

Soybean Single Inoculant Trial

Trial ID: 2023-S1IN03 – R.M. of Hanover

Objective: Quantify the agronomic impacts of seed-applied inoculant (single inoculation) vs. no inoculant in soybean fields.

Summary: Nodulation was similar between treatments and agronomically sufficient. There was no significant yield difference between soybeans with and without a single inoculant. Due to the lack of yield response, there was a decrease in profit/ac in the inoculated area of the trial, equivalent to the cost of the seed-applied inoculant.

Trial Information

Treatment	1x Signum Soybean (liquid)
Last Soybean Crop	2019
Soybean History	5+ year history
Soil Texture	Clay
Previous Crop	Canola
Tillage	Conventional
Seeding Date	May 16
Variety	S007-A2XS
Seeding Rate	208 000 seeds/ac
Row Spacing	10"
Plant Stand @ V2	183 000 plants/ac
Harvest Date	September 27

Precipitation (mm)

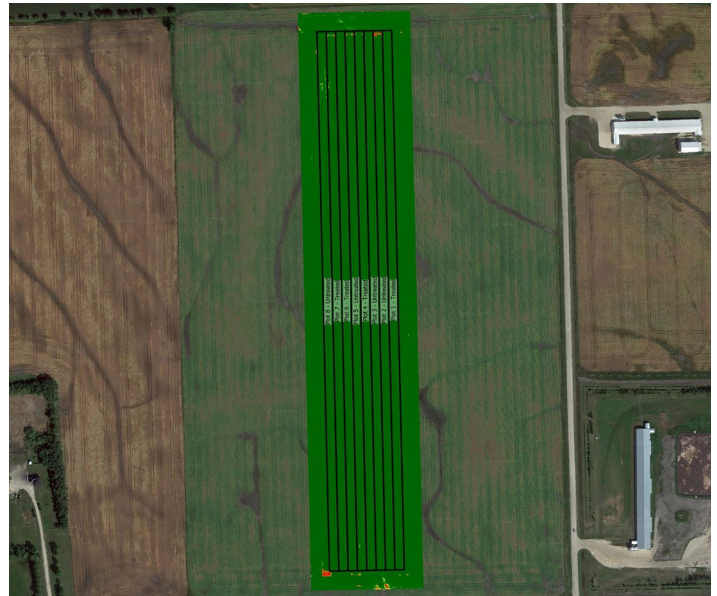
	May	June	July	Aug	Total
Rainfall	33.4	33.6	62	49.4	179
Normal	57.5	88	70	75.8	291
% Norm	58%	38%	90%	65%	61%

Nodulation †

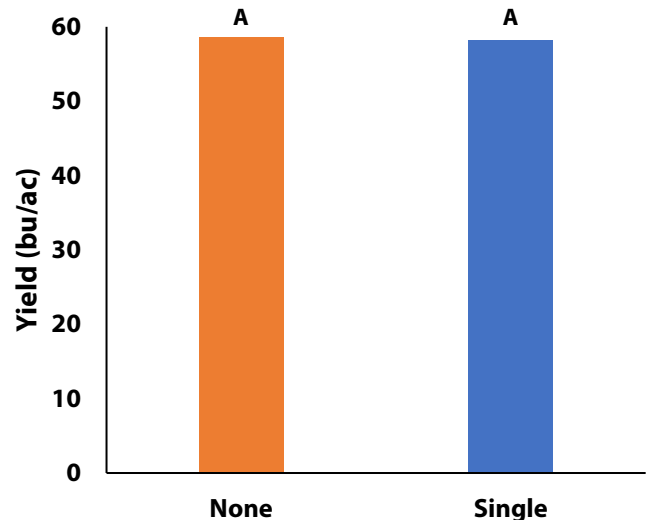
	Average nodulation rating @ R2
Single	3.2 A
None	3.2 A

† 0 = no nodules, 1 = Poor (<5/plant), 2 = Fair (<10/plant), 3 = Good (<20/plant), 4 = Excellent (>20/plant). Averages followed by different letters are significantly different at $\alpha=0.05$

NDVI Field Image August 10



Yield by Treatment





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Overall Yield & Economics

	Mean (bu/ac)	Cost †	Change in Profit ††
Single Inoculant	58.2	\$3/ac	-\$3/ac
Untreated	58.6		
Yield Difference	-0.4		
P-Value	0.485		
CV	1.1%		
Significance	No	Economic	No

† Based on an estimated cost for on-seed inoculant

†† Because yields were not significantly different, there was no increased income to offset the cost of the single inoculant



Early in the season at V2, yellow patches were noted in some areas of the field. Comparing roots to a healthy plant, it was observed that there was more early-season nodulation with greener, healthier looking plants. These patches occurred throughout the field regardless of treatment. As the season progressed, plant colouration evened out and nodulation at flowering was similar among inoculation treatments.