Wheat Enhanced Efficiency Fertilizer Usage

Trial ID: 2022-WN01 — R.M. of North Norfolk

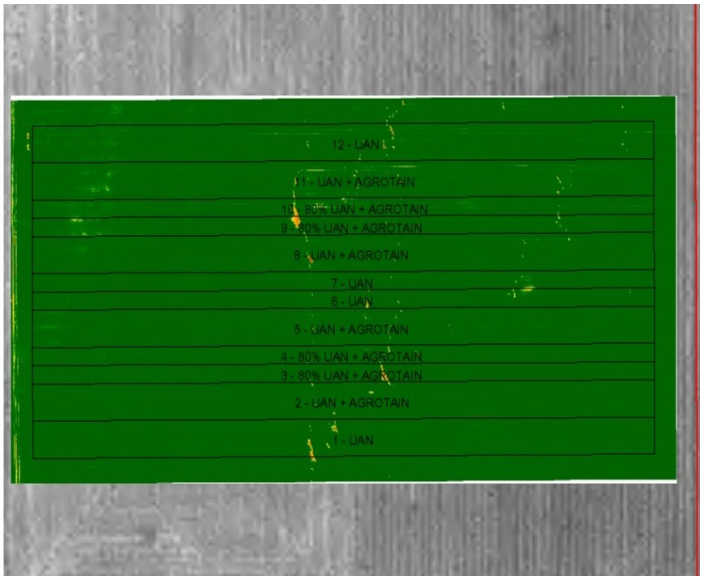
Objective: The purpose of this project is to quantify the agronomic and economic impacts of an enhanced efficiency fertilizer usage on wheat for yield and grain quality.

Summary: There was no significant yield difference between the treatments. As a result, there was a decrease in profit equivalent to the increase in fertilizer costs above the farmer's normal nitrogen practice.

Trial Information

Treatment	UAN vs. UAN+Agrotain @ 80% vs. UAN+Agrotain @ 100%
Soil Properties (0-6")	35N 16P 283K
Soil Texture	Fine Loams
Fertilizer Application	114N 37P 8S
Previous Crop	Canola
Tillage	Zero Till
Seeding Equipment	55' Air Drill
Seeding Date	May 16
Seeding Rate	120 lbs/ac
Variety	Bolles
Row Spacing	7.5"
Harvest Date	August 29

NDVI Imagery July 24



Wheat Response

	Plants/ ft²	Protein (%)	TWT (kg/hL)	Falling Number	Grade
UAN	19	14.0	74	369	Feed
UAN+Ag 80%	19	15.5	74	365	Feed
UAN+Ag 100%	19	14.3	74	358	3.0

Precipitation† (mm)

	May	June	July	Aug	Total
Rainfall	140	140	67	56	**403**
Normal	50	71	65	65	**250**
% Normal	282%	198%	102%	86%	**161%**

†Growing season precipitation (mm) - May 01—Aug 15

Overall Yield & Economics

	Mean (bu/ac)	Cost†	Change in Profit/ac††
UAN	67.8	$90/ac	$0/ac
UAN+Agrotain @ 80%	73.5	$81/ac	+$9/ac
UAN+Agrotain @ 100%	60.3	$101/ac	-$11/ac
P-Value	0.1397	**Economics: Since yields were not significantly different, the UAN+Agrotain @ 80% rate of N, being the least expensive option, is the most profitable compared to the other two treatments.**	
CV	11.87%		
Significance	**No**		

†Based on Fall 2021 cost of UAN at $0.79/lb N and Agrotain Advanced at $55/litre.
††In future, an additional treatment of UAN at 80% rate of N should be added to compare

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