Pea Double Inoculant Trial

Trial ID: 2021-P2IN01 – R.M. of Sifton

Objective: Quantify the agronomic and economic impacts of double vs. single inoculating field peas.

Summary: Nodulation ratings were very similar between treatments and indicated nodulation was sufficient for peas that were single inoculated, and those that were double inoculated. There was no significant yield difference between inoculant treatments. Due to the lack of yield response with granular inoculant in addition to on-seed inoculant, there was a decrease in profit/ac, equivalent to the cost of the in-furrow inoculant application.

Trial Information

Treatment	Liquid On-Seed vs. Liquid On-Seed with 1x Granular
Last Pea Crop	No Previous Pea Crop
Pea History	No Pea History
Soil Texture	Loamy Sand
Previous Crop	Canola
Tillage	Conventional
Seeding Date	April 29
Variety	AAC Chrome
Seeding Rate	180 lbs/ac
Row Spacing	10″
Plant Stand @ V4	182 000 plants/ac
Harvest Date	August 5

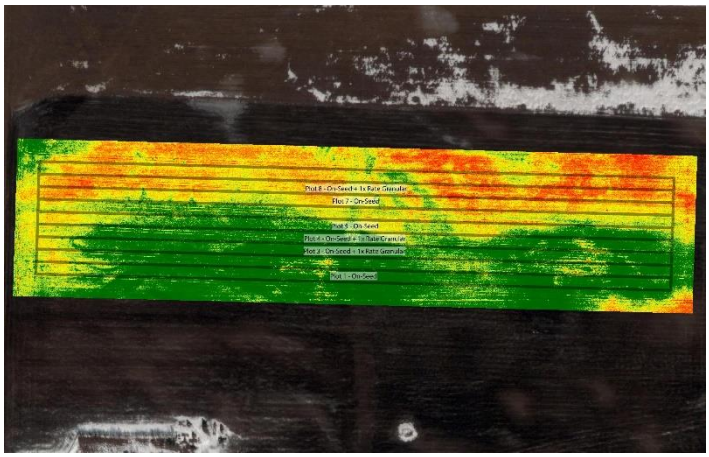
Precipitation (mm)

	May	Jun	Jul	Aug	Total
Rainfall	23.3	88.7	34.4	135	281.6
Normal	48	75.6	64.5	57.8	245.9
% Normal	49%	117%	53%	234%	115%

Early season Nodulation Observations

Nodulation was developing well early in the season. Image (left) captured on June 1, 2021, when the peas were at V3-4.

NDVI & RGB Field Images July 12



Nodulation†

	Average Nodulation Rating @ R2
Double	3.8
Single	3.7

† 0 = no nodules or nodules with green/white colour, 1 = <3 clusters of nodules, 3 = 3-5 clusters of predominantly pink nodules, 5 = >5 clusters of pink nodules

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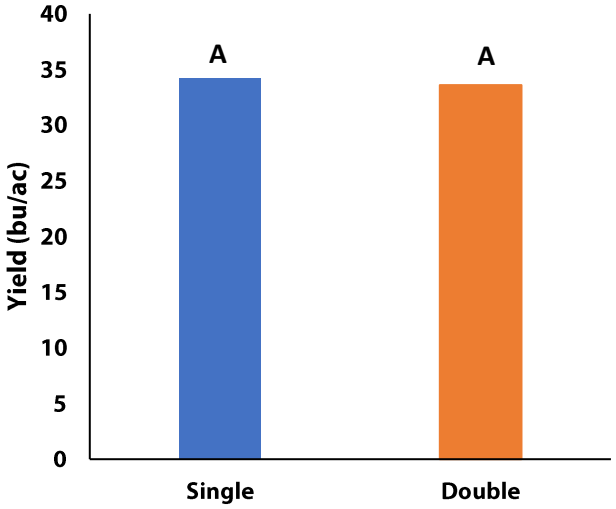
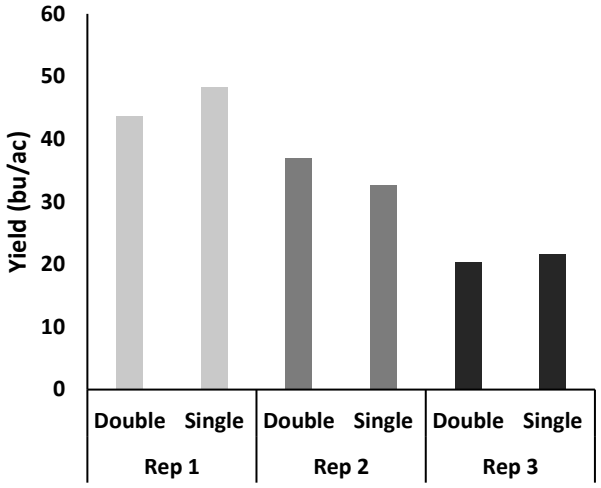
Yield by Treatment



Yield by Rep



Yield by rep is not useful for determining overall treatment effects. However, in this case where we have high variability across the trial (as seen in the NDVI image above), yield by rep is informative to determine whether data should be included or excluded from over treatment comparisons. In this case, yields from strips within reps are quite similar, and the majority of the variability is across replicates, rather than treatment strips within replicates. Thus, we determined yield data for all strips could be included in the overall analysis of treatment effects.

Overall Yield & Economics

	Mean (bu/ac)	Cost†	Change in Profit/ac††
Double Inoculant	33.6	$13/ac	-$10/ac
Single Inoculant	34.2	$3/ac	
P-Value	0.8458		
CV	34%		
Significance	**No**	**Economic**	**No**

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

†† Because yields were not significantly different, there is no increased income with the double inoculant to offset the increase in price. Profit/ac decreases by the increased cost as a result.

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