapon against Drought!

Soil health fields held more water, especially during dry spells. Your crops have more moisture available when they need it most, making them more resilient to drought.

4. The Power of "More Than One!"

The biggest benefits came when farmers used multiple soil health practices together (e.g., combining no-till with cover crops). They work even better as a team!

Why this Matters

These results confirm what many conservation-minded farmers have known: **adopting soil health practices leads to stronger, more resilient soil.** Your fields will be better at:

- **Handling excessive rainfall:** Improved infiltration means less standing water and runoff.
- **Surviving dry periods:** More water storage means crops stay healthier longer.
- **Building long-term fertility:** More carbon and active biology means healthier soil for years to come.

Every Farm is Unique

Your farm has its own unique soil, weather, and management history. These factors will influence how soil health practices work for you. It's about finding the right combination that fits *your* operation.

READY TO LEARN MORE?



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Sand County Foundation inspires and empowers a growing number of land owners and managers to ethically care for the land to sustain water resources, build healthy soil, enhance wildlife habitat, and support outdoor recreation.

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