# BENCHMARKING AND INTEGRATING SOIL HEALTH, WATER QUALITY AND CLIMATE-SMART FOOTPRINTS OF ILLINOIS SOYBEANS


## DR. ANDREW MARGENOT

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Dr. Margenot has more than a decade of experience in soil health and nutrient cycling research across agricultural systems. His research program at the Soils Lab, University of Illinois, evaluates processes in and management of soil health, water quality, and carbon sequestration. He believes soybeans have the potential to lead the way in conservation across the Illinois and larger Corn/Soybean Belt cropping systems. In his spare time, Dr. Margenot unwinds in his 8,000+ square-foot vegetable garden and is in search of heirloom soybeans to plant.

## ADDITIONAL RESEARCHERS

- **Heidi Allen,** *PhD level graduate student*, University of Illinois
- **Michael Douglass,** *Research Specialist*, University of Illinois
- **Dr. Talon Becker,** *Extension Educator, Commercial Agriculture*, University of Illinois

## TRIAL LOCATIONS

- **Ewing**
- **Monmouth**
- **Urbana**

## QUESTIONS THIS PROJECT WILL ADDRESS

- What are tangible metrics across the various soybean-growing environments in Illinois that demonstrate improvements to soil health?
- How do soil health practices correlate to quantifiable improvements in water quality, soil health indicators (biological, chemical, physical), nutrient utilization, GHG emissions and soil carbon sequestration?
- How do different cropping systems influence soybean's net carbon footprint and yield performance?


**YOUR ISA AGRONOMY TEAM CONTACT**

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## WHY ARE YOU DOING THIS RESEARCH

While farmers are curious about soil health, sustainability practices and carbon credit markets, they are also skeptical in part because of the lack of metrics and data. Because of the various cropping systems and growing environments in Illinois, farmers demand more than generalizations.

Quantifying how soil health practices improve soils, water and the environment can help move the needle on adoption. In addition, providing tangible metrics around nutrient fixation, carbon sequestration and GHG emissions can generate more trust in carbon markets.

Establishing these metrics can inspire more Illinois soybean farmers to adopt soil health practices, position the sustainability of Illinois soybeans in national and global markets, and lay the foundation for Illinois soybeans to capitalize on rapidly emerging carbon markets.

## GOALS OF THIS RESEARCH

This research project is designed to deliver hard, field-based data farmers can use to inform management decisions to achieve different outcomes.

Farmers will have a clearer view of how tillage and cover cropping practices interact across the different soil and climate regions of Illinois. This will give them insights into the potential trade-offs between soil health and yield based on tillage and cover crop practices, as well as understand when it makes economic sense to take advantage of carbon credit programs.

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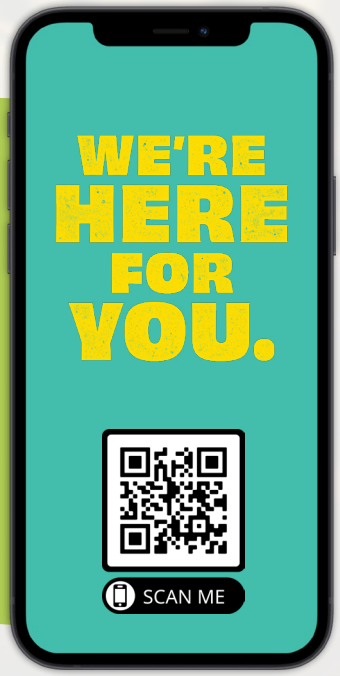
**See updates and learn more about this project, the research team and other projects at ILSoyAdvisor.com and @ILSoyAdvisor on Facebook and Twitter.**




Funded by the Illinois Soybean Association Checkoff Program.



The Illinois Soybean Association (ISA) checkoff and membership programs represent more than 43,000 soybean farmers in Illinois. The checkoff funds market development and utilization efforts while the membership program supports the government relations interests of Illinois soybean farmers at the local, state and national level through the Illinois Soybean Growers (ISG). ISA upholds the interests of Illinois soybean producers through promotion, advocacy and education with the vision of becoming a market leader in sustainable soybean production and profitability. For more information, visit the websites www.ilsoy.org and www.ilsoygrowers.com.

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