Using Data-Driven Knowledge for Profitable Soybean Management Systems

Funding: $478,557

Principal Investigator
Shawn Conley, University of Wisconsin

Co-Principal Investigators
Paul Esker, Pennsylvania State University

Overview of Project Objectives
This agronomic and cropping systems project addresses soybean management issues and their 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 database tool with three years of farmer information from the North Central region, as well as soil properties, weather and remote sensing information included. The outcome includes development of an interactive tool that farmers can use to apply best management practices, based on actual farmer data, to maximize soybean yield and profit. A subset of selected farms will demonstrate the developed tool.

Key Results
The project leaders have worked with state collaborators to contact farmers for contribution to the project with their local field data, with a total of 135 fields scouted in eight states. This data will serve as the ground truth for subsequent analysis based on remote-sensing data. The team is finalizing a new platform that will link a scouting application with the production survey. An assigned team has supervised the data collection and acquired satellite and weather information for each field, each year. By the end of this project, the team will have a novel tool that uses self-reported, on-farm production practices with associated costs to identify management practices that can result in increased profit. A beta version of the online tool will be ready for validation at the end of the project.

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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