IOWA STATE UNIVERSITY
Department of Agronomy

2023 Iowa Nitrogen Initiative Trials

Help Improve Iowa's Nitrogen Fertilizer Recommendations

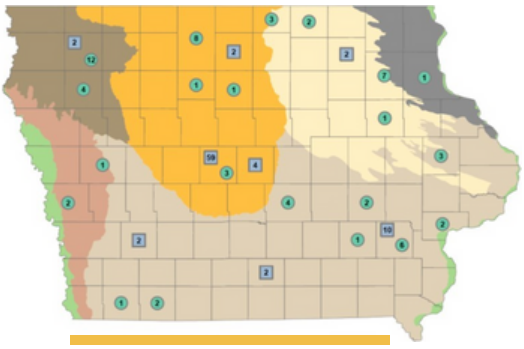
Iowa State University is recruiting farmers and certified crop advisers to help improve Iowa's nitrogen fertilizer recommendations to benefit the productivity, profitability, and environmental performance of Iowa agriculture. Participants will join a growing group of Iowa farmers who partner with ISU to better understand nitrogen managements on their own farms and other farms throughout the state.

Trial Details: Enhanced Learning Block™

Enhanced Learning Block™ (ELB) is a self-contained, complete management experiment used to test rates, products, planting population, and more. In this project, we are testing nitrogen rate. The goal of an ELB is to provide a formal testing environment within a field to determine whether a specific management practice is beneficial for your farm.

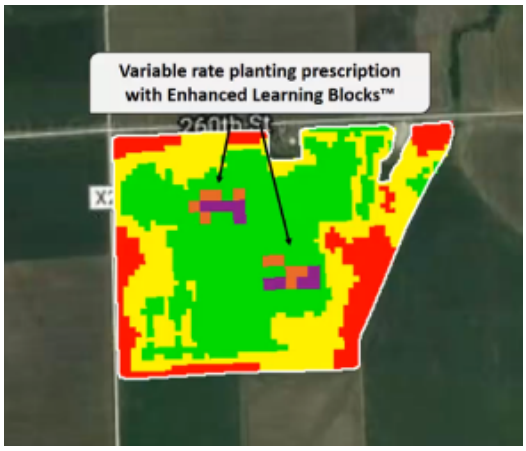
Trials are conducted in a small (2-5 acre) area within the field. The size is dependent on equipment size and direction of travel.

Treatments (rates) are replicated in a minimum of five unique plots and randomized within the trial area (see below). Other factors within the field (hybrid, crop protection), are kept constant. The rest of the field is farmed as usual.



2022 Research Trial Locations

In 2022, we conducted 150 trials across the state of Iowa. 67 trials, marked by green circles, were conducted in farmer fields; 83 were in ISU Research Farm fields. We aim to grow this number to 400 by 2024.



Grower Requirements

- First year corn (corn following soybeans) or corn on corn field.
- Combine equipped with a well-calibrated yield monitor.
- Ability to apply (yourself or through your preferred retailer) a variable rate nitrogen prescription. The rest of the field can be flat rate or variable rate.
- Ability to supply at least one year of past corn yield to inform trial placement.
- Ability to supply current year detailed cropping plans (planting data, crop protection, nutrient applications, yield data, etc.).
- All other factors in the 2-5 acre trial area are to be kept constant (same hybrid, no other variation in nutrient applications rates, crop protection).
- Permission granted for project personnel on farm throughout season to collect soil samples around planting as well as plant and soil samples and drone imagery of fields around V6, R1, and R5 growth stages. Project personnel will coordinate all field visits with grower prior to arriving, by phone or text.

Benefits

- Understand the optimal nitrogen rate for low productivity and high productivity environments on your own fields.
- Facilitate broader knowledge creation and assist Iowa State University with the improvement of nitrogen fertilizer recommendations, including the development of new tools for field-specific and year-specific nitrogen fertilizer recommendations.
- At the end of the season, view results from your trials in the context of all other trials in the project, covering different locations and management systems.
- Minimal disruption to your operation: use your own preferred N product, help choose the N rates to be tested, apply N in fall or spring.
- Growers choosing a zero N rate trial will be compensated for yield loss at a flat rate of $600 per trial. Zero N (no fall, spring, or manure) is critical to determine the soil N supplying capacity.
- **All data will remain confidential at a county or cropping district scale.**

The Iowa Nitrogen Initiative

The Iowa Nitrogen Initiative is a private-public partnership with a vision to provide Iowans with the best nitrogen science in the world for the benefit of productivity, profitability, and environmental performance.

Interested in Participating?

If you'd like to discuss including your field in the trials with project personnel, visit https://bit.ly/N_trials to submit your information.

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