

Mapping Soybean Protein and Oil Quality in Farmer Fields

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Overview of project objectives

Attention to soybean seed quality is increasing among farmers, agronomists and commodity traders. Higher nutritional content of U.S. soybeans can help in marketing efforts and increase the economic value of each bushel. Measuring soybean protein and oil content used to require laboratory analysis of collected seed samples. Recent projects in Kansas and Iowa focused on calibrating near infrared (NIR) sensors to produce soybean quality maps in fields during soybean harvest. This project will develop a database to benchmark agronomic practices, soybean genetics, management and environmental conditions for soybean quality predictions at farmer field and regional levels. Results of this work will lead to large-scale improvements in soybean quality by helping soybean breeders, agronomists and farmers understand how genetics, soil and weather conditions, and management practices interact to control soybean yields as well as the quantities and qualities of protein, oil and other seed components under real field growing conditions.

Key results

The investigative team has collected more than 1,000 seed samples from approximately 100 fields across the North Central region. These were processed for protein and oil quality. The team has also collected approximately 250 soil samples and management information from these fields. Data is being amassed and analyzed in this first year. The team presented project goals and preliminary information at meetings and field days across the region.

Benefit to farmers

At the end of the project, the team expects to have the largest dataset that includes in-field variation of soybean quality at the farm scale, with approximately 500 fields across the North Central region. The dataset can provide relevant information to growers on the capacity to segregate quality at the field level and improve soybean profitability.

Links

[Mapping Soybean Protein and Oil Quality in Farmer Fields](#). *USB National Soybean Checkoff Research Database*