

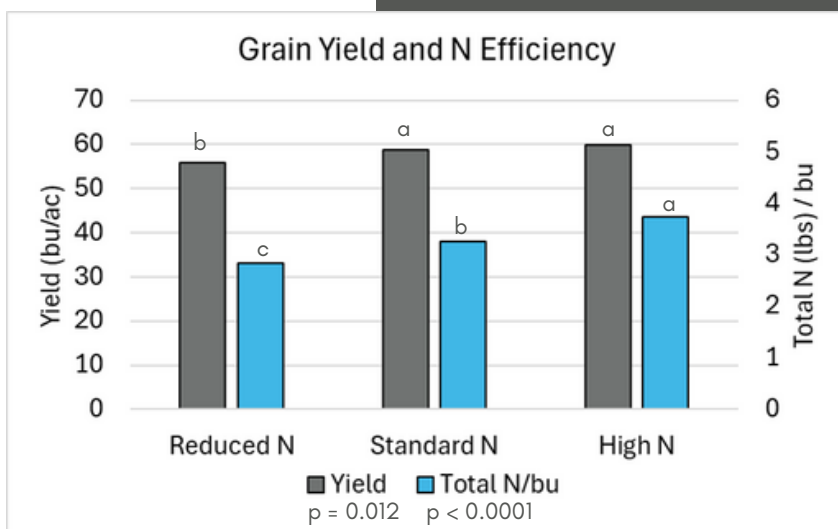
# Nitrogen Rate Trial NR\_18

## Site Info

**Trial ID:** NR\_18  
**Rural Municipality:** Brokenhead  
**Residual N (0-24'')**: 43 lbs./ac  
**Seeding Date:** May 9, 2025  
**Seeding Equipment:** Bourgault 3820  
 Air Planter  
**Variety:** L356PC  
**Harvest Date:** Aug 30, 2025

## Nitrogen Application

**Source:** Urea, Ammonium Sulfate, MAP  
**Placement:** Mid-Row Band  
**Timing:** Seeding



Within each data type, treatments with different lowercase letters are significantly different at 95% confidence level ( $p < 0.05$ ). Data types with no lowercase letters listed indicate an insignificant treatment effect.

## Results Summary

**Plant Establishment:** N Rate had no effect on plant establishment in this trial

**Tissue N:** There was a significant decrease in tissue N with the reduced N rate treatment relative to the standard treatment, but no significant difference in tissue N between the standard and high N rate treatments.

**Grain Yield:** Yield was significantly decreased by the low N rate treatment, compared to the standard and high N rate treatments. However, the reduced N rate improved N use efficiency, utilizing 2.85 lbs N to produce one bushel of grain yield compared to 3.26 lbs N/bu and 3.75 lbs N/bu utilized by standard and high rates, respectively.

**Profitability:** The reduced N rate treatment lowered costs, however also significantly lowered yields worth approximately \$15/ac relative to the farm standard treatment. The high N rate treatment did not significantly increase yield, cutting profit by \$22/ac compared to the standard.

Treatment	Fertilizer N Applied	Total N (Soil + Fert)	Plant Counts at 4-leaf	Tissue N at Bolting	Grain Moisture
	<i>Lbs. N/ac</i>	<i>Lbs. N/ac</i>	<i>plants/ft<sup>2</sup></i>	<i>%</i>	<i>%</i>
Reduced N	116	159	9.85	5.28 <sup>b</sup>	7.80
Standard N	148	191	10.55	5.68 <sup>a</sup>	8.40
High N	181	224	10.15	5.49 <sup>ab</sup>	8.28
	<i>p-value</i>		0.220	0.050	0.680

# Nitrogen Rate Trial NR\_18 Continued



## NR\_18 Weather

	Apr	May	June	July	Aug	Sept	Total
Rainfall (mm)	13	23.5	29.8	29.1	116.8	37	249.2
Avg Daily Temp (°C)	3.85	14.3	17.21	19.37	19.49	16	

## NR\_18 Economic Analysis

N Rate	Mean yield (bu/ac)	N Fert Cost <sup>1</sup>	Change in Profit from Farm Standard <sup>2</sup>
116 lb/ac	55.90 <sup>b</sup>	\$79/ac	-\$15/ac
148 lb/ac	58.69 <sup>a</sup>	\$101/ac	-
181 lb/ac	59.79 <sup>a</sup>	\$123/ac	-\$22/ac
P-value	0.012		
CV	3.62		

<sup>1</sup> Based on 2025 MB Cost of Production: estimated cost of urea ~ \$690/mt N, \$0.68/lb N

<sup>2</sup> Change in profit is calculated as the difference in grain sales income (based on estimated canola sale price of \$13.25/bu) and treatment costs, relative to the standard farm practice. Yields were not significantly different between standard and high rates, therefore there is no difference in grain sales income.



Agronomic Support for this Trial  
Provided by: