

Using Data-Driven Knowledge for Profitable Soybean Management Systems

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Principal Investigator

Shawn Conley, University of Wisconsin

Co-Principal Investigators

Joe McClure, Iowa Soybean Association

Maninder Singh, Michigan State University

Paul Esker, Pennsylvania State University

Laura Lindsey, Ohio State University

Seth Naeve, University of Nebraska

Laila Puntel, University of Nebraska

Overview of Project Objectives

This project addresses soybean management and the return-on-investment at the field level, including pre-plant pest management, seeding rates and costs, and other inputs. The goal is to develop a tool using three years of farmer information from the North Central region, as well as soil properties, weather and remote sensing data. Farmers will be able to use the tool to apply best management practices to maximize soybean yield and profit. Variability within fields will also be quantified to further increase farmer profit.

Key Results

The project team worked with farmers to collect local field data from 269 fields in 12 states over three years, amassing more than 10,000 field reports and images. This data serves as the ground truth for analysis based on satellite imagery. These remote-sensing images can detect potential problem areas within a field. They are also collecting data from more than 300 fields of between-season information.

The team is finalizing a new platform, Open Crop Manager, that combines scouting reports, field registration and production surveys. The platform also includes 32 pests, 38 diseases, 48 weeds and 28 abiotic issues, which will combine to help farmers make informed, field-level decisions to improve yield, efficiency, and profitability. The platform is scheduled to launch in early 2025, with a mobile application as well as off-line usability.

Benefit to Farmers

The development of this tool will prove significant value to farmers as they will better understand the impact of decisions made throughout the production cycle in terms of outcomes each year. They will also recognize the value of participating in such research to further promote the value of their inputs to agricultural research.

Links

[Using Data-Driven Knowledge for Profitable Soybean Management Systems](#)

USB National Soybean Checkoff Research Database

[NCSRP Project Explores Prescriptions for Best Management Practices](#)

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