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# Soybean Single Inoculant Trial

**Trial ID:** 2023-S1IN04 – R.M. of Brokenhead

**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

<b>Treatment</b>	1x Nodulator (liquid)
<b>Last Soybean Crop</b>	2021
<b>Soybean History</b>	5+ year history
<b>Soil Texture</b>	Very Fine Sandy Loam
<b>Previous Crop</b>	Fall Rye
<b>Tillage</b>	Conventional
<b>Seeding Date</b>	June 4
<b>Variety</b>	OAC Prudence
<b>Seeding Rate</b>	260 000 seeds/ac
<b>Row Spacing</b>	10"
<b>Plant Stand @ V2</b>	160 000 plants/ac
<b>Harvest Date</b>	November 13

## Precipitation (mm)

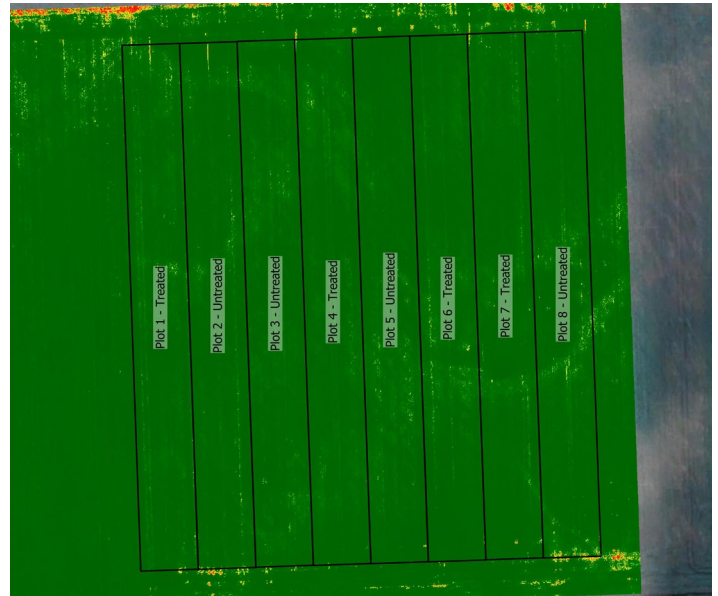
	May	June	July	Aug	Total
<b>Rainfall</b>	53.6	57.1	53	39	203
<b>Normal</b>	54	89.9	73	72.6	290
<b>% Norm</b>	99%	64%	73%	54%	70%

## Nodulation†

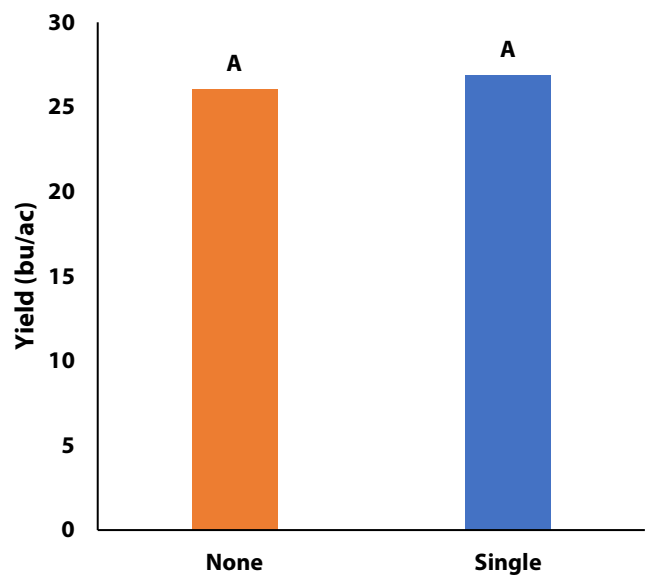
	Average nodulation rating @ R2
<b>Single</b>	3.5 A
<b>None</b>	3.8 A

† 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 14



## Yield by Treatment





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### Overall Yield & Economics

	Mean (bu/ac)	Cost †	Change in Profit ††
Single Inoculant	26.9	\$3/ac	-\$3/ac
Untreated	26.1		
Yield Difference	0.8		
P-Value	0.1557		
CV	3.5%		
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