



Nebraska On-Farm Research Network Maize-N Sidedress Recommendation vs. Grower's Choice Sidedress Recommendation

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Objective: Evaluate Maize-N as a tool to recommend in-season N rates.

Rationale: Applying a portion of total N fertilizer during the growing season has been shown to improve nitrogen use efficiency. There are a number of tools available for recommending in-season N rates. This project focus is on evaluating Maize-N as a tool for in-season N recommendation rates. Maize-N is a computer program developed at UNL that simulates fertilizer requirement for corn. The estimation of N fertilizer requirement in Maize-N is based on user input information on the current corn crop, last season crop, tillage, crop residue management, basic soil properties, fertilizer management, and long-term weather data of the field. The program first simulates corn yield potential and its year to year variation. It then simulates mineral N released from mineralization of soil organic matter, crop residues, and manures. Finally, it estimates the economically optimal N rate of fertilizer to apply. Learn more about Maize-N here: <http://hybridmaize.unl.edu/overview> .

Procedure: Sidedress application can be an especially efficient N management component if pre-plant application does not exceed 75 lb N/acre. This should supply adequate N until sidedress application while leaving a significant amount of N to be applied in-season. For help in determining the Maize-N recommendation for your field, please contact Laura Thompson (laura.thompson@unl.edu or 402-245-2224). Maize-N can be purchased for \$35.00 from the UNL marketplace (<http://marketplace.unl.edu/nutechmarketplace/software/maize-n.html>). Long term weather files required for Maize-N for a location near you can also be obtained by contacting Laura Thompson. This trial does not require a guidance system or yield mapping capabilities but these are preferred.

The Maize-N recommended rate is compared to the grower determined in-season N rate. The two treatments in these trials are:

Treatment 1: Maize-N Sidedress Rate

Treatment 2: Producer Sidedress Rate (This is a rate determined by the producer. A number of different strategies may be used to determine this rate such as the pre-sidedress nitrate test, UNL N recommendation algorithm, or an N rate determined by another available model or tool.)

Treatment Design: The paired comparison design is used for this trial. A total of 7 replications should be implemented and harvested. The same hybrid and management practices (other than N) should be used across the entire study area.

Replication	N Application	Harvest
Rep 1	Treatment 1: Maize-N sidedress recommendation	← Record Yield
	Treatment 2: Producer's sidedress N recommendation	← Record Yield
Rep 2	Treatment 2: Producer's sidedress N recommendation	← Record Yield
	Treatment 1: Maize-N sidedress recommendation	← Record Yield
Rep 3	Treatment 1: Maize-N sidedress recommendation	← Record Yield
	Treatment 2: Producer's sidedress N recommendation	← Record Yield
Rep 4	Treatment 2: Producer's sidedress N recommendation	← Record Yield
	Treatment 1: Maize-N sidedress recommendation	← Record Yield
Rep 5	Treatment 1: Maize-N sidedress recommendation	← Record Yield
	Treatment 2: Producer's sidedress N recommendation	← Record Yield
Rep 6	Treatment 2: Producer's sidedress N recommendation	← Record Yield
	Treatment 1: Maize-N sidedress recommendation	← Record Yield
Rep 7	Treatment 1: Maize-N sidedress recommendation	← Record Yield
	Treatment 2: Producer's sidedress N recommendation	← Record Yield

Grower Requirements:

1. Flag or **mark** GPS location of each treatment.
2. Provide all necessary **inputs** for crop production.
3. Complete a **background** agronomic form about site and practices.
4. Collect **yield data** and **grain moisture** with weigh wagon or yield monitor. If using yield monitor, please designate a separate “load” for each treatment and set up separate “products” names for each treatment harvested. Yield monitor must be **well calibrated**. Contact UNL Extension if assistance with this process is needed (visit <http://cropwatch.unl.edu/farmresearch> for contact info).
5. Collect stand counts at harvest. Each treatment in all replications should have a stand count recorded. It is recommended that at least 3 counts be averaged together for each reported stand count.
6. Submit harvest data to UNL Extension within 30 days of harvest or by Dec. 15 of the harvest year.
7. Allow UNL Extension to use submitted and collected data for research, educational, and informational purposes.

Nebraska On-Farm Research Network will:

1. Provide technical assistance in setting up replicated and randomized experimental design.
2. Provide assistance upon request with treatment implementation, flagging, stand counts, stalk rot tests, and recording yield.
3. Analyze raw data using statistical analysis and provide this information to the grower.

For assistance with studies, please contact Laura Thompson: laura.thompson@unl.edu or 402-245-2224
Or your local Extension Educator

Disclaimer: The Nebraska On-Farm Research Network does not endorse the use of products tested in on-farm replicated strip trials. While treatments are replicated within trials and may be replicated across multiple sites under various conditions, your individual results may vary.

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