Soybean Double Inoculant Trial

Trial ID: 2023-S2IN02 – R.M. of Dauphin

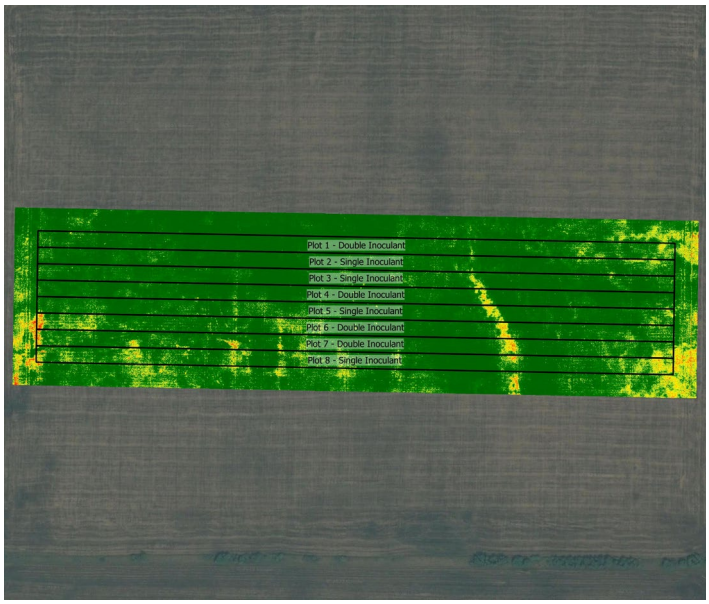
Objective: Quantify the agronomic and economic impacts of seed-applied inoculant (single inoculation) vs. seed-applied plus in-furrow inoculant (double inoculation) in soybeans. This trial requires a minimum field history of 2 previous soybean crops.

Summary: Nodulation ratings were similar between treatments and agronomically sufficient. There was no significant yield difference between single and double inoculation. Due to the lack of yield response, there was a decrease in profit/ac with double inoculation, equivalent to the cost of the in-furrow inoculant.

Trial Information

Treatments	1x Nodulator (liquid on-seed)1x Nodulator (liquid on-seed) + 5lbs/ac Nodulator (granular)
Last Soybean Crop	2019
Soybean History	2-year history
Soil Texture	Clay
Previous Crop	Canola
Tillage	Zero Till
Seeding Date	May 20
Variety	S003-R5X
Seeding Rate	175 000 seeds/ac
Row Spacing	10”
Plant Stand @ V4	201 000 plants/ac
Harvest Date	October 19

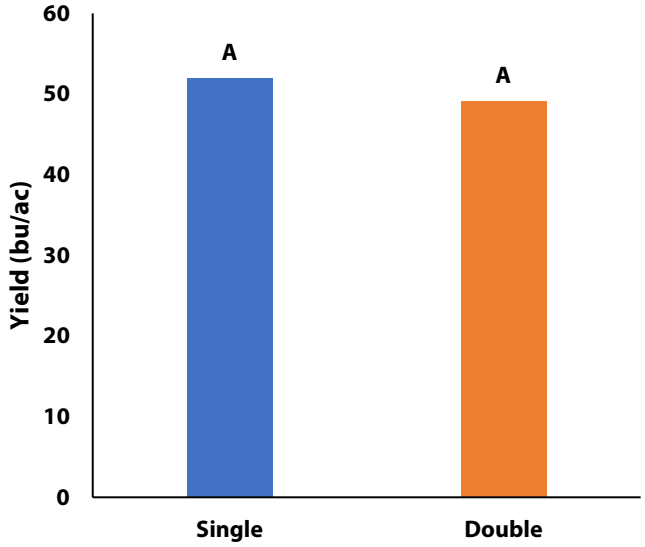
NDVI Field Image August 7



Precipitation (mm)

	May	June	July	Aug	Total
Rainfall	88.2	24.5	13	63.7	190
Normal	54.3	86.7	73	63.3	278
% Norm	162%	28%	18%	101%	68%

Yield by Treatment



Nodulation ǂ

	Average Nodulation Rating @ R2
Double	3.8 A
Single	3.7 A

ǂ 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 α =0.05

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Soybean Double Inoculant Trial

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Overall Yield & Economics

	Mean (bu/ac)	Cost ǂ	Change in Profit ǂǂ
Double Inoculant	49.1	$13/ac	-$10/ac
Single Inoculant	52.0	$3/ac	
Yield Difference	-2.9		
P-Value	0.1345		
CV	6.1%		
Significance	**No**	**Economic**	**No**

ǂ Based on an estimated cost for on-seed + granular in-furrow vs. on-seed only

ǂ ǂ Because yields were not significantly different, there is no increased income with the double inoculant to offset the increase in price

Additional Observations

A fairly severe hailstorm hit this trial field on June 28 when the soybeans were at early R1 (flowering). Hail assessments were made the following day on June 29 and 66-100% defoliation was estimated with 20-40% stem breakage on average. Damage was noted to be fairly consistent throughout the field. Plant regrowth in this field was impressive.

Above: Soybeans on June 29, one day after the hailstorm. Below: Soybeans on August 21. Plants were short with a thick canopy of leaves and branches.