



Nebraska On-Farm Research Network

Maize-N Corn Nitrogen Recommendation vs. Producer Nitrogen Recommendation – Pre-Plant

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Objective: Verify the UNL developed Maize-N nitrogen recommendation for corn tool by comparing it to the producer's current N recommendation strategy.

Rationale: 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/maizen.shtml>.

Procedure: The two treatments in this trial are:

Treatment 1: Maize-N N recommendation

Treatment 2: Producer's N recommendation

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.

Treatment Design: With two treatments for this trial we are able to use the paired comparison design below. 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.

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.
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.

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

For assistance with studies, please contact Laura Thompson: laura.thompson@unl.edu or 402-624-8033
Or your local educator

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