



# Wheat Enhanced Efficiency Fertilizer Usage

**Trial ID: 2023-WN01 — R.M. of Brokenhead**

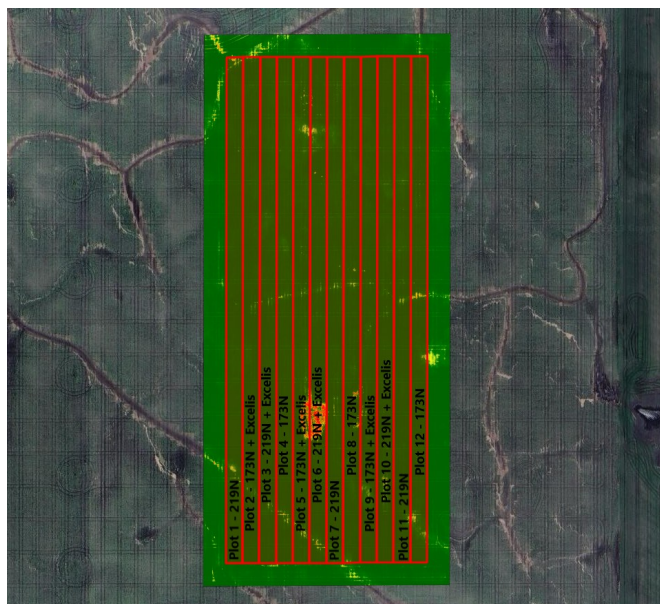
**Objective:** The purpose of this project is to quantify the agronomic and economic impacts of an enhanced efficiency fertilizer usage on wheat for yield and grain quality.

**Summary:** There was no significant yield difference between the treatments. As a result, there was a decrease in profit equivalent to the increase in the use of Excelis Maxx in addition to the regular fertilizer input.

## Trial Information

<b>Treatment</b>	Full N vs. Reduced N vs. Full N + Excelis Maxx vs. Reduced N + Excelis Maxx
<b>Soil Properties (0-6")</b>	3N 7P 285K
<b>Soil Texture</b>	Fine Loams
<b>Fertilizer Application</b>	219N 53P 10K
<b>Previous Crop</b>	Sunflower
<b>Tillage</b>	Conventional Tillage
<b>Seeding Equipment</b>	60' Disc Drill
<b>Seeding Date</b>	May 04
<b>Seeding Rate</b>	95 lbs/ac
<b>Variety</b>	AAC Starbuck VB
<b>Row Spacing</b>	10"
<b>Harvest Date</b>	August 20

## NDVI Imagery July 18



## Wheat Response

	Plants/ ft <sup>2</sup>	Protein (%)	TWT (kg/hL)	Falling Number	Grade
<b>Full N</b>	25	15.4	66	320	1
<b>Reduced N</b>	20	14.7	67	284	1
<b>Full N + Excelis Maxx</b>	22	15.2	65	285	1
<b>Reduced N + Excelis Maxx</b>	24	14.8	67	290	1

## Precipitation<sup>†</sup> (mm)

	May	June	July	Aug	Cumulative
<b>Rainfall</b>	8	106	50	22	<b>186</b>
<b>Normal</b>	58	88	87	76	<b>309</b>
<b>% Normal</b>	14%	121%	57%	29%	<b>60%</b>

<sup>†</sup>Growing season precipitation (mm)

## Overall Yield & Economics

	Mean (bu/ac)	Cost <sup>†</sup>	Change in Profit/ac
<b>Full N</b>	83.9	\$207/ac	-\$45.00/ac
<b>Reduced N</b>	86.3	\$162/ac	+\$45.00/ac
<b>Full N + Excelis Maxx</b>	84.5	\$207+19.70/ac	-\$64.70/ac
<b>Reduced N + Excelis Maxx</b>	83.8	\$162+15.60/ac	-\$15.60/ac
<b>P-Value</b>	0.1397	<b>Economics: Because yields were not significantly different, there is no increased income to offset the increase in price for the additional nitrogen and EFF use. Profit/ac declines by the cost of the increased nitrogen and enhanced efficiency fertilizer usage.</b>	
<b>CV</b>	11.87%		
<b>Significance</b>	No		

<sup>†</sup>Costs based on May 2023 price of 46-0-0 at \$960/tonne and EFF at \$93/tonne.



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