

On-Farm Network Appreciation Event

Preliminary 2018 Research Results

December 17, 2018



on-farm network

PARTICIPATORY • PRECISE • PROACTIVE

2018 Trial List

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Important Information to Interpret On-Farm Network Single Page Reports

On-Farm Network field trials are set up using a randomized complete block design (RCBD). An analysis of Variance (ANOVA) has been conducted on all 2018 trials, treating site as a fixed effect and replicate (block) as a random effect.

All single page reports and summaries within this document are based on a single site analysis, i.e., site years are not combined. Therefore, the effect of treatment across site years should not be interpreted until a combined analysis has been presented.

Definitions

Confidence level: A 95% confidence level is used within our trials. This means we can say with 95% certainty that we are certain of the outcome.

P-value: A calculated probability used in statistics to either accept or reject the null hypothesis. The null hypothesis for our trials is that there is no difference between treatment means. A p-value of less than 0.05 suggests that there is enough evidence to reject the null hypothesis, meaning there is a significant difference between treatment means. If the p-value is greater than 0.05, then there is not enough evidence to conclude that the observed treatment differences are due to our applied treatment at a 95% confidence level.

Coefficient of Variation (CV): The statistical measure of random variation in a trial. The lower the value, the less variable the data.

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Wheat Fusarium Head Blight Timing Trial

Table 1: Wheat Fusarium Head Blight Timing trial summary at 4 on-farm trials in Central Manitoba in 2018.

Trial ID	Rural Municipality	Variety	Yield			CV	P-Value	Statistically Significant @ 95%
			Late	Rec'd	Untreated			
			bu/ac			%		
WFHB01	Morris	Rowyn	84.6 a	83.7 ab	80.8 b	2.8	0.0382	Yes
WFHB02	Louise	Brandon	87.5	86.2	84.4	5.6	0.3459	No
WFHB03	Dufferin	Brandon	60.8	58.4		3.4	0.1627	No
WFHB04	Grey	Brandon	65.0	64.9	62.5	3.4	0.3277	No

Table 2: Wheat quality summary for Fusarium Head Blight Timing treatments

TrialID	Treatment	Protein	Don	Falling Number	TWT
WFHB01	Recommended	14.4	< 0.3	> 360	404
	Late	14.5	< 0.3	> 360	406
	Untreated	14.5	< 0.3	> 360	403
WFHB02	Recommended	15.4	< 0.3	> 360	403
	Late	15.5	< 0.3	> 360	404
	Untreated	15.7	0.3	> 360	403
WFHB03	Recommended	16.2	< 0.3	> 360	411
	Late	15.8	< 0.3	> 360	412
WFHB04	Recommended	14.4	< 0.3	> 360	412
	Late	14.3	< 0.3	> 360	412
	Untreated	14.7	< 0.3	> 360	412

The objective of this study was to quantify the impact of fusarium head blight on the quality of harvested grain by comparing the farmers normal fungicide application at recommended rate and timing to a fungicide application 3 to 5 days later and an untreated control.

Wheat Fusarium Head Blight Fungicide Timing



Trial ID: 2018-WFHB01 – R.M. of Morris

Objective: Quantify the impact of fusarium head blight on the quality of harvested grain by comparing the farmers normal fungicide application at recommended rate and timing to a fungicide application 3 to 5 days later.

TRIAL INFORMATION

Treatment	Rec'd timing vs. 3-5 days later vs. Untreated
Rural Municipality	Morris
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Conventional
Seeding Date	April 26, 2018
Variety	Rowyn
Row Spacing	7.5"
Seeding Rate	175 lbs/ac
Fungicide Product	Caramba
Rec'd App Date	June 25, 2018
Rec'd App Timing	20% flower
3-5 Day Later App Date	June 27, 2018
Harvest Date	August 10, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	28	85	38	27
Normal	54	86	72	65

[†] Growing season precipitation (mm)

WHEAT QUALITY

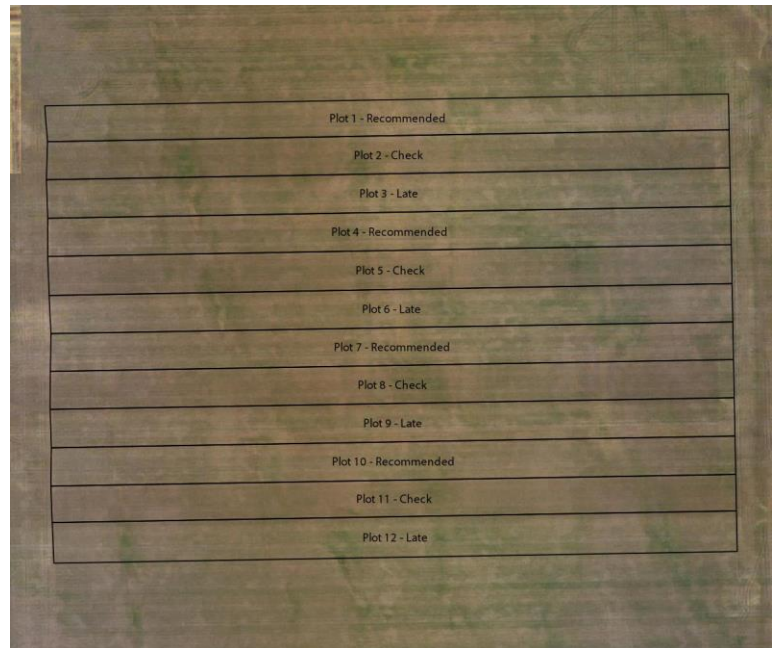
	Protein	Don	Test Weight	Falling Number
Rec'd Timing	14.4	<0.3	404	>360
3-5 Days Later	14.5	<0.3	406	>360
Untreated	14.5	<0.3	403	>360

OVERALL YIELD

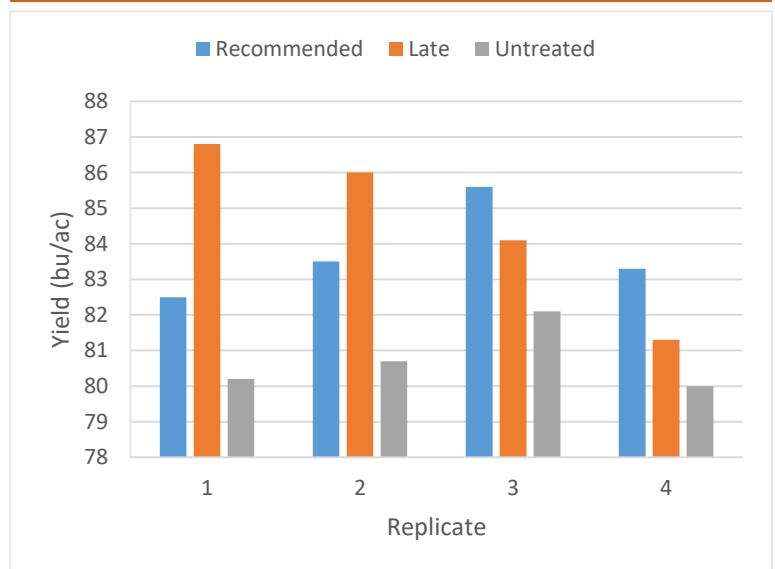
	Mean (bu/ac)
Rec'd Timing	83.7 ab*
3-5 Days Later	84.6 a
Untreated	80.8 b
P-Value	0.0382
CV	2.8%
Significance	Yes

* Means followed by the same letter are not significantly different at P=0.05

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was a significant yield difference between a single application of fungicide at the late timing compared to an untreated check; however, there was no significant yield difference between the recommended application timing and the late and untreated check. Wheat quality was consistent between all treatments receiving a #1 grade for CPSR.

Wheat Fusarium Head Blight Fungicide Timing



Trial ID: 2018-WFHB02 – R.M. of Louise

Objective: Quantify the impact of fusarium head blight on the quality of harvested grain by comparing the farmers normal fungicide application at recommended rate and timing to a fungicide application 3 to 5 days later.

TRIAL INFORMATION

Treatment	Rec'd timing vs. 3-5 days later vs. Untreated
Rural Municipality	Louise
Previous Crop	Canola
Soil Texture	Clay Loam
Tillage	Reduced
Seeding Date	May 1, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	146 lbs/ac
Fungicide Product	Prosaro XTR
Rec'd App Date	June 27, 2018
Rec'd App Timing	First flower
3-5 Day Later App Date	June 30, 2018
Harvest Date	August 16, 2018

FIELD IMAGE – JULY 25, 2018



PRECIPITATION†

	May	June	July	Aug
Rainfall	54	99	31	37
Normal	61	90	68	72

† Growing season precipitation (mm)

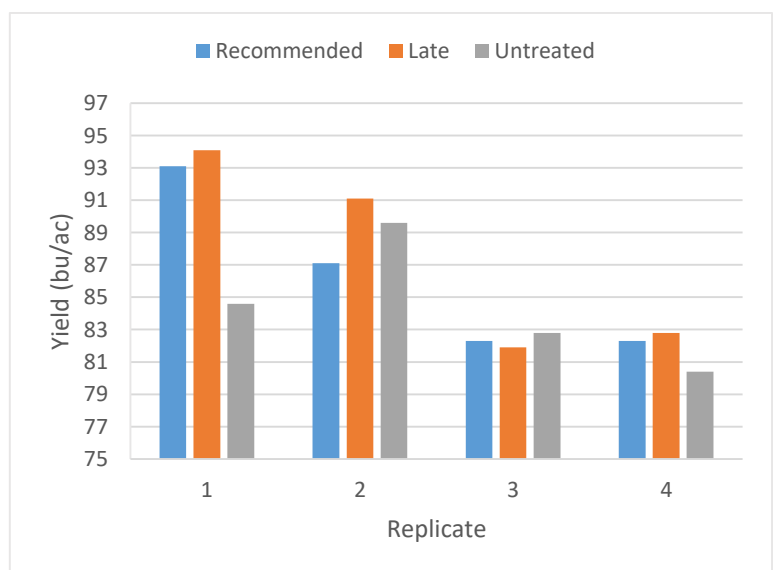
WHEAT QUALITY

	Protein	Don	Test Weight	Falling Number
Rec'd Timing	14.4	<0.3	412	>360
3-5 Days Later	14.3	<0.3	412	>360
Untreated	14.7	<0.3	412	>360

OVERALL YIELD

	Mean (bu/ac)
Rec'd Timing	86.2
3-5 Days Later	87.5
Untreated	84.4
P-Value	0.3459
CV	5.6%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between the recommended timing, late timing, and untreated check for fusarium head blight fungicide applications. Wheat quality was consistent for all treatments, receiving a #1 grade for CWRS. Rainfall was near normal for June, but below normal for the remainder of the growing season.

Trial ID: 2018-WFHB03 – R.M. of Dufferin

Objective: Quantify the impact of fusarium head blight on the quality of harvested grain by comparing the farmers normal fungicide application at recommended rate and timing to a fungicide application 3 to 5 days later.

TRIAL INFORMATION	
Treatment	Rec'd timing vs. 3-5 days later
Rural Municipality	Dufferin
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Conventional
Seeding Date	May 2, 2018
Variety	Brandon
Row Spacing	9"
Seeding Rate	135 lbs/ac
Fungicide Product	Caramba
Rec'd App Date	June 28, 2018
Rec'd App Timing	20% flower
3-5 Day Later App Date	July 2, 2018
Harvest Date	August 9, 2018

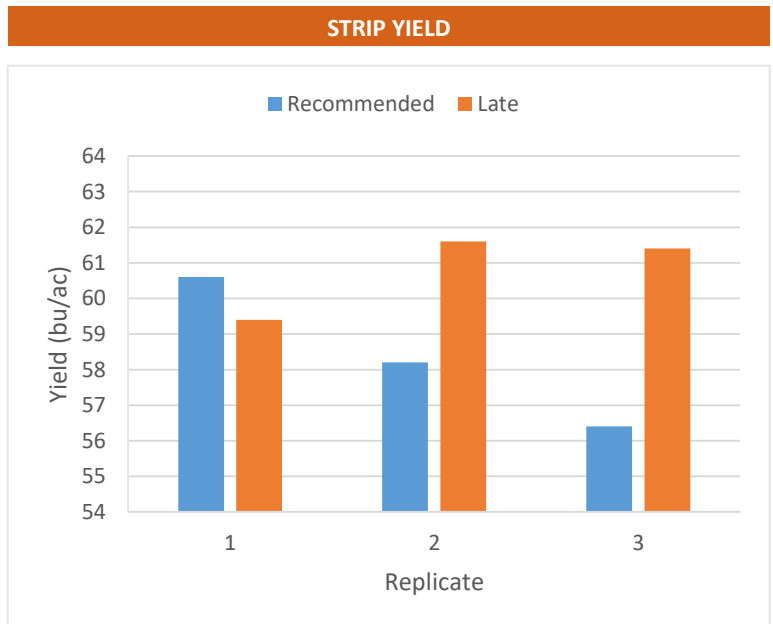


PRECIPITATION†				
	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

† Growing season precipitation (mm)

WHEAT QUALITY				
	Protein	Don	Test Weight	Falling Number
Rec'd Timing	16.2	<0.3	411	>360
3-5 Days Later	15.8	<0.3	412	>360

OVERALL YIELD	
	Mean (bu/ac)
Rec'd Timing	58.4
3-5 Days Later	60.8
Yield Difference	2.4
P-Value	0.1627
CV	3.4%
Significance	No



Summary: There was no significant yield difference between the recommended and late fungicide application timings for fusarium head blight. Wheat quality was consistent for both treatments, receiving a #1 grade for CWRS. Rainfall was below normal for the entire growing season at this site. There was no replicated untreated check strip in this trial..

Wheat Fusarium Head Blight Fungicide Timing



Trial ID: 2018-WFHB04 – R.M. of Grey

Objective: Quantify the impact of fusarium head blight on the quality of harvested grain by comparing the farmers normal fungicide application at recommended rate and timing to a fungicide application 3 to 5 days later.

TRIAL INFORMATION

Treatment	Rec'd timing vs. 3-5 days later vs. Untreated
Rural Municipality	Grey
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Conventional
Seeding Date	May 1, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	135 lb/ac
Fungicide Product	Folicur
Rec'd App Date	June 25, 2018
Rec'd App Timing	First flower
3-5 Day Later App Date	June 29, 2018
Harvest Date	August 15, 2018

FIELD IMAGE – JULY 28, 2018



PRECIPITATION†

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

† Growing season precipitation (mm)

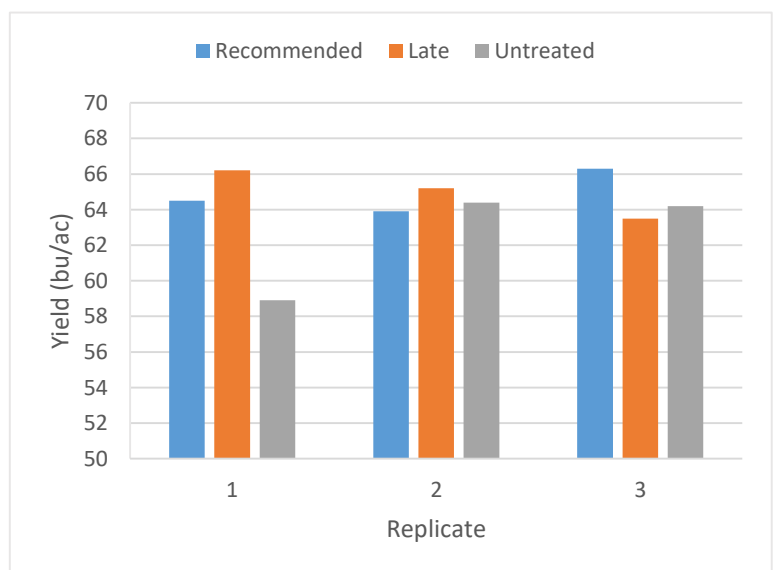
WHEAT QUALITY

	Protein	Don	Test Weight	Falling Number
Rec'd Timing	15.4	<0.3	403	>360
3-5 Days Later	15.5	<0.3	404	>360
Untreated	15.7	0.3	403	>360

OVERALL YIELD

	Mean (bu/ac)
Rec'd Timing	64.9
3-5 Days Later	65.0
Untreated	62.5
P-Value	0.3277
CV	3.4%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between the recommended timing, late timing, and untreated check for fusarium head blight fungicide applications. Wheat quality was consistent for all treatments, receiving a #1 grade for CWRS. Rainfall was near normal for June, but below normal for the remainder of the growing season.

MWPGA would like to thank the Canadian Grain Commission for conducting the wheat quality analysis for this trial through the Harvest Sample Program



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Wheat Plant Growth Regulator Trial

The objective of this study was to quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, lodging, yield, and quality of spring wheat in Manitoba.

Wheat plant growth regulator (PGR) trial summary at 10 on-farm trials across Manitoba in 2018.

Trial ID	Rural Municipality	Variety	Height		Height Difference	Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%	Protein		
			Treated	Untreated		Treated	Untreated					Treated	Untreated	
			cm		cm	bu/ac		bu/ac	%				%	
WPGR01	Morris	Brandon	57	66	-9	64.6	65.0	-0.4	1.8	0.6629	No	16.4	16.4	
WPGR02	Rhineland	Brandon	77	86	-10	100.8	97.5	3.4	2.5	0.0455	Yes	14.1	14.5	
WPGR03	Grey	Brandon	63	73	-10	75.6	74.9	0.7	1.8	0.3317	No	13.1	13.1	
WPGR04	Pembina	Faller	81	90	-10	103.7	99.9	3.7	6.8	0.4920	No	13.1	13.4	
WPGR05	Hanover	Rowyn	83	87	-4	96.9	94.9	2.0	1.7	0.0855	No	11.3	11.8	
WPGR06	Oakland Wawaneesa	Cardale	78	90	-11	78.4	78.4	0.0	4.7	0.9905	No	13.6	13.7	
WPGR07	Woodlands	Brandon	79	87	-8	69.9	69.3	0.6	2.4	0.6340	No	13.3	14.8	
WPGR08	Killarney Turtle Mountain	Brandon	86	90	-4	95.9	94.3	1.6	1.4	0.1823	No	14.2	14.1	
WPGR09	St. Andrews	Brandon	84	91	-7	86.5	79.5	7.0	5.8	0.0323	Yes	12.7	12.3	
WPGR10	Macdonald	Ellie	63	71	-8	94.2	85.9	8.3	10.2	0.2249	No	15.4	15.5	

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR01 – R.M. of Morris

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, lodging, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Morris
Previous Crop	Canola
Soil Texture	Clay
Tillage	Conventional
Seeding Date	April 28, 2018
Variety	ACC Brandon
Row Spacing	7.5"
Seeding Rate	117 lbs/ac
Residual N	---
Fertilizer (N-P-K-S)	194-30-0-7.5
Application Date	June 13, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 8, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	28	85	38	27
Normal	54	86	72	65

[†] Growing season precipitation (mm)

WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	22.5	No	16.4
Untreated	26.1	No	16.4

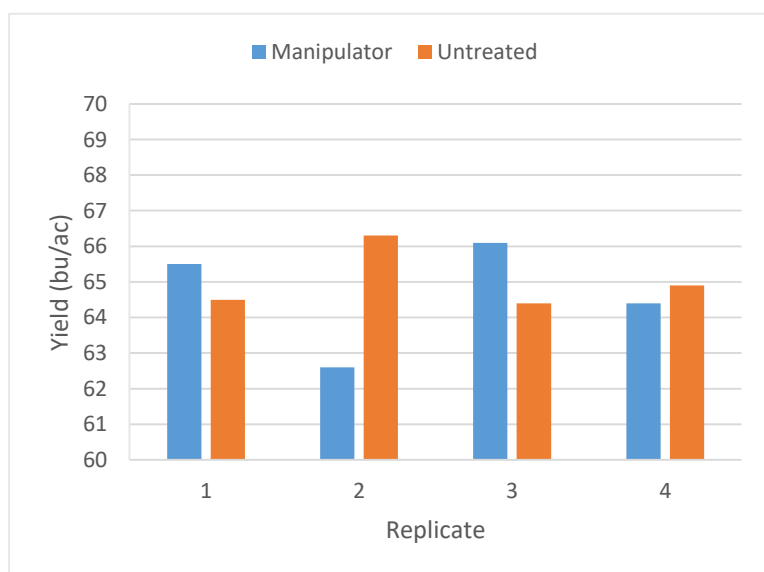
OVERALL YIELD

	Mean (bu/ac)
Manipulator	64.6
Untreated	65.0
Yield Difference	-0.4
P-Value	0.6629
CV	1.8%
Significance	No

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was near normal for the month of June but below normal for the remainder of the growing season. There was no lodging observed within the trial. Manipulator reduced plant height by 3.6 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR02 – R.M. of Rhineland

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, lodging, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Rhineland
Previous Crop	Dry Beans
Soil Texture	Clay Loam
Tillage	Heavy Harrow 1x
Seeding Date	May 2, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	150 lbs/ac (36 g TKW)
Residual N	---
Fertilizer (N-P-K-S)	120-40-20-0
Application Date	June 12, 2018
Application Timing	5-6 leaf stage (GS 31)
Application Rate	0.7 L/ac
Harvest Date	August 10, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	34	44	39	42
Normal	56	85	75	66

[†] Growing season precipitation (mm)

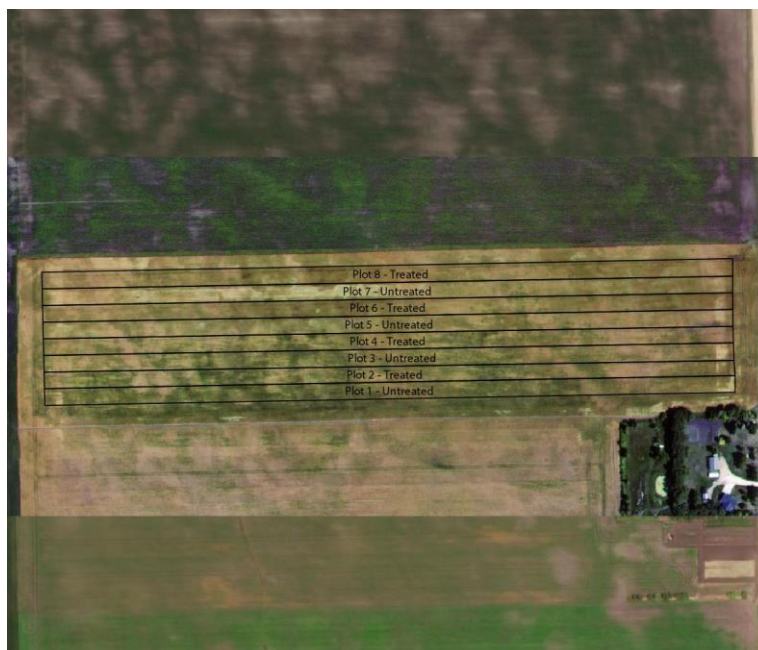
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	30.2	No	14.1
Untreated	34.0	Yes	14.5

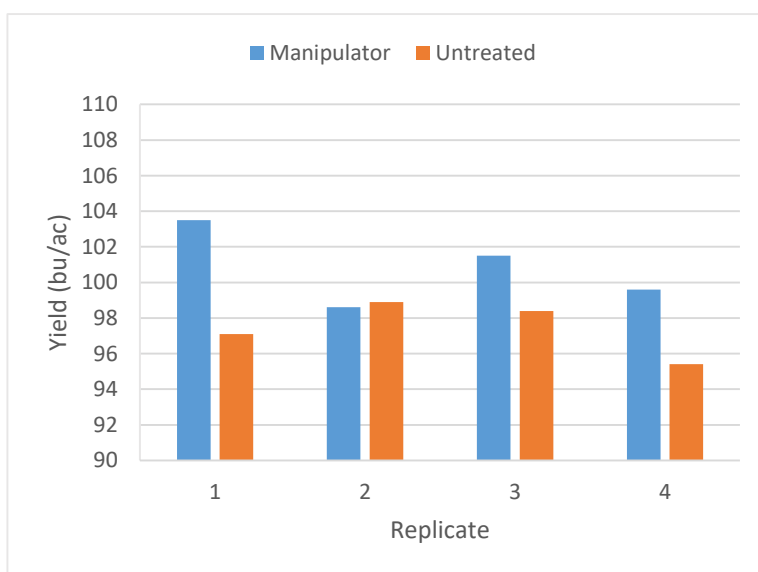
OVERALL YIELD

	Mean (bu/ac)
Manipulator	100.8
Untreated	97.5
Yield Difference	3.3
P-Value	0.0455
CV	2.5%
Significance	Yes

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was a significant yield difference of 3.3 bu/ac between Manipulator applied at the 5-6 leaf growth stage (GS31) and untreated check strips. Rainfall was below average for the entire growing season; however, there was lodging observed in the untreated control strips. Manipulator reduced the plant height by 3.8 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR03 – R.M. of Grey

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Grey
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Conventional
Seeding Date	April 30, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	2.2 bu/ac
Residual N	---
Fertilizer (N-P-K-S)	135-40-10-10
Application Date	June 13, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 10, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

[†] Growing season precipitation (mm)

WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	24.8	No	13.1
Untreated	28.7	No	13.1

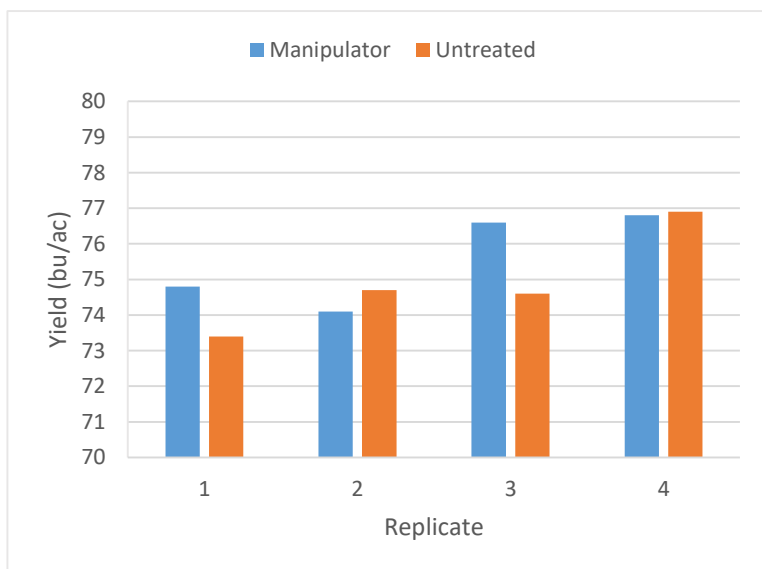
OVERALL YIELD

	Mean (bu/ac)
Manipulator	75.6
Untreated	74.9
Yield Difference	0.7
P-Value	0.3317
CV	1.8%
Significance	No

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was below normal for the entire growing season and there was no lodging observed within the trial. Manipulator reduced plant height by 3.9 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR04 – R.M. of Pembina

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Pembina
Previous Crop	Canola
Soil Texture	Clay Loam
Tillage	Reduced
Seeding Date	May 4, 2018
Variety	Faller
Row Spacing	7.5"
Seeding Rate	150 lbs/ac
Residual N	---
Fertilizer (N-P-K-S)	160-55-10-10
Application Date	June 19, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 23, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	59	111	41	38
Normal	55	83	79	65

[†] Growing season precipitation (mm)

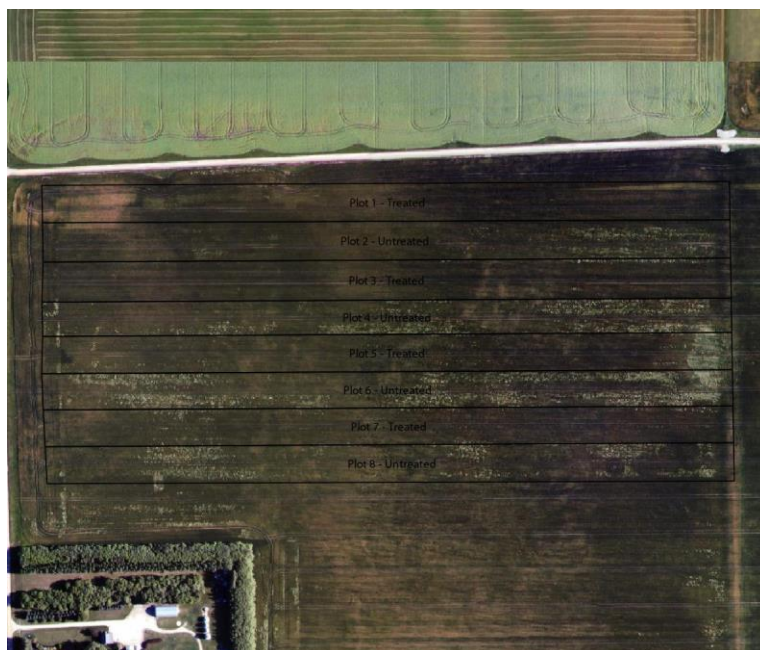
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	31.9	No	13.1
Untreated	35.6	Yes	13.4

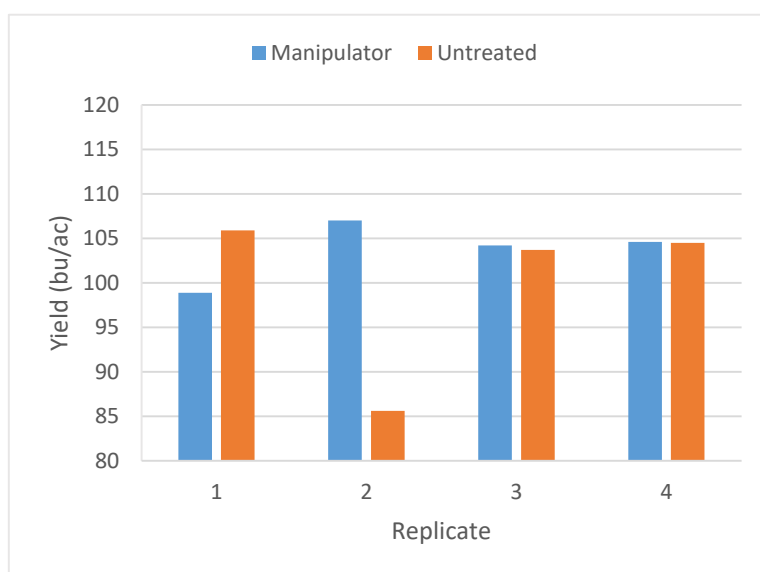
OVERALL YIELD

	Mean (bu/ac)
Manipulator	103.7
Untreated	99.9
Yield Difference	3.7
P-Value	0.4920
CV	6.8%
Significance	No

FIELD IMAGE – JULY 25, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was above average for the month of June but below average for the remainder of the growing season. There was lodging observed within the untreated control strips at this location. Manipulator reduced plant height by 3.7 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR05 – R.M. of Hanover

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Hanover
Previous Crop	Canola
Soil Texture	Clay
Tillage	Direct Seed into Winter Wheat
Seeding Date	May 16, 2018
Variety	Rowyn
Row Spacing	10"
Seeding Rate	2.6 bu/ac
Residual N	---
Fertilizer (N-P-K-S)	110-37-3.4-0
Application Date	June 9, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 17, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	42	81	36	30
Normal	58	91	80	66

[†] Growing season precipitation (mm)

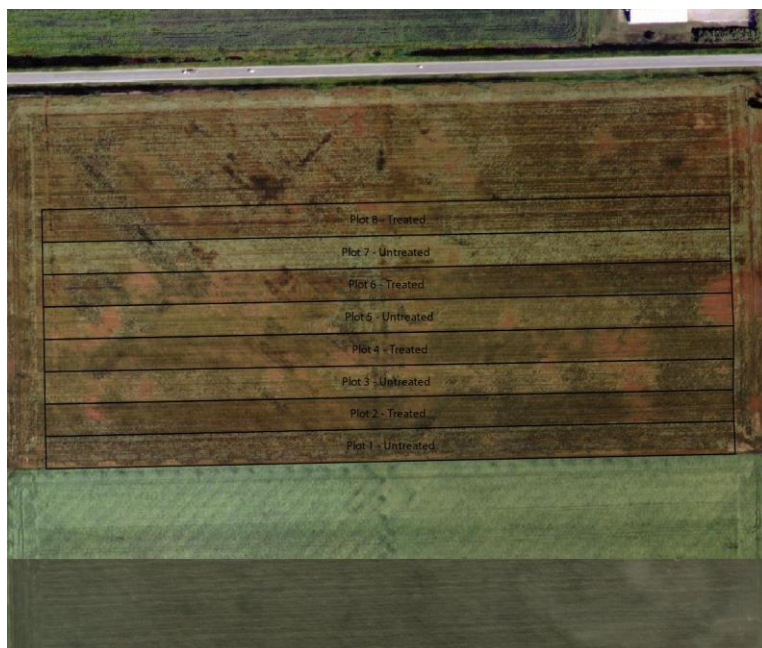
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	32.8	No	11.3
Untreated	34.2	Yes	11.8

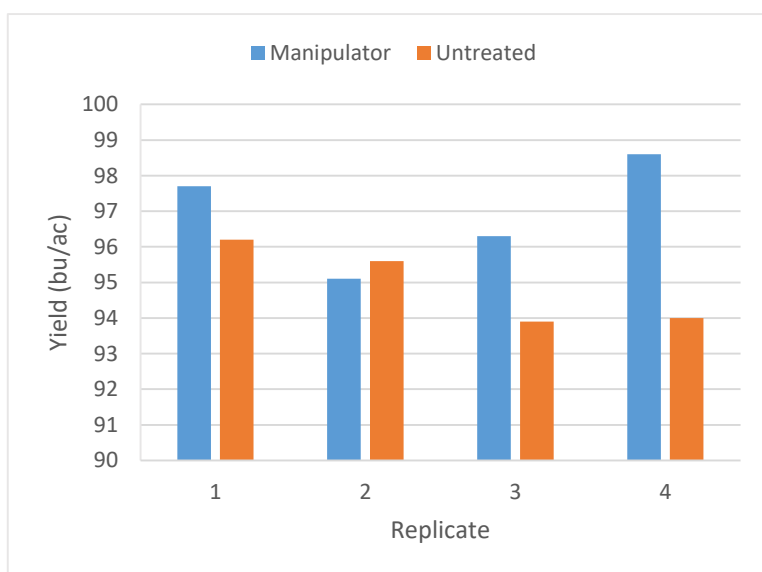
OVERALL YIELD

	Mean (bu/ac)
Manipulator	96.9
Untreated	94.9
Yield Difference	2.0
P-Value	0.0855
CV	1.7%
Significance	No

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was near normal for the month of June but below normal for the remainder of the growing season. There was lodging observed within the untreated control strip at this location. Manipulator reduced plant height by 1.4 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR06 – R.M. of Oakland-Wawanesa

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Oakland-Wawanesa
Previous Crop	Soybean
Soil Texture	Clay Loam
Tillage	Reduced
Seeding Date	May 2, 2018
Variety	Cardale
Row Spacing	10"
Seeding Rate	1.5 bu/ac
Residual N	---
Fertilizer (N-P-K-S)	80-30-0-0
Application Date	June 13, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 20, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	29	61	57	27
Normal	51	73	74	68

[†] Growing season precipitation (mm)

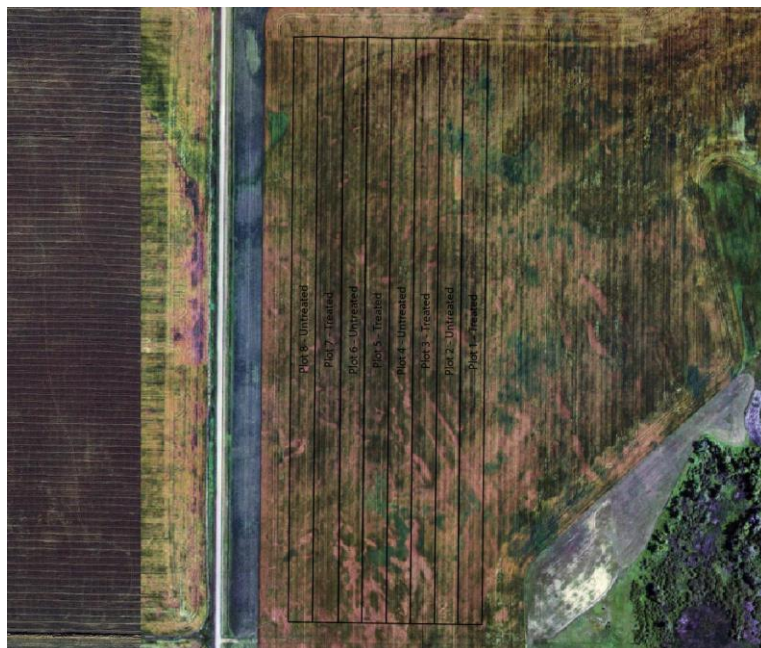
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	30.9	No	13.6
Untreated	35.3	No	13.7

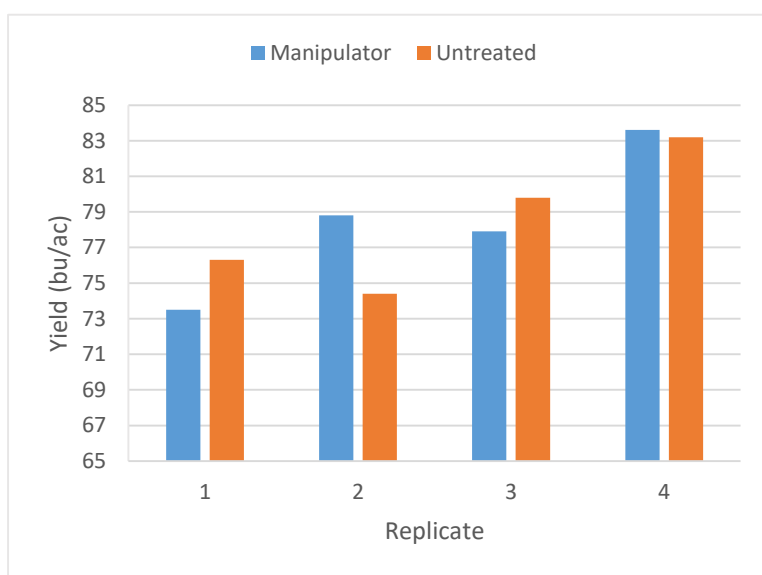
OVERALL YIELD

	Mean (bu/ac)
Manipulator	78.4
Untreated	78.4
Yield Difference	0.0
P-Value	0.9905
CV	4.7%
Significance	No

FIELD IMAGE – JULY 24, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was below normal for the entire growing season and there was no lodging observed within the trial. Manipulator reduced plant height by 4.4 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR07 – R.M. of Woodlands

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Woodlands
Previous Crop	Soybean
Soil Texture	Clay Loam
Tillage	Reduced
Seeding Date	April 30, 2018
Variety	Brandon
Row Spacing	10"
Seeding Rate	128 lbs/ac
Residual N	70 lbs N/ac
Fertilizer (N-P-K-S)	65-10-0-0
Application Date	June 13, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 12, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	41	62	23	45
Normal	54	92	66	63

[†] Growing season precipitation (mm)

WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	31.1	No	13.3
Untreated	34.2	No	14.8

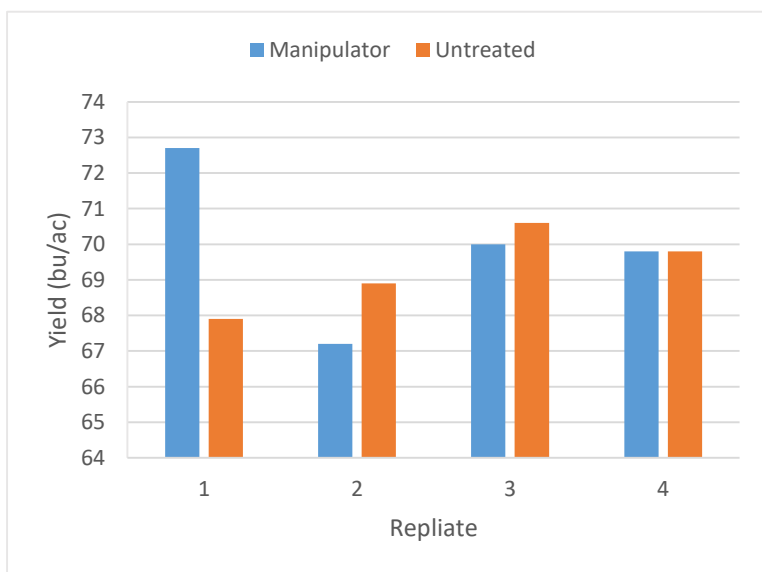
OVERALL YIELD

	Mean (bu/ac)
Manipulator	69.9
Untreated	69.3
Yield Difference	0.6
P-Value	0.6340
CV	2.4%
Significance	No

FIELD IMAGE – JULY 29, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was below normal for the entire growing season and there was no lodging observed within the trial. Manipulator reduced plant height by 3.1 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator

Trial ID: 2018-WPGR08 – R.M. of Killarney-Turtle Mountain

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Killarney-Turtle Mountain
Previous Crop	Soybean
Soil Texture	Loam to Clay Loam
Tillage	Reduced
Seeding Date	May 9, 2018
Variety	Brandon
Row Spacing	10"
Seeding Rate	135 lbs/ac
Residual N	---
Fertilizer (N-P-K-S)	170 lbs N – manure
Application Date	June 12, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 20, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	35	131	29	23
Normal	61	90	68	72

[†] Growing season precipitation (mm)

WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	33.8	No	14.2
Untreated	35.3	No	14.1

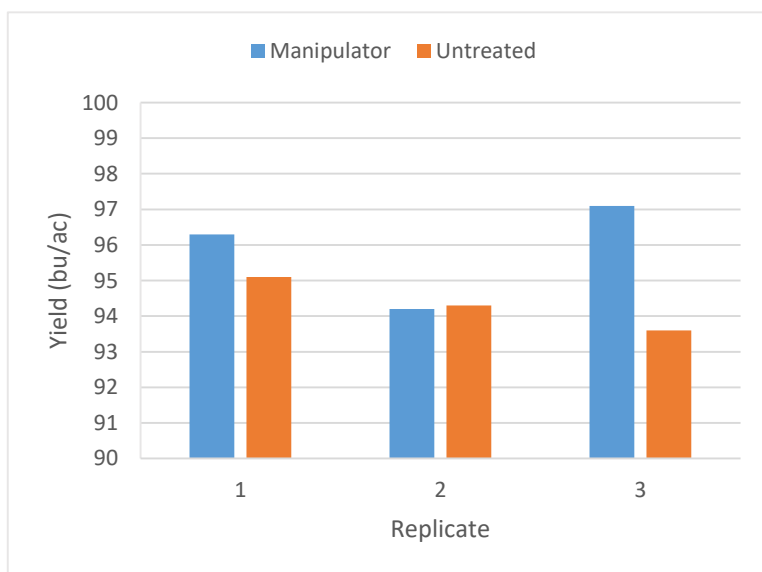
OVERALL YIELD

	Mean (bu/ac)
Manipulator	95.9
Untreated	94.3
Yield Difference	1.5
P-Value	0.1823
CV	1.4%
Significance	No

FIELD IMAGE – JULY 24, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was above normal for the month of June but below normal for the remainder of the growing season. There was no lodging observed within the trial. Manipulator reduced plant height by 1.5 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator

Trial ID: 2018-WPGR09 – R.M. of St. Andrews

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	St. Andrews
Previous Crop	Canola
Soil Texture	Clay
Tillage	1x high speed disc
Seeding Date	May 4, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	105 lbs/ac
Residual N	---
Fertilizer (N-P-K-S)	135-24-0-0
Application Date	June 14, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 18, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	39	93	32	63
Normal	54	91	81	74

[†] Growing season precipitation (mm)

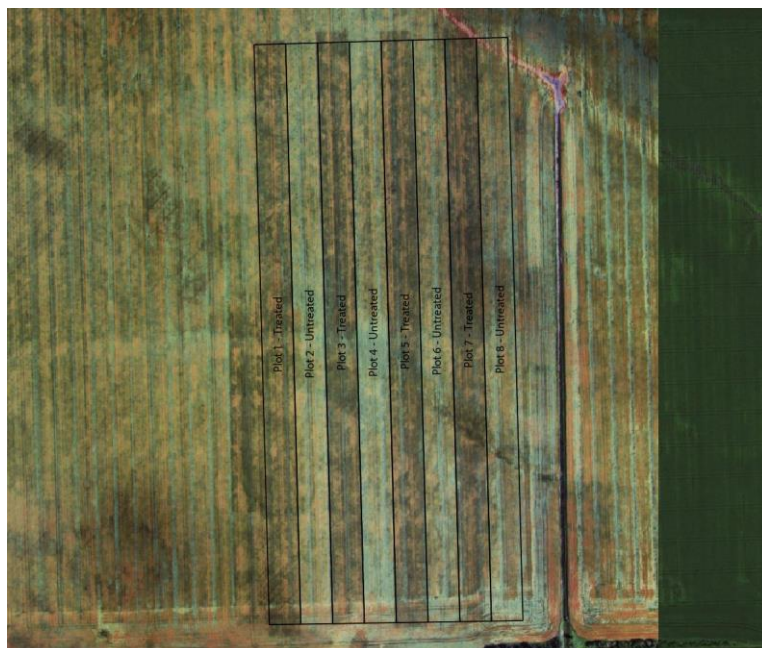
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	32.9	No	12.7
Untreated	35.8	No	12.3

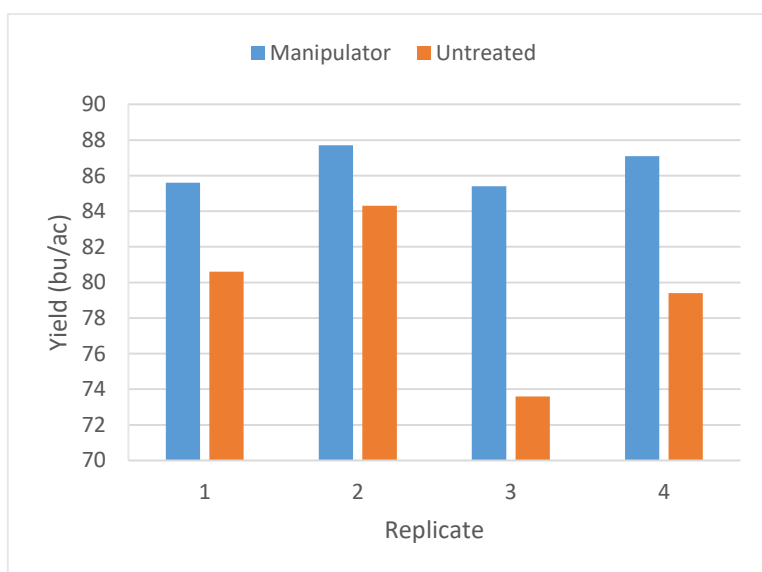
OVERALL YIELD

	Mean (bu/ac)
Manipulator	86.5
Untreated	79.5
Yield Difference	7.0
P-Value	0.0323
CV	5.8%
Significance	Yes

FIELD IMAGE – JULY 29, 2018



STRIP YIELD



Summary: There was a significant yield difference of 7 bu/ac between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. Rainfall was near normal for the month of June but below normal for the remainder of the growing season. There was lodging observed within the untreated check strip at this location. Manipulator reduced plant height by 2.9 inches and there was no significant difference in seed protein content between the two treatments.

Wheat Plant Growth Regulator Trial

Trial ID: 2018-WPGR10 – R.M. of Macdonald

Objective: Quantify the impact of the plant growth regulator Manipulator 620 (chlormequat chloride) on plant height, yield and quality of spring wheat.

TRIAL INFORMATION

Treatment	Manipulator vs. Untreated
Rural Municipality	Macdonald
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Reduced
Seeding Date	May 2, 2018
Variety	Ellie
Row Spacing	7.5"
Seeding Rate	132 lbs/ac
Residual N	29 lbs N/ac
Fertilizer (N-P-K-S)	150-45-0-10
Application Date	June 14, 2018
Application Timing	5-6 leaf stage
Application Rate	0.7 L/ac
Harvest Date	August 12, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	40	81	74	24
Normal	59	92	78	68

[†] Growing season precipitation (mm)

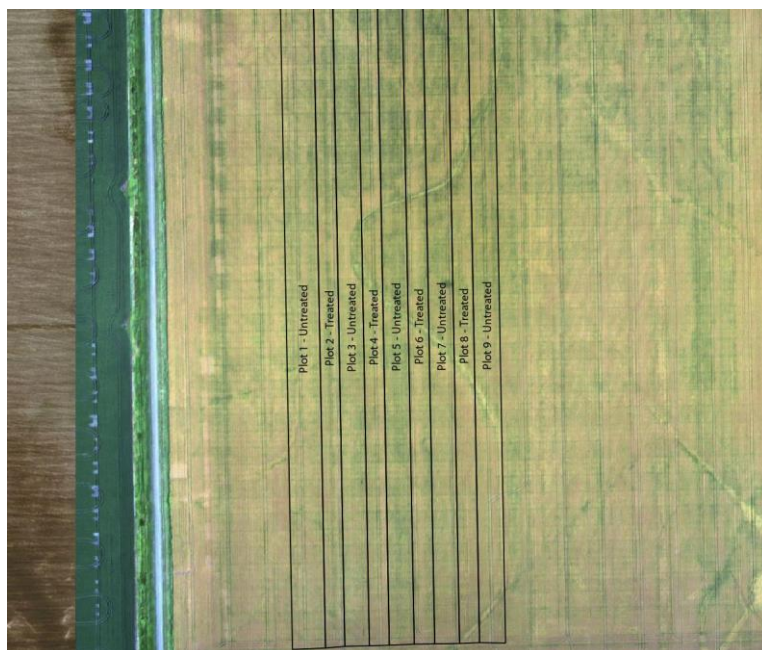
WHEAT RESPONSE

	Plant Height (inch)	Lodging	Protein
Manipulator	25.0	No	15.4
Untreated	28.1	No	15.5

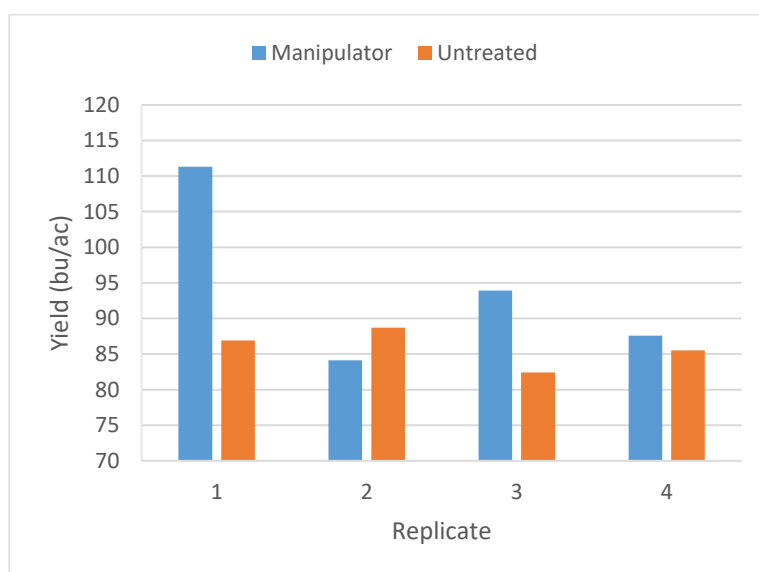
OVERALL YIELD

	Mean (bu/ac)
Manipulator	94.2
Untreated	85.9
Yield Difference	8.3
P-Value	0.2249
CV	10.2%
Significance	No

FIELD IMAGE – JULY 28, 2018



STRIP YIELD



Summary: There was no significant yield difference between Manipulator applied at the 5-6 leaf growth stage and untreated check strips. It is unclear why there was such a yield difference observed within the first replicate of this trial. Rainfall was near normal for the June and July and there was no lodging observed within the trial. Manipulator reduced plant height by 3.1 inches and there was no difference in seed protein content between the two treatments.

Wheat Post Anthesis Nitrogen Trial

The objective of this study was to quantify the impact of a post anthesis nitrogen (PAN) application on spring wheat yield and quality.

Wheat post anthesis nitrogen trial summary at one location in Manitoba in 2018.

Trial ID	Rural Municipality	Variety	Leaf Burn		Protein		Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
			Treated	Untreated	Treated	Untreated	Treated	Untreated				
			% leaf area				bu/ac		bu/ac	%		
WPAN01	Dufferin	Brandon	9.7%	0.5%	14.9	14.3	97.3	96.9	0.3	2.7	0.5237	No

Wheat Post Anthesis Nitrogen Trial

Trial ID: 2018-WPAN01 – R.M. of Dufferin

Objective: Quantify the impact of a post anthesis nitrogen (PAN) application on spring wheat yield and quality.

TRIAL INFORMATION

Treatment	PAN vs. untreated
Rural Municipality	Dufferin
Previous Crop	Soybean
Soil Texture	Clay
Tillage	Reduced
Seeding Date	April 30, 2018
Variety	Brandon
Row Spacing	7.5"
Seeding Rate	150 lbs/ac (39 g TKW)
Residual N	13 lb N/ac
Fertilizer (N-P-K-S)	138-80-0-15
PAN App Date	July 6, 2018
Application Rate	10 gal UAN + 15 gal water
Harvest Date	August 15, 2018

FIELD IMAGE – JULY 28, 2018



PRECIPITATION†

	May	June	July	Aug
Rainfall	42	92	44	28
Normal	54	81	66	71

† Growing season precipitation (mm)

WHEAT RESPONSE

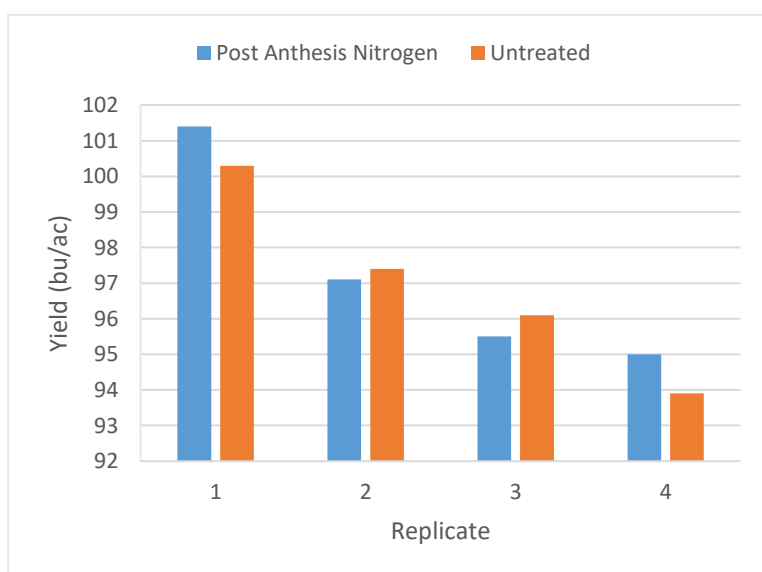
	Leaf Burn*	Protein
Post Anthesis Nitrogen	9.7%	14.9 a
Untreated	0.5%	14.3 b

* leaf area damaged assessed July 9, 2018

OVERALL YIELD

	Mean (bu/ac)
Post Anthesis Nitrogen	97.3
Untreated	96.9
Yield Difference	0.3
P-Value	0.5237
CV	2.7%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between a post anthesis application of nitrogen compare to untreated check strips. There was approximately 10% leaf area damaged from leaf burn caused by the post anthesis nitrogen application. The post anthesis nitrogen application significantly increased protein by 0.6% compared to the untreated control. Both treatments received a number 1 grade for CWRS.

Dry Bean Foliar Fungicide Trial

The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide applied at R2 – beginning pod in dry bean fields. A single application of fungicide was compared to untreated check strips.

Dry bean foliar fungicide trial summary at three On-Farm Network trials in Central Manitoba in 2018.

Trial ID	Rural Municipality	Bean Class	Product	Seeding Date	Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
					Treated	Untreated				
					lbs/ac		lbs/ac	%		
DBF01	Thompson	Pinto	Lance	May 23	2855	2802	52	3.1	0.2398	No
DBF02	Rhineland	Navy	Cotegra	May 22	2214	2302	-88	7.2	0.5051	No
DBF03	Stanley	Pinto	Cotegra	May 16	2024	2022	1	2.7	0.8766	No

Dry Bean Fungicide Trial – Pinto Beans

Trial ID: 2018-DBF01 – R.M. of Thompson

Objective: The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide in dry bean fields. A single application of Lance was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Lance vs. Untreated
Rural Municipality	Thompson
Previous Crop	Corn
Soil Description	Loam
Tillage	Conventional
Planting Date	May 23, 2018
Variety	Vibrant
Row Spacing	30"
Plant Population @ R7	69,000 plants/ac
Application Date	July 13, 2018
Application Timing	R2 – beginning pod
Application Rate	227 g/ac (25 ac/case)
Harvest Date	September 3, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	41	55	63	30
Normal	62	83	70	67

[†] Growing season precipitation (mm)

WHITE MOULD DISEASE RATING[†]

	Incidence	Severity
Lance	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	No	No

[†] Rated on a scale of 0-5 (0 = no disease, 5 = full infection) at growth stage R7

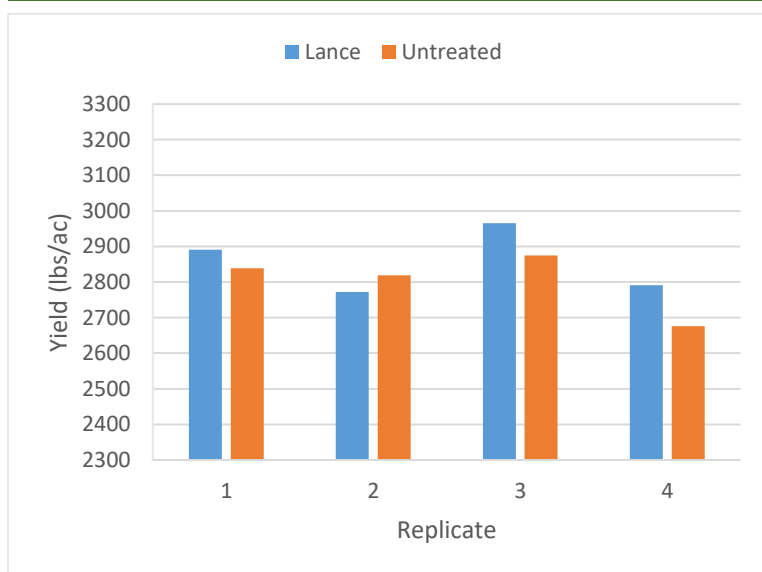
OVERALL YIELD

	Mean (lbs/ac)
Lance	2829
Untreated	2858
Yield Difference	52
P-Value	0.2398
CV	3.1%
Significance	No

FIELD IMAGE – AUG. 11, 2018



STRIP YIELD



Summary: There was no significant yield difference between a single application of Lance applied at R2 (beginning pod) and an untreated check. Rainfall was below normal for the growing season and there was no white mould observed within the trial when rated at R7 (full seed).

Dry Bean Fungicide Trial – Navy Beans

Trial ID: 2018-DBF02 – R.M. of Rhineland

Objective: The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide in dry bean fields. A single application of Cotegra was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cotegra vs. Untreated
Rural Municipality	Rhineland
Previous Crop	Corn
Soil Description	Very Fine Sandy Loam
Tillage	Conventional
Planting Date	May 22, 2018
Variety	T9905
Row Spacing	30"
Plant Population @ R8	80,000 plants/ac
Application Date	July 13, 2018
Application Timing	R2 – beginning pod
Application Rate	400 ml/ac
Harvest Date	September 5, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	34	44	39	42
Normal	56	85	75	66

† Growing season precipitation (mm)

WHITE MOULD DISEASE RATING‡

	Incidence	Severity
Cotegra	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	No	No

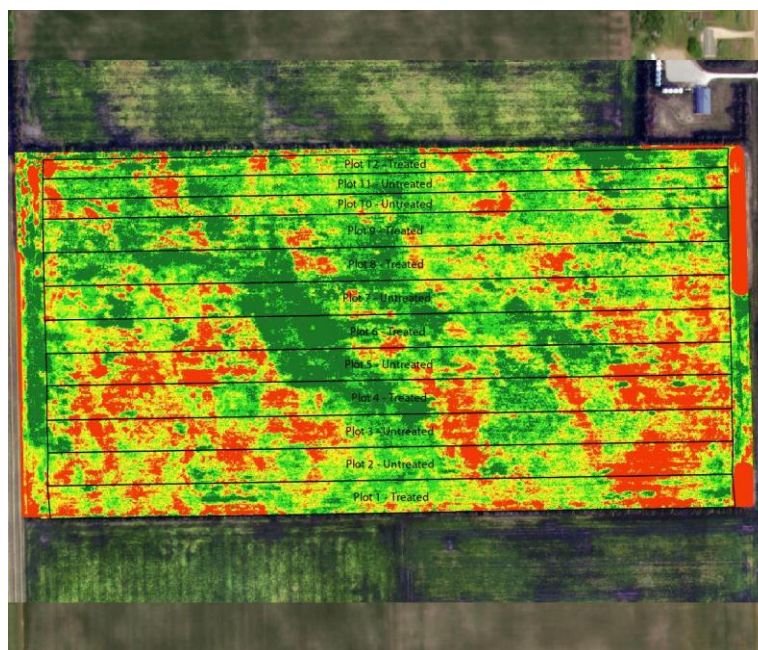
‡ Rated on a scale of 0-5 (0 = no disease, 5 = full infection) at growth stage R7

OVERALL YIELD

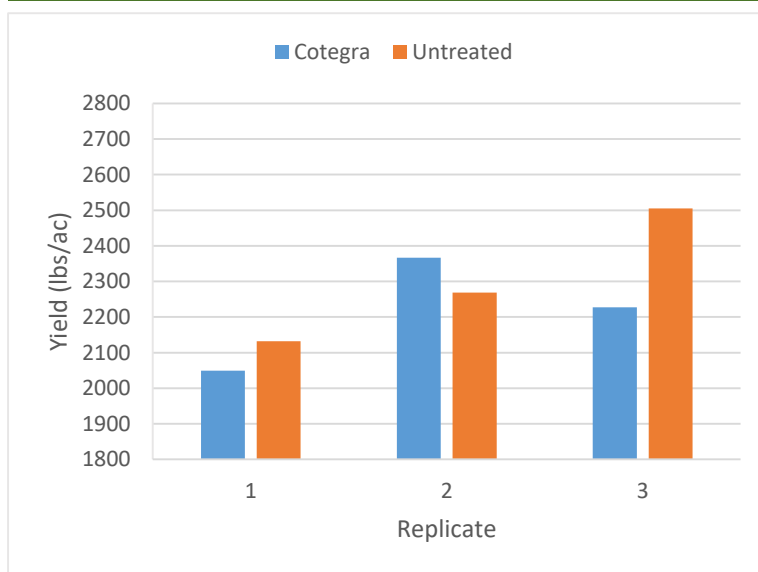
	Mean (lbs/ac)
Cotegra	2214
Untreated	2302
Yield Difference	- 88
P-Value	0.5041
CV	7.2%
Significance	No

Summary: There was no significant yield difference between a single application of Cotegra applied at R2 (beginning pod) and an untreated check. Rainfall was below normal for the growing season and there was no white mould observed within the trial when rated at R7 (full seed).

NDVI FIELD IMAGE – AUG. 11, 2018



STRIP YIELD



Dry Bean Fungicide Trial – Pinto Beans

Trial ID: 2018-DBF03 – R.M. of Stanley

Objective: The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide in dry bean fields. A single application of Cotegra was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cotegra vs. Untreated
Rural Municipality	Stanley
Previous Crop	Canola
Soil Description	Clay
Tillage	Conventional
Planting Date	May 16, 2018
Variety	Windbreakers
Row Spacing	30"
Plant Population @ R8	81,000 plants/ac
Application Date	July 13, 2018
Application Timing	R2 – beginning pod
Application Rate	400 ml/ac
Harvest Date	September 1, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	41	74	51	30
Normal	62	83	70	67

[†] Growing season precipitation (mm)

WHITE MOULD DISEASE RATING[†]

	Incidence	Severity
Cotegra	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	No	No

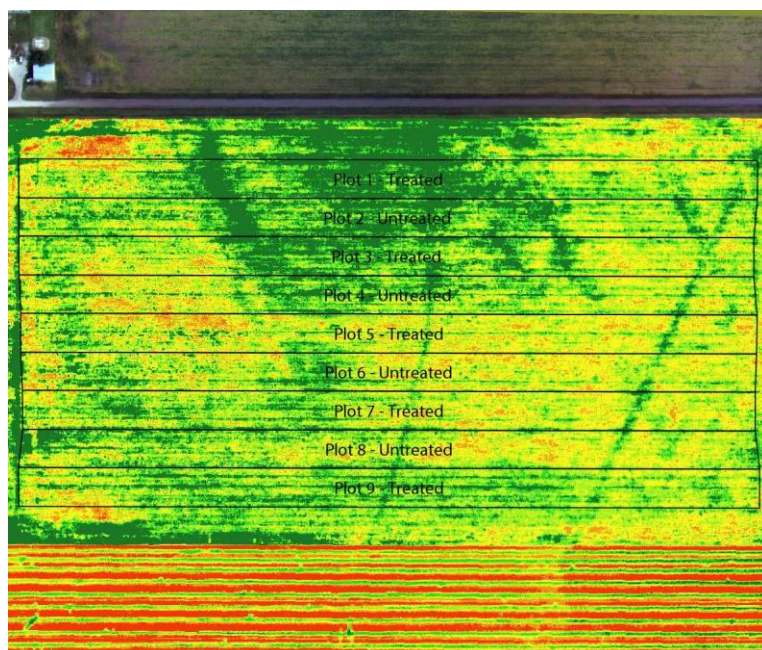
[†] Rated on a scale of 0-5 (0 = no disease, 5 = full infection) at growth stage R7

OVERALL YIELD

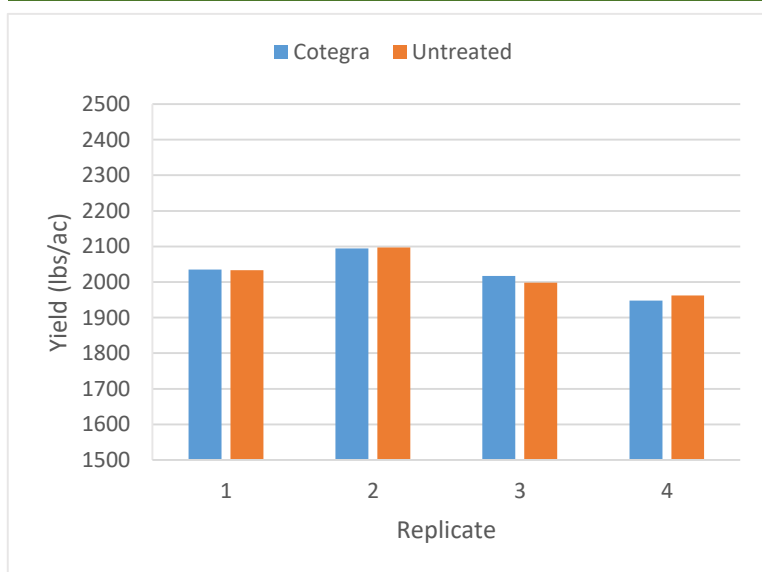
	Mean (lbs/ac)
Cotegra	2024
Untreated	2022
Yield Difference	1
P-Value	0.8766
CV	2.7%
Significance	No

Summary: There was no significant yield difference between a single application of Cotegra applied at R2 (beginning pod) and an untreated check. Rainfall was below normal for the growing season and there was no white mould observed within the trial when rated at R7 (full seed).

NDVI FIELD IMAGE – AUG. 11, 2018



STRIP YIELD



The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide in field peas. Trials consisted of either a single application of fungicide compared to untreated check strips, or a single application of fungicide compared to two applications of fungicide applied 7-14 days apart.

Field pea foliar fungicide trial summary for six On-Farm Network trials across Manitoba in 2018.

Trial ID	Rural Municipality	Treatment		Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
		Treated	Untreated	Treated	Untreated				
				----- bu/ac -----		bu/ac	%		
PF01	Rockwood	Delaro	Untreated	58.0	55.9	2.1	3.8	0.1125	No
PF03	Rhineland	Dyax 2nd App	Priaxor 1st App	52.5	52.3	0.2	5.5	0.9033	No
PF04	Morton	Delaro 2nd App	Delaro 1st App	73.2	70.5	2.8	3.8	0.0084	Yes
PF05	Hamiota	Dyax	Untreated	73.7	72.0	1.8	2.3	0.1505	No
PF06	Prairie View	Delaro 2nd App	Priaxor 1st App	80.5	77.7	2.8	3.3	0.2216	No
PF07	Swan Valley	Delaro Late	Headline Early	77.2	71.7	5.5	4.9	0.0121	Yes

Field Pea Foliar Fungicide Trial

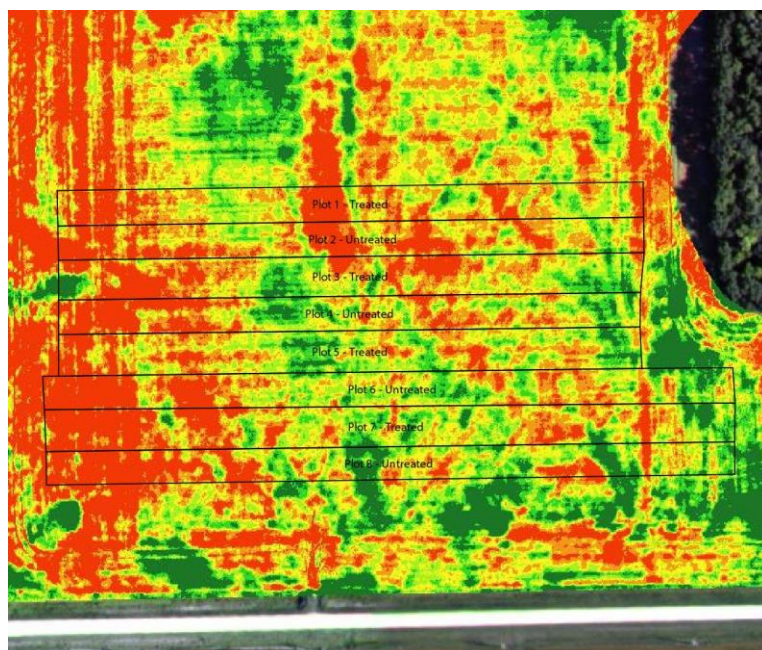
Trial ID: 2018-PF01 – R.M. of Rockwood

Objective: Quantify the agronomic and economic impacts of foliar fungicide in field peas. A single application of Delaro was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	Rockwood
Previous Crop	Oats
Soil Texture	Very Fine Sandy Loam
Tillage	Conventional
Planting Date	May 6, 2018
Variety	AAC Carver
Row Spacing	10"
Seeding Rate	3 bu/ac
Application Date	June 28, 2018
Application Timing	First Flower
Application Rate	355 ml/ac (20 ac/jug)
Application Method	Ground
Harvest Date	August 12, 2018

NDVI FIELD IMAGE – JULY 29, 2018



PRECIPITATION†

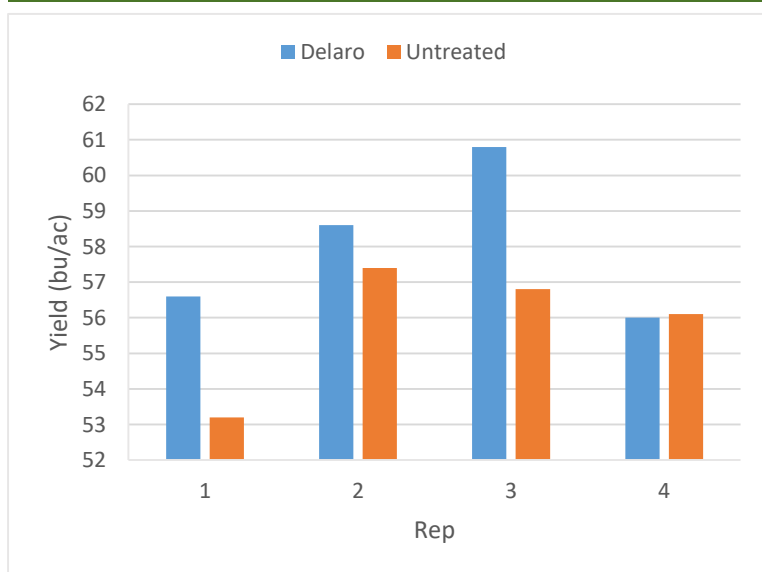
	May	June	July	Aug
Rainfall	47	90	90	77
Normal	54	92	66	63

† Growing season precipitation until harvest (mm)

OVERALL YIELD

	Mean (bu/ac)
Delaro	58.0
Untreated	55.9
Yield Difference	2.1
P-Value	0.1125
CV	3.8%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between a single application of Delaro applied at first flower compared to an untreated check. Rainfall was above normal for the month of July, and near normal for the remainder of the growing season.

Field Pea Foliar Fungicide Trial

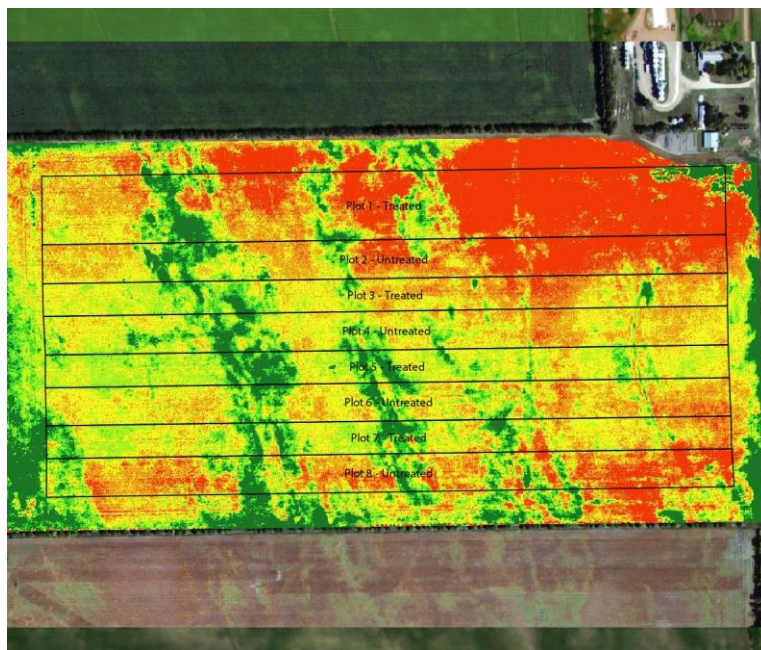
Trial ID: 2018-PF03 – R.M. of Rhineland

Objective: Quantify the agronomic and economic impacts of foliar fungicides in field peas. One application of fungicide was compared to two applications of fungicide. The first application was Priaxor and the second application was Dyax. There was no untreated check strip within this trial.

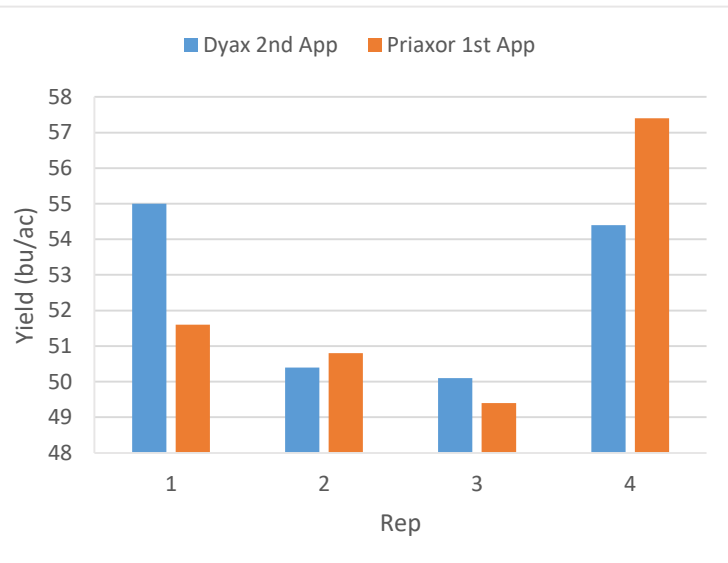
TRIAL INFORMATION

Treatment	Priaxor 1 st app vs. Priaxor 1 st app and Dyax 2 nd app
Rural Municipality	Rhineland
Previous Crop	Corn
Soil Texture	Clay Loam
Tillage	Conventional
Planting Date	April 30, 2018
Variety	LaCombe
Row Spacing	7.5"
Seeding Rate	180 lbs/ac
App Date – Priaxor	June 20, 2018
App Timing – Priaxor	First Flower
App Rate – Priaxor	120 ml/ac (80 ac/jug)
App Method – Priaxor	Ground
App Date – Dyax	June 30, 2018
App Timing – Dyax	Late Flower
App Rate – Dyax	160 ml/ac (60 ac/jug)
App Method – Dyax	Ground
Harvest Date	August 6, 2018

NDVI FIELD IMAGE – JULY 28, 2018



STRIP YIELD



PRECIPITATION†

	May	June	July	Aug
Rainfall	34	44	39	42
Normal	56	85	75	66

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Priaxor - 1st App + Dyax 2nd App	52.5
Priaxor - 1st App	52.3
Yield Difference	0.2
P-Value	0.9033
CV	5.5%
Significance	No

Summary: There was no significant yield difference between a single application of Priaxor applied at first flower and a single application of Priaxor applied at first flower followed by an application of Dyax applied 10 days later. There was a visual colour difference observed at harvest between the two treatments but did not result in a yield difference. Rainfall was below for the entire growing season. There was no untreated check within this trial.

MPSG would like to thank BASF for providing the Dyax for this trial

Field Pea Foliar Fungicide Trial

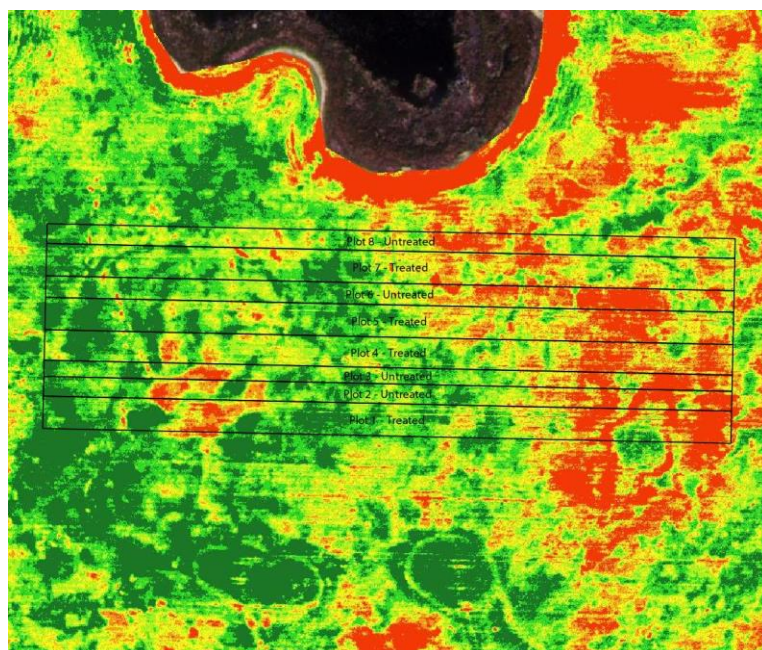
Trial ID: 2018-PF05 – R.M. of Hamiota

Objective: Quantify the agronomic and economic impacts of foliar fungicide in field peas. A single application of Dyax was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Dyax vs. Untreated
Rural Municipality	Hamiota
Previous Crop	Soybean
Soil Texture	Clay Loam
Tillage	No-Till
Planting Date	May 10, 2018
Variety	CDC Amarillo
Row Spacing	10"
Seeding Rate	2.5 bu/ac
Application Date	June 27, 2018
Application Timing	First Flower
Application Rate	160 ml/ac (60 ac/jug)
Application Method	Ground
Harvest Date	August 22, 2018

NDVI FIELD IMAGE – JULY 30, 2018



PRECIPITATION†

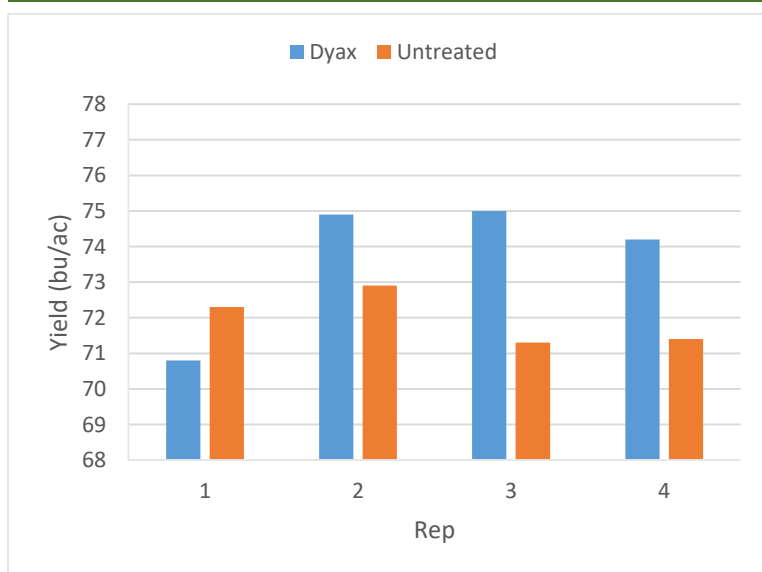
	May	June	July	Aug
Rainfall	43	109	67	21
Normal	41	79	59	53

† Growing season precipitation until harvest (mm)

OVERALL YIELD

	Mean (bu/ac)
Dyax	73.7
Untreated	72.0
Yield Difference	1.7
P-Value	0.1505
CV	2.3%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between a single application of Dyax applied at first flower and an untreated check. Rainfall was above normal for the month of June and near normal during the reproductive phases.

Field Pea Foliar Fungicide Trial

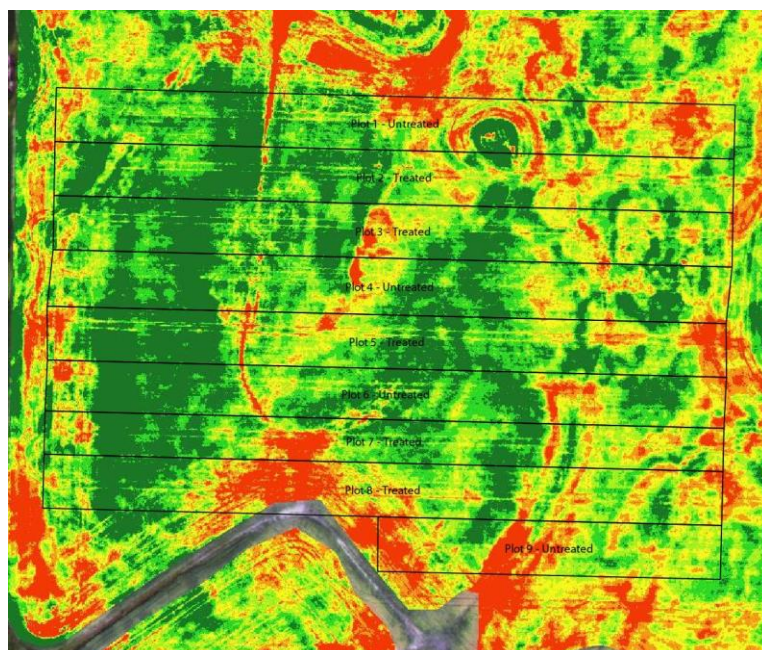
Trial ID: 2018-PF06 – R.M. of Prairie View

Objective: Quantify the agronomic and economic impacts of foliar fungicides in field peas. One application of fungicide was compared to two applications of fungicide. The first application was Priaxor and the second application was Delaro. There was no untreated check strip within this trial.

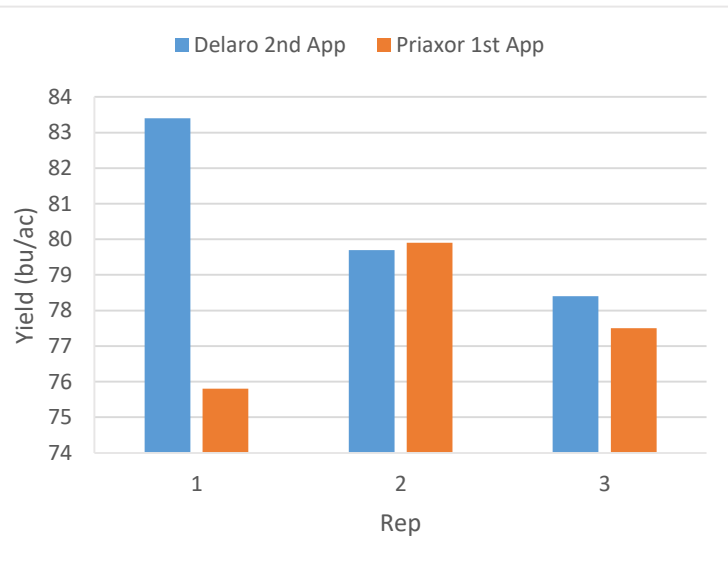
TRIAL INFORMATION

Treatment	Priaxor 1 st app vs. Priaxor 1 st app and Delaro 2 nd app
Rural Municipality	Prairie View
Previous Crop	Canola
Soil Texture	Clay Loam
Tillage	Till fall 1x
Planting Date	May 7, 2018
Variety	CDC Amarillo
Row Spacing	12"
Seeding Rate	3 bu/ac
App Date – Priaxor	June 28, 2018
App Timing – Priaxor	First Flower
App Rate – Priaxor	120 ml/ac (80 ac/jug)
App Method - Priaxor	Ground
App Date – Delaro	July 11, 2018
App Timing – Delaro	Late Flower
App Rate – Delaro	355 ml/ac (20 ac/jug)
App Method - Delaro	Ground
Harvest Date	August 15, 2018

NDVI FIELD IMAGE – JULY 30, 2018



STRIP YIELD



PRECIPITATION[†]

	May	June	July	Aug
Rainfall	41	96	31	4
Normal	48	79	71	66

[†] Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Priaxor 1st App + Delaro 2nd App	80.5
Priaxor 1st App	77.7
Yield Difference	2.8
P-Value	0.2216
CV	3.3%
Significance	No

Summary: There was no significant yield difference between a single application of Priaxor applied at first flower and a single application of Priaxor applied at first flower followed by an application of Delaro 13 days later. Rainfall was above normal for the month of June but below normal for the remainder of the growing season. There was no replicated untreated check within this trial.

The objective of this study was to quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to untreated check strips.

Soybean potassium fertility trial summary targeting fields with a soil test K level of <150 ppm at five On-Farm Network trials across Manitoba in 2018.

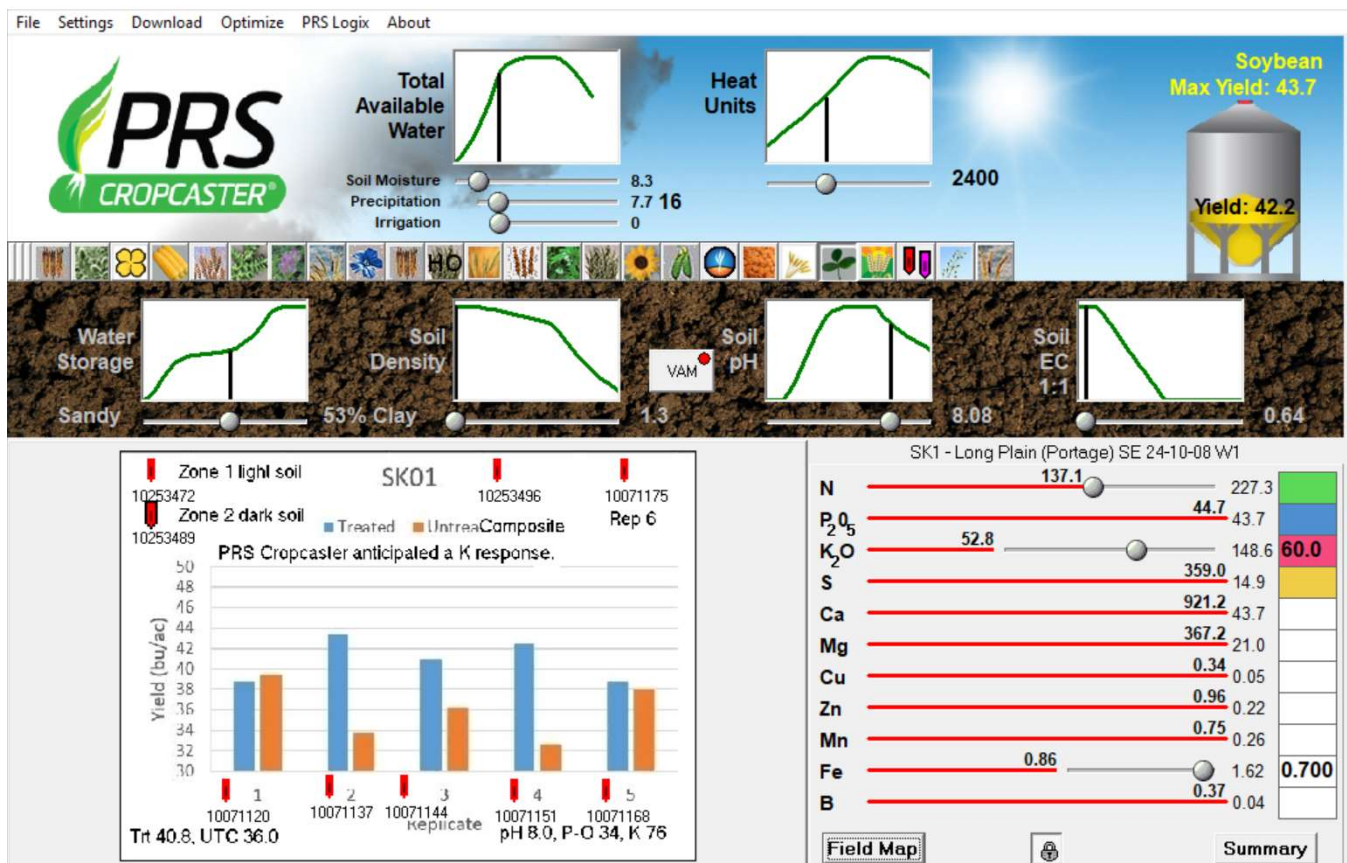
Trial ID	Rural Municipality	Placement	Potash Rate	Seeding Date	Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%	Ammonium Acetate soil test K	PRS® Tech K supply rate	K response anticipated by PRS® Tech
					Treated	Untreated							
			lbs/ac K ₂ O		bu/ac		bu/ac	%			ppm K	lb/ac K ₂ O	
SK01	Portage la Prairie	Band	60	May 29	40.8	36.0	4.8	9.1	0.0168	Yes	79	53*	Yes
SK02	Grey	Band	60	May 23	30.8	31.7	-1.0	3.8	0.0012	Yes	87	139	No
SK04	Rockwood	Band	60		43.5	43.6	-0.1	5.5	0.8629	No	216	---	---
SK05	La Broquerie	Band	60	May 17	40.9	40.1	0.8	1.8	0.0503	No	115	79*	Yes
SK07	Swan River	Band	60	May 15	46.9	47.2	-0.3	3.3	0.5769	No	133	323	No

*Differences in K supply rate observed between replicates. A difference in response between replicates anticipated by PRS® Tech.

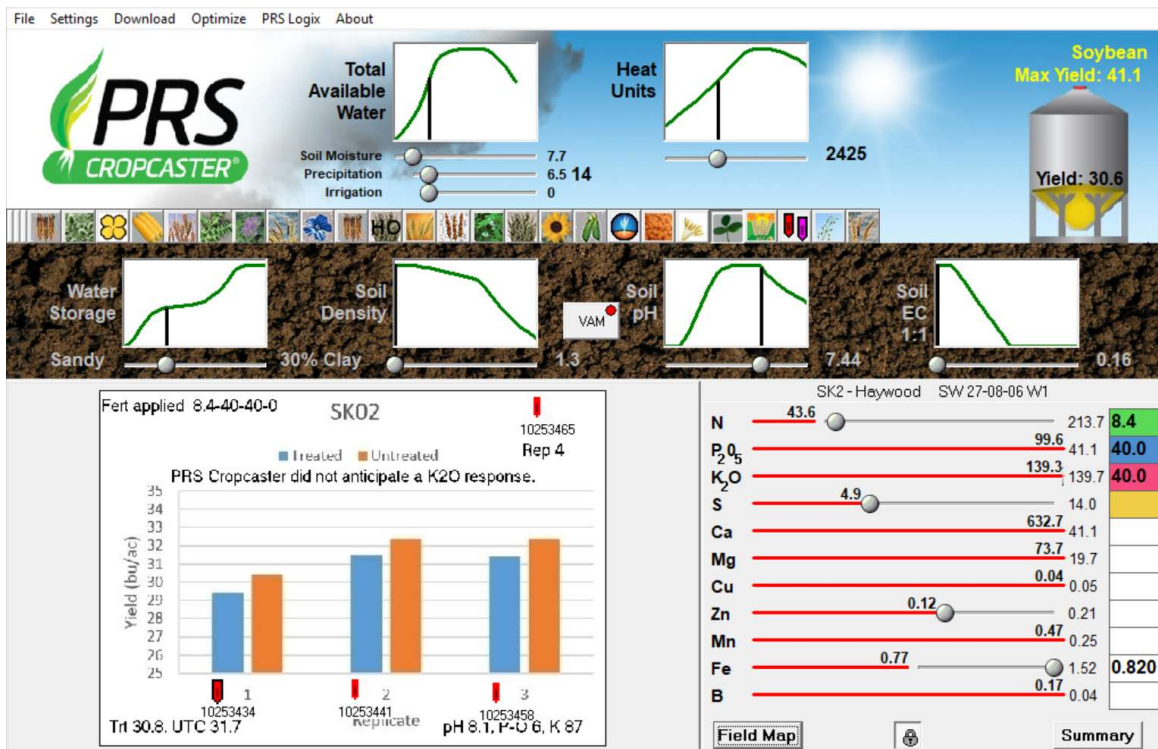
To continue the learnings initiated in 2017, Western Ag Professional Agronomy participated in year two of the Manitoba Pulse and Soybean Growers “On Farm Network” trial investigating soybean response to potassium fertilization.

The following images show the results of a PRS Cropcast[®] utilizing the PRS Cropcaster[®] computer model. Typically, the PRS Cropcaster is for crop planning purposes, looking ahead to the coming growing season. A composite soil sample was collected from each replicate area, for each trial location. Soil sampling was completed prior to treatments being applied in the spring of 2018. The soils were then analyzed using ion exchange membrane probes (PRS[®] probes). The soil data is then used by the PRS Cropcaster to model soybean crop growth.

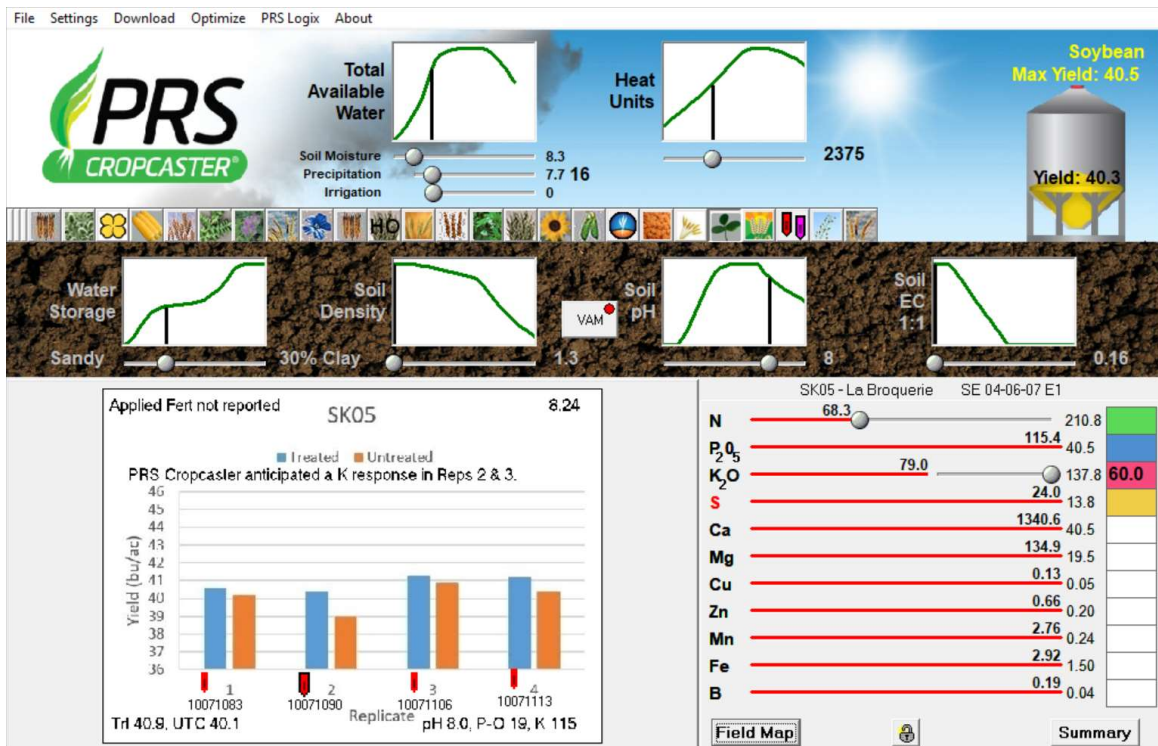
What is shown below is the PRS Cropcaster used in a post-harvest assessment. In these reports, approximate available moisture (soil +rain) and corn heat units for the 2018 crop year were entered into the PRS Cropcaster. The field soil characteristics were also entered. The red lines next to the list of nutrients are like fuel gauges of nutrient supply, the longer the line, the greater the soil supply rate. The number above the line indicates that nutrient’s soil supply rate in lbs/ac (actual). Please note, this is a nutrient supply rate and not a nutrient concentration.



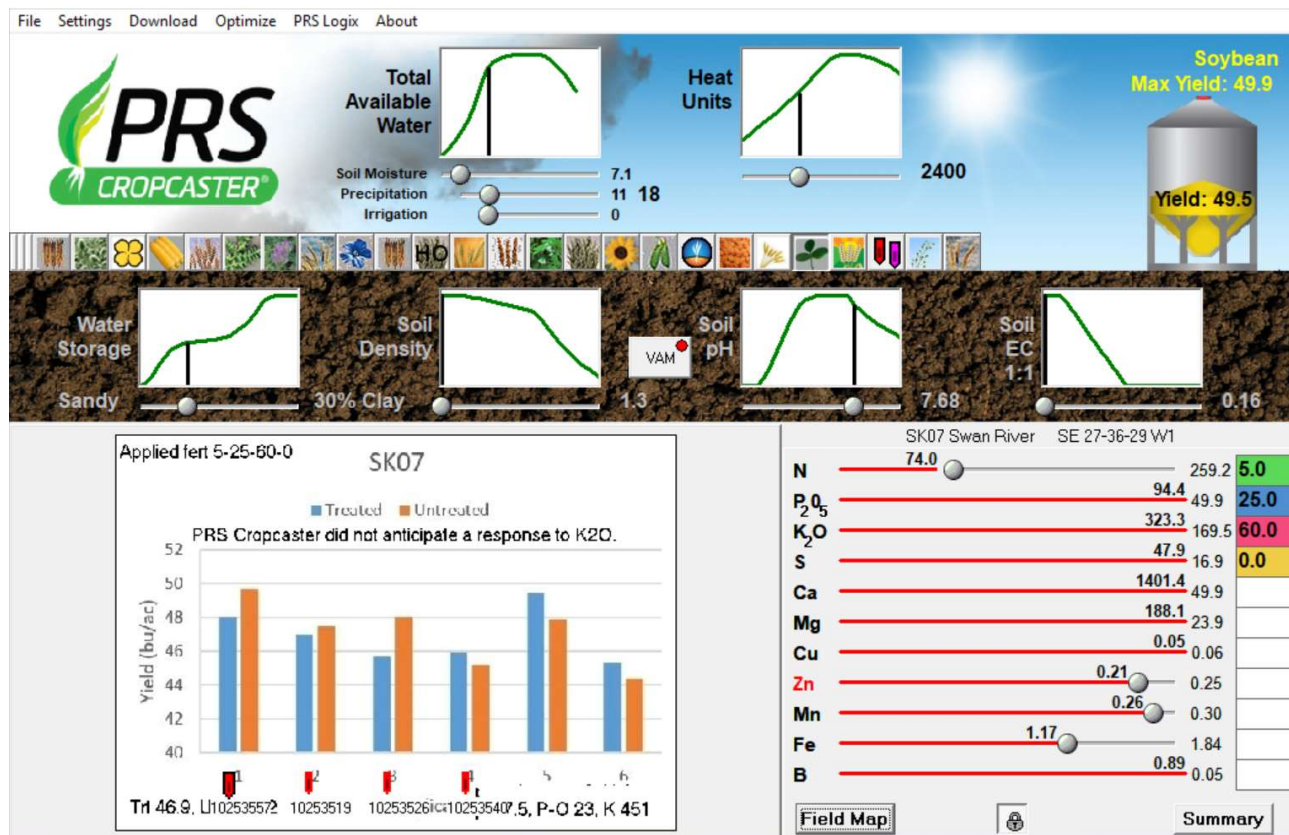
At 2018-SK1 – Long Plain, the PRS Cropcaster anticipated seeing a potassium response in Replicates 2, 3 and 4. A slightly larger response was anticipated for Rep 5 than was realized in this trial. No response was anticipated for Rep 1. This trial location had some interesting soil characteristics that cut through the trial area. PRS analysis of soils collected by replicate and by additional samples by soil colour could differentiate the potential for potassium response at this trial location.



At SK2 – Haywood, no potassium response was anticipated in any of the replicates. The soil supply rate for potassium was essentially “full” for the crop soybeans.



At SK05 – La Broquerie a potassium response was anticipated at this location though slightly larger than that realized.



At SK07, PRS analysis did not anticipate a response from any of the replicates. The PRS Cropcaster in post-harvest assessment (called a PRS Backcast), anticipated a yield ranging from 45-50 bu/ac.

Similar to trial results observed from On-Farm Network Trials in 2017, PRS soil analysis with the PRS Cropcast could predict the potential of a potassium fertilizer response at the trial sites.

Soybean Potassium Fertility Trial

Trial ID: 2018-SK01 – R.M. of Portage la Prairie

Objective: Quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to an untreated check.

TRIAL INFORMATION

Treatment	Band application – 60 lbs K ₂ O/ac
Rural Municipality	Portage la Prairie
Previous Crop	Soybeans
Soil Description	Very Fine Sandy Loam
Tillage	Vertical Till
Planting Date	May 29, 2018
Variety	Dugaldo
Row Spacing	15"
Seeding Rate	---
Plant Stand @ V1	101,000 plants/ac
Harvest Date	October 21, 2018

SOIL PROPERTIES[†]

Soil Test Sample Timing	Spring
Soil K Level	76 ppm

[†] Composite soil sample of the trial area before seeding at 0-6" depth

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	22	110	39	19
Normal	50	79	71	69

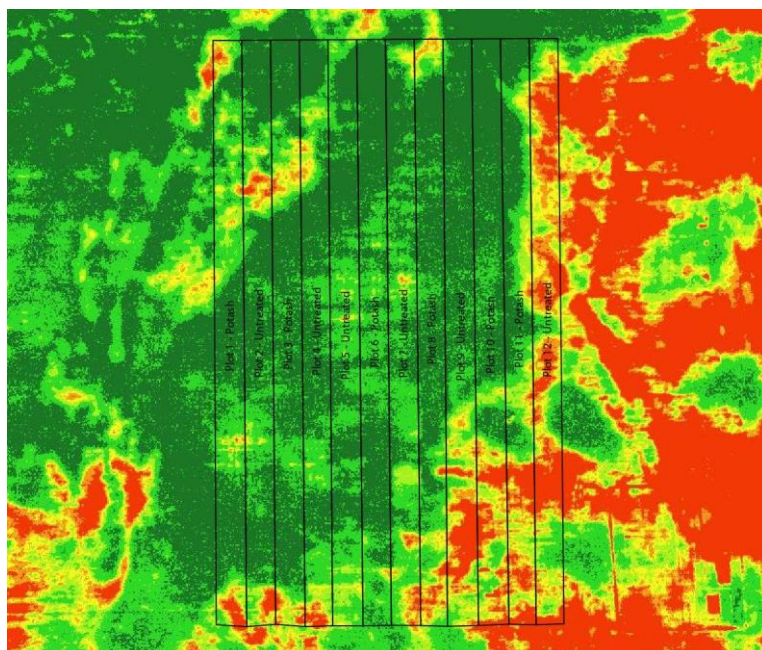
[†] Growing season precipitation (mm)

OVERALL YIELD

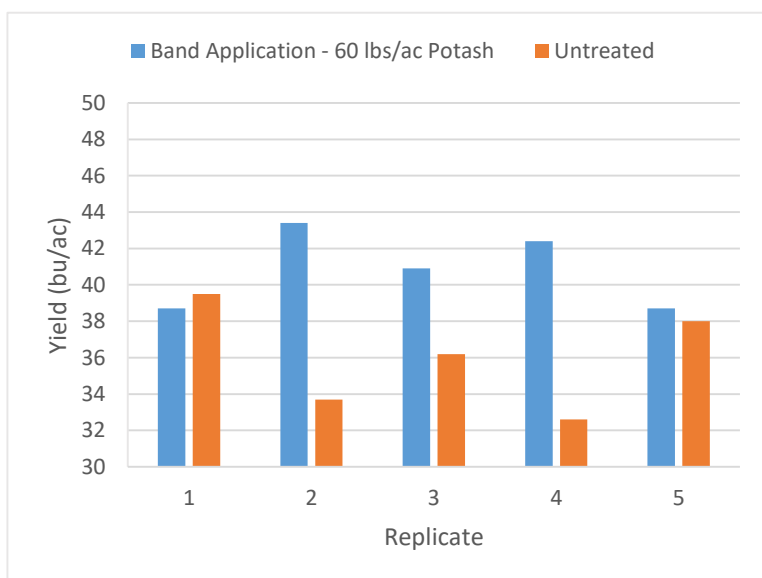
	Mean (bu/ac)
Broadcast – 120 lbs/ac Potash	40.8
Untreated	36.0
Yield Difference	4.8
P-Value	0.0168
CV	9.1%
Significance	Yes

Summary: There was a significant yield difference of 4.8 bu/ac to a band application of potash applied immediately before seeding compared to an untreated check strip. Visual potassium deficiency symptoms were observed in season in the untreated check strips. A spatial analysis of the data by soil zone is recommended to determine if there is a response to potash fertilizer by soil texture.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Potassium Fertility Trial

Trial ID: 2018-SK02 – R.M. of Grey

Objective: Quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to an untreated check.

TRIAL INFORMATION

Treatment	Band application – 60 lbs K ₂ O/ac
Rural Municipality	Grey
Previous Crop	Oats
Soil Description	Loamy Fine Sand
Tillage	Reduced Till
Planting Date	May 23, 2018
Variety	P007A90R
Row Spacing	20"
Seeding Rate	180,000 seeds/ac
Plant Stand @ V1	144,000 plants/ac
Harvest Date	October 19, 2018

SOIL PROPERTIES[†]

Soil Test Sample Timing	Spring
Soil K Level	87 ppm

[†] Composite soil sample of the trial area before seeding at 0-6" depth

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	39	59	56	23
Normal	58	77	77	59

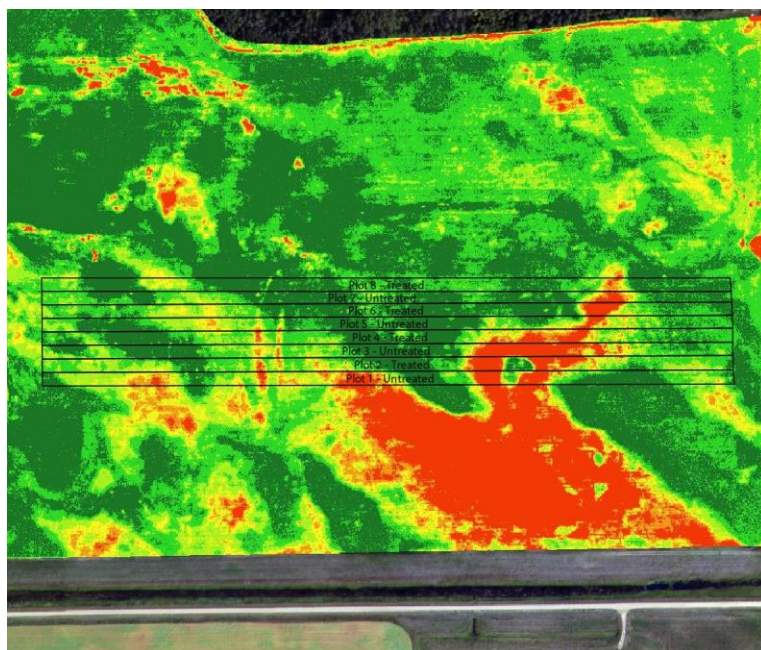
[†] Growing season precipitation (mm)

OVERALL YIELD

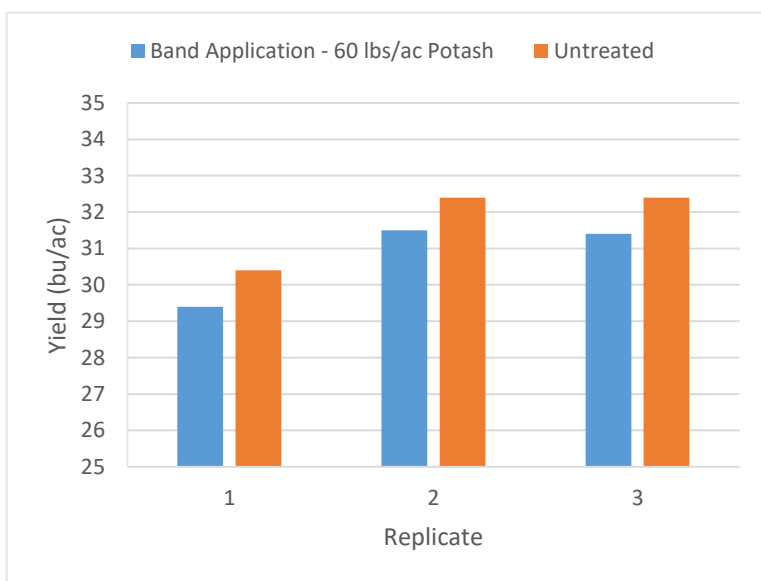
	Mean (bu/ac)
Broadcast – 120 lbs/ac Potash	30.8
Untreated	31.7
Yield Difference	-0.9
P-Value	0.0012
CV	3.8%
Significance	Yes

Summary: There was a significant yield difference of -0.9 bu/ac for a band application of potash applied before seeding compared to an untreated check. There were no visual potassium deficiency symptoms observed within this trial. Rainfall was below normal for the entire growing season.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Potassium Fertility Trial

Trial ID: 2018-SK04 – R.M. of Rockwood

Objective: Quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to an untreated check.

TRIAL INFORMATION

Treatment	Band application – 60 lbs K ₂ O/ac
Rural Municipality	Rockwood
Previous Crop	Corn
Soil Description	Very Fine Sandy Loam
Tillage	Reduced
Planting Date	May 22, 2018
Variety	S007-Y4
Row Spacing	10"
Seeding Rate	185,000 seeds/ac
Plant Stand @ V1	172,000 plants/ac
Harvest Date	October 1, 2018

SOIL PROPERTIES[†]

Soil Test Sample Timing	Spring
Soil K Level	216 ppm

[†] Composite soil sample of the trial area before seeding at 0-6" depth

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	47	90	90	77
Normal	54	92	66	63

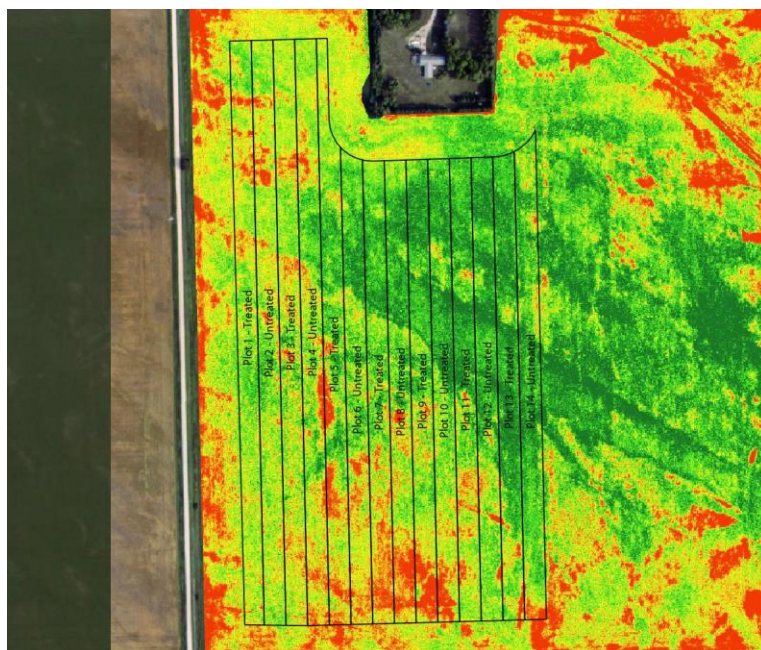
[†] Growing season precipitation (mm)

OVERALL YIELD

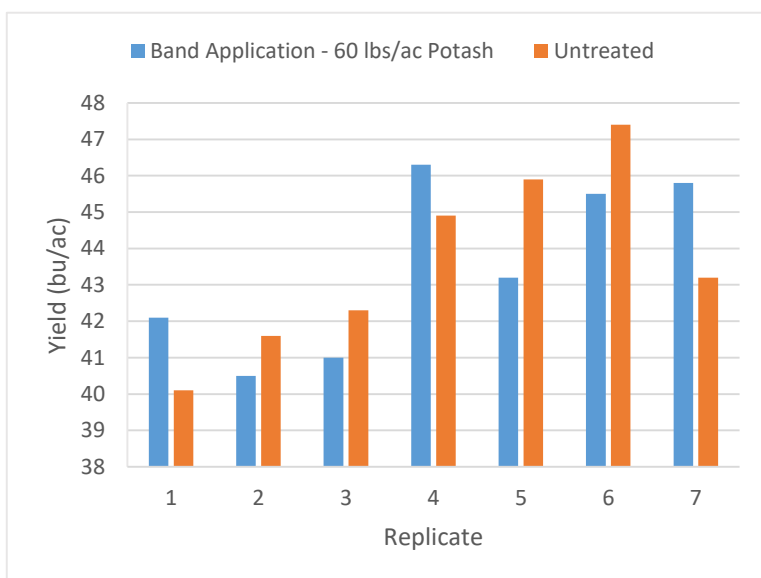
	Mean (bu/ac)
Broadcast – 120 lbs/ac Potash	43.5
Untreated	43.6
Yield Difference	-0.1
P-Value	0.8629
CV	5.5%
Significance	No

Summary: There was no significant yield difference observed for a band application of potash applied at seeding compared to an untreated check when assessed on a full strip basis. A spring composite soils sample of the trial area resulted in a soil K level of 216 ppm; higher than the target of <150 ppm soil test K. A fall zone soil sample resulted in a soil test K <150 ppm in one zone. A spatial analysis of the data is recommended to determine if there is a response to potash by soil zone.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Potassium Fertility Trial

Trial ID: 2018-SK05 – R.M. of La Broquerie

Objective: Quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to an untreated check.

TRIAL INFORMATION

Treatment	Band application – 60 lbs K ₂ O/ac
Rural Municipality	La Broquerie
Previous Crop	Corn
Soil Description	Loamy Fine Sand
Tillage	Reduced Till
Planting Date	May 17, 2018
Variety	Syngenta W5
Row Spacing	10"
Seeding Rate	195,000 seeds/ac
Plant Stand @ V1	155,000 plants/ac
Harvest Date	September 15, 2018

SOIL PROPERTIES[†]

Soil Test Sample Timing	Spring
Soil K Level	115 ppm

[†] Composite soil sample of the trial area before seeding at 0-6" depth

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	59	71	44	84
Normal	58	91	80	66

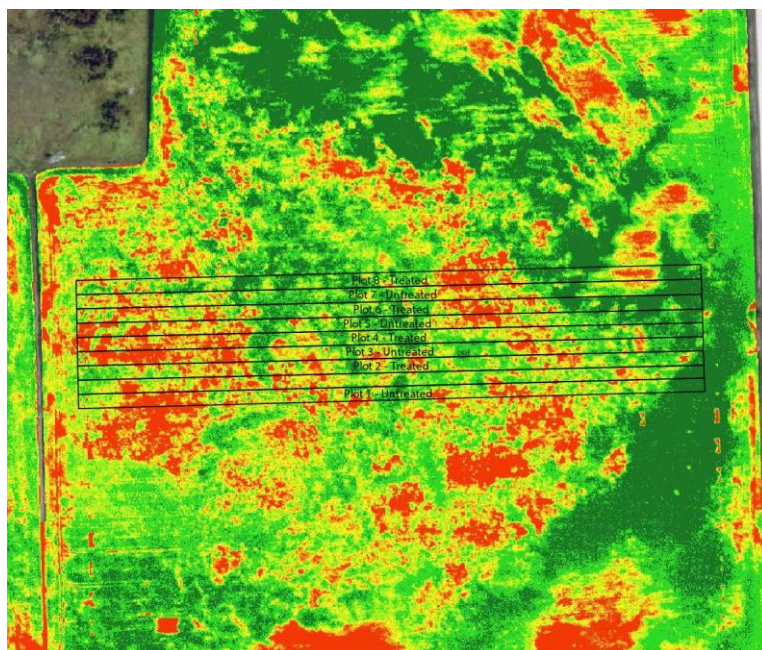
[†] Growing season precipitation (mm)

OVERALL YIELD

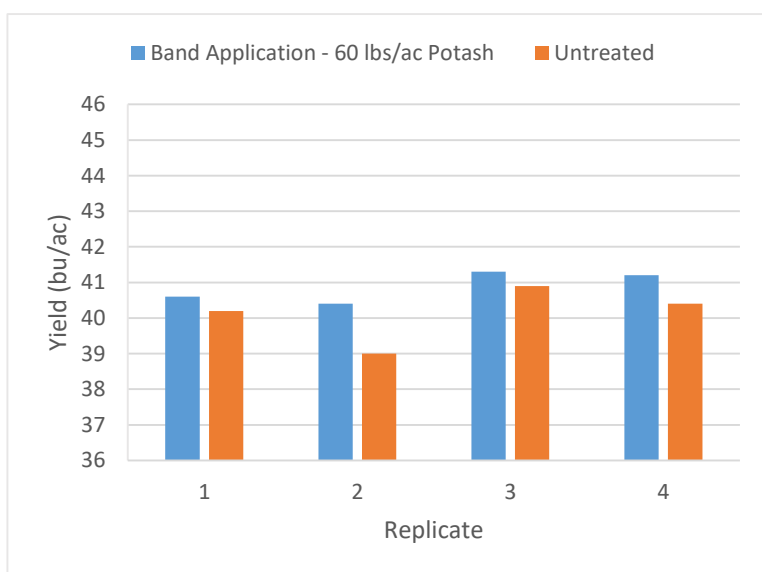
	Mean (bu/ac)
Broadcast – 120 lbs/ac Potash	40.9
Untreated	40.1
Yield Difference	0.8
P-Value	0.0503
CV	1.8%
Significance	No

Summary: There was no significant yield difference between potash applied at seeding compared to an untreated check. There were no visual potassium deficiency symptoms observed in season in the trial. Rainfall was near normal for the growing season.

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



Soybean Potassium Fertility Trial

Trial ID: 2018-SK07 – R.M. of Swan River

Objective: Quantify the agronomic and economic impacts of potassium fertilizer on soybean fields with <150 ppm soil test K in Manitoba. Potash was applied in a band application in the spring at 60 lbs/ac K₂O and compared to an untreated check.

TRIAL INFORMATION

Treatment	Band application – 60 lbs K ₂ O/ac
Rural Municipality	Swan River
Previous Crop	Canola
Soil Description	Clay Loam
Tillage	Conventional
Planting Date	May 15, 2018
Variety	Torro R2
Row Spacing	12"
Seeding Rate	---
Plant Stand @ V1	146,000 plants/ac
Harvest Date	

SOIL PROPERTIES[†]

Soil Test Sample Timing	Fall
Soil K Level	133 ppm

[†] Composite soil sample of the trial area before seeding at 0-6" depth

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	60	113	76	47
Normal	45	84	86	68

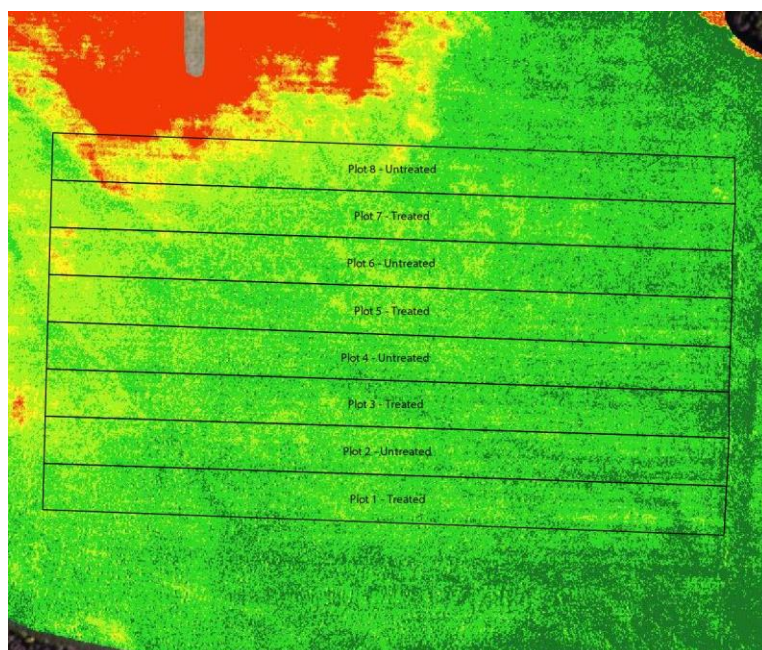
[†] Growing season precipitation (mm)

OVERALL YIELD

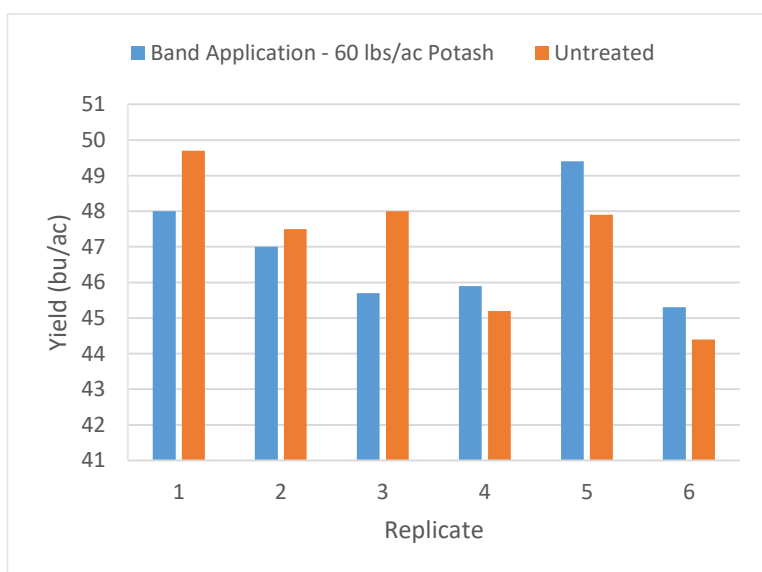
	Mean (bu/ac)
Broadcast – 120 lbs/ac Potash	46.9
Untreated	47.2
Yield Difference	-0.3
P-Value	0.5769
CV	3.3%
Significance	No

Summary: There was no significant yield response to potash applied at seeding and an untreated check. Visual potassium deficiency symptoms were observed in a small area of light textured soils in the northwest corner of the field, but not observed in the majority of the trial area. Rainfall was near normal for the entire growing season.

NDVI FIELD IMAGE – AUGUST 15, 2018



STRIP YIELD



Soybean Seed Treatment Trial

The objective of this study was to quantify the agronomic and economic impacts of seed treatment in soybean fields. Either a fungicide seed treatment or a fungicide + insecticide seed treatment was compared to untreated check strips.

Soybean seed treatment trial summary for eight On-Farm Network trials across Manitoba in 2018.

Trial ID	Rural Municipality	Seeding Date	Seeding Rate '000/ac	Plant Stand @ V1 '000/ac		Yield bu/ac		Yield Difference bu/ac	CV %	P-Value	Statistically Significant @ 95%
				Treated	Untreated	Treated	Untreated				
SST01	Grey	May 8	160	146	143	29.3	29.4	-0.1	2.2	0.7646	No
SST02	Hanover	May 8	165	124	133	44.2	43.8	0.4	2.6	0.2552	No
SST03	De Salaberry	May 8	175	145	141	41.4	41.6	-0.2	3.4	0.8752	No
SST04	Morris	May 9	190	139	146	28.2	29.8	-1.6	5.1	0.0259	Yes
SST05	St. Clements	May 14	183	147	172	36.6	36.3	0.3	3.4	0.4658	No
SST06	Grey	May 17	175	145	124	39.1	39.3	-0.2	5.2	0.8007	No
SST07	Gilbert Plains	May 23	195	166	165	44.3	43.7	0.7	2.3	0.0029	Yes
SST09	Ste. Rose	May 22	180	122	145	38.9	38.4	0.5	6.7	0.4884	No

Soybean Seed Treatment Trial

Trial ID: 2018-SST01 – R.M. of Grey

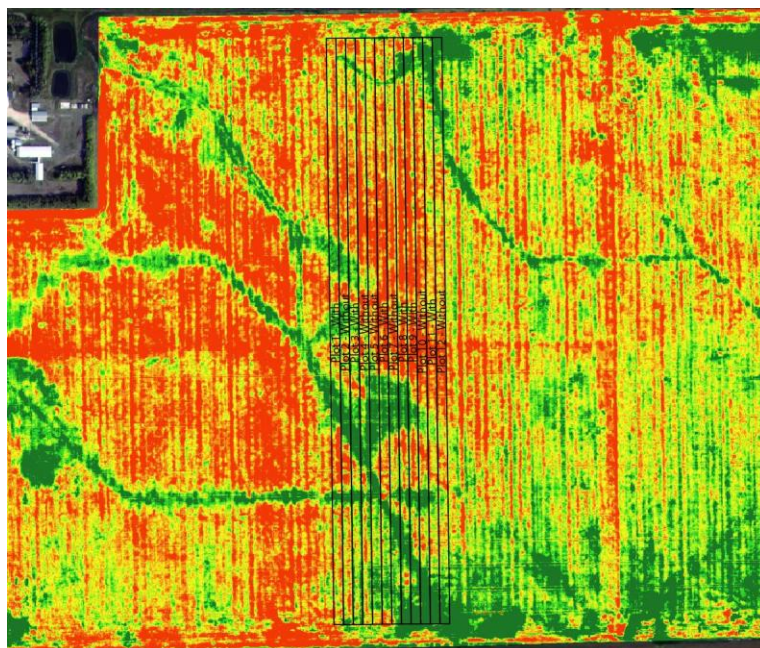
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	EverGol Energy
Rural Municipality	Grey
Previous Crop	Winter Wheat
Soil Description	Clay
Tillage	Conventional
Planting Date	May 8, 2018
Variety	24-10RY
PRR Gene	Rps 1k
Row Spacing	20"
Seeding Rate	160,000 seeds/ac
Plant Stand @V1 (With)	146,000 plants/ac
Plant Stand @V1 (W/O)	143,000 plants/ca
Harvest Date	September 19, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 13, 2018



PRECIPITATION†

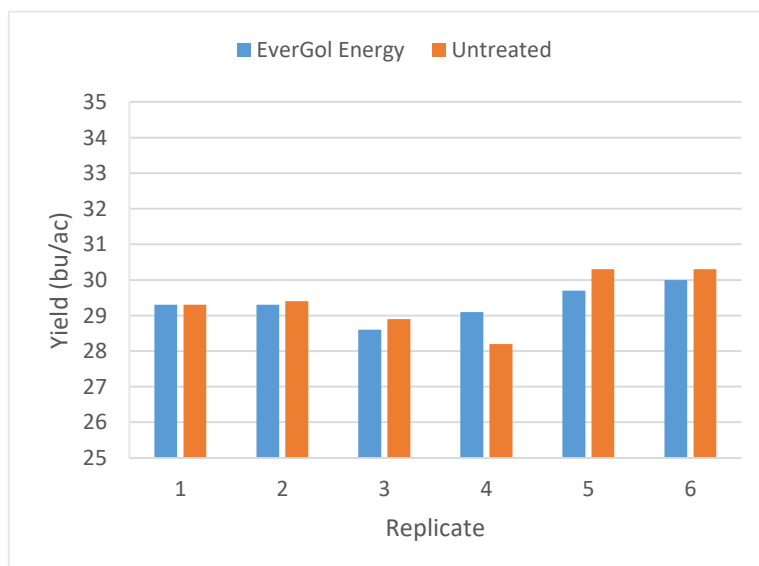
	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
EverGol Energy	29.3
Untreated	29.4
Yield Difference	-0.1
P-Value	0.7646
CV	2.2%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between EverGol Energy seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly different between treatments, and no early season root disease was observed.

Soybean Seed Treatment Trial

Trial ID: 2018-SST02 – R.M. of Hanover

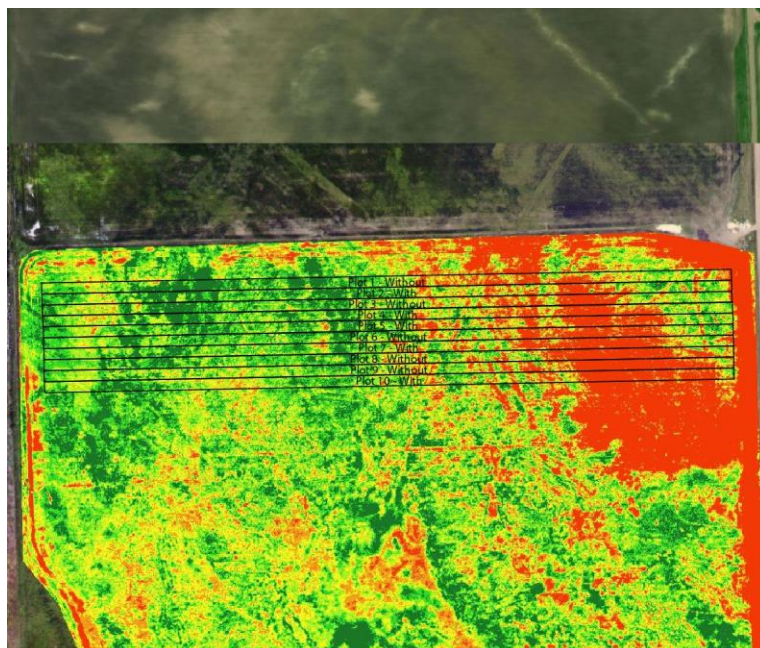
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide and insecticide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cruiser Maxx Vibrance Beans
Rural Municipality	Hanover
Previous Crop	Corn
Soil Description	Very Fine Sandy Loam
Tillage	Conventional
Planting Date	May 8, 2018
Variety	P007A90R
PRR Gene	Rps 1c
Row Spacing	30"
Seeding Rate	165,000 seeds/ac
Plant Stand @V1 (With)	124,000 plants/ac
Plant Stand @V1 (W/O)	133,000 plants/ac
Harvest Date	September 4, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 11, 2018



PRECIPITATION†

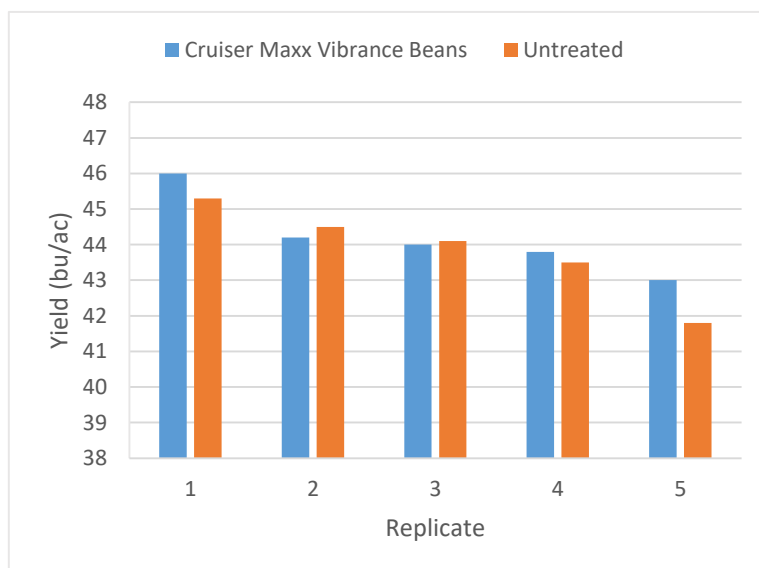
	May	June	July	Aug
Rainfall	41	61	64	54
Normal	58	90	81	72

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Cruise Maxx Vibrance Beans	44.2
Untreated	43.8
Yield Difference	0.4
P-Value	0.2552
CV	2.6%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between Cruiser Maxx Vibrance Beans seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly different between treatments, and no early season root disease was observed.

Soybean Seed Treatment Trial

Trial ID: 2018-SST03 – R.M. of De Salaberry

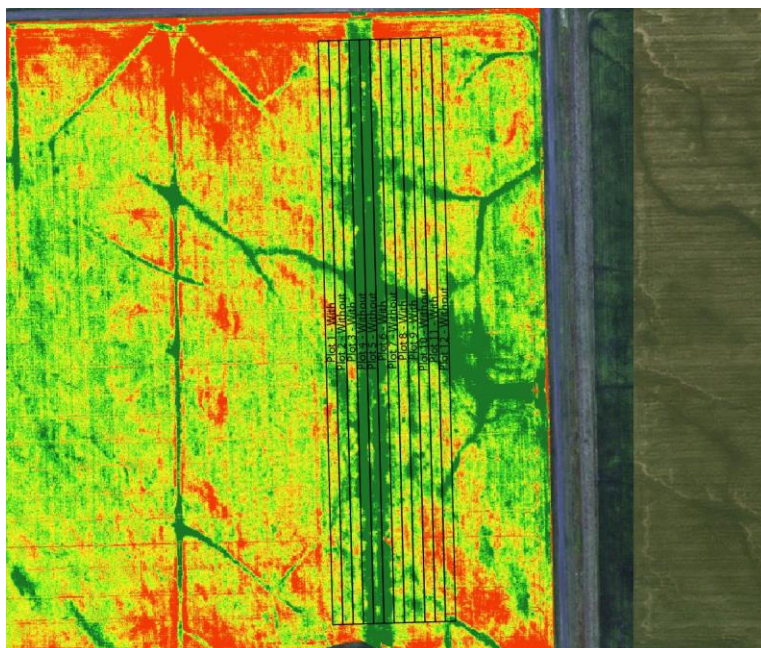
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide and insecticide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cruiser Maxx Vibrance Beans
Rural Municipality	De Salaberry
Previous Crop	Oats
Soil Description	Clay
Tillage	Conventional
Planting Date	May 8, 2018
Variety	25-10RY
PRR Gene	Rps 1c
Row Spacing	15"
Seeding Rate	175,000 seeds/ac
Plant Stand @V1 (With)	145,000 plants/ac
Plant Stand @V1 (W/O)	141,000 plants/ac
Harvest Date	September 9, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 13, 2018



PRECIPITATION†

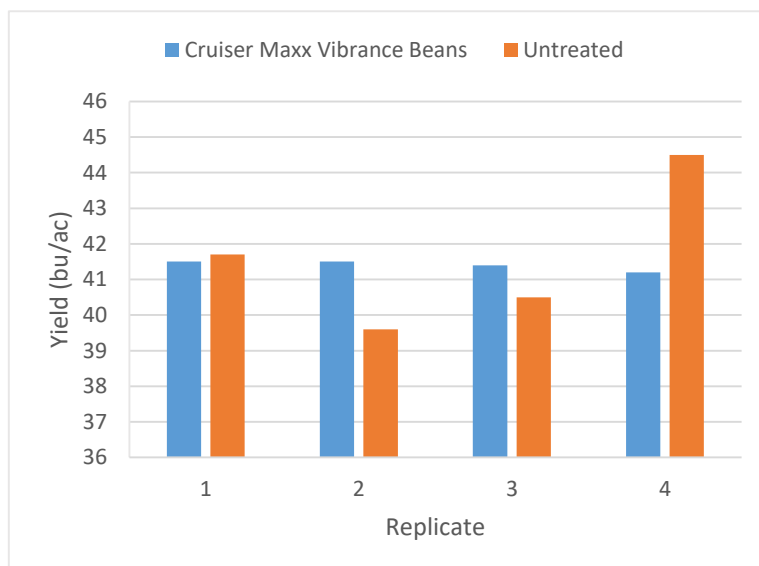
	May	June	July	Aug
Rainfall	45	68	34	39
Normal	53	95	70	52

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Cruiser Maxx Vibrance Beans	41.4
Untreated	41.6
Yield Difference	- 0.2
P-Value	0.8752
CV	3.4%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between Cruiser Maxx Vibrance Beans seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly different between treatments, and no early season root disease was observed.

Soybean Seed Treatment Trial

Trial ID: 2018-SST04 – R.M. of Morris

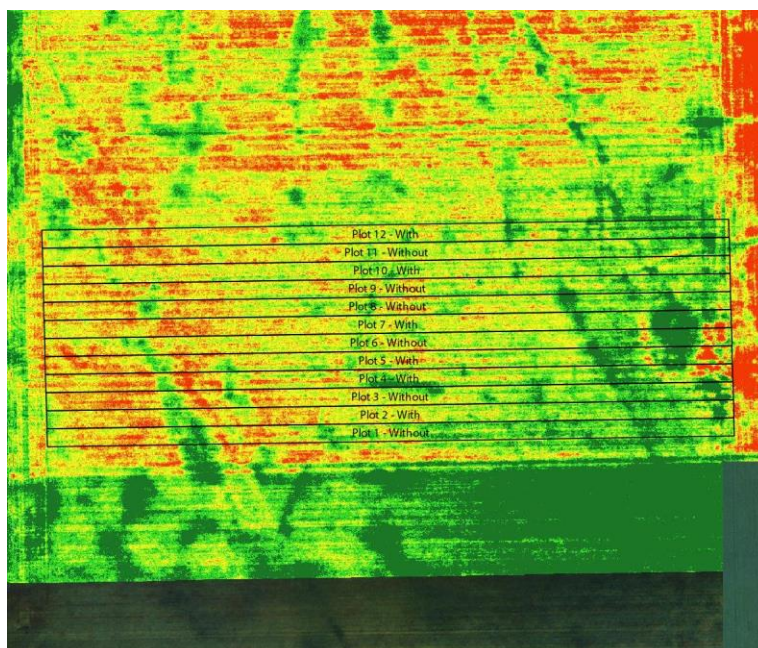
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide and insecticide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cruiser Maxx Vibrance Beans
Rural Municipality	Morris
Previous Crop	Spring Wheat
Soil Description	Clay
Tillage	Conventional
Planting Date	May 9, 2018
Variety	S008-N2
PRR Gene	---
Row Spacing	15"
Seeding Rate	190,000 seeds/ac
Plant Stand @V1 (With)	139,000 plants/ac
Plant Stand @V1 (W/O)	146,000 plants/ac
Harvest Date	September 19, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 13, 2018



PRECIPITATION†

	May	June	July	Aug
Rainfall	28	85	38	27
Normal	54	86	72	65

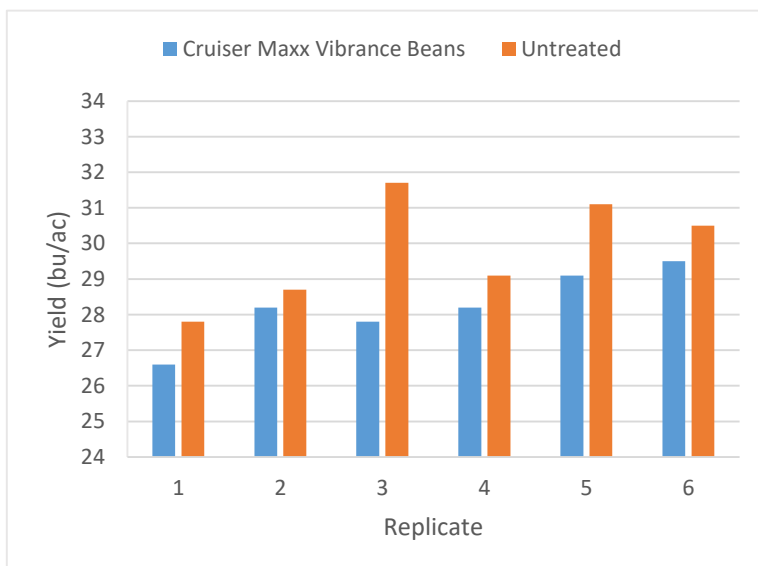
† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Cruiser Maxx Vibrance Beans	28.2
Untreated	29.8
Yield Difference	- 1.6
P-Value	0.0259
CV	5.1%
Significance	Yes

Summary: There was a significant yield difference of -1.6 bu/ac between Cruiser Maxx Vibrance Beans seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly different between treatments, and no early season root disease was observed.

STRIP YIELD



Soybean Seed Treatment Trial

Trial ID: 2018-SST05 – R.M. of St. Clements

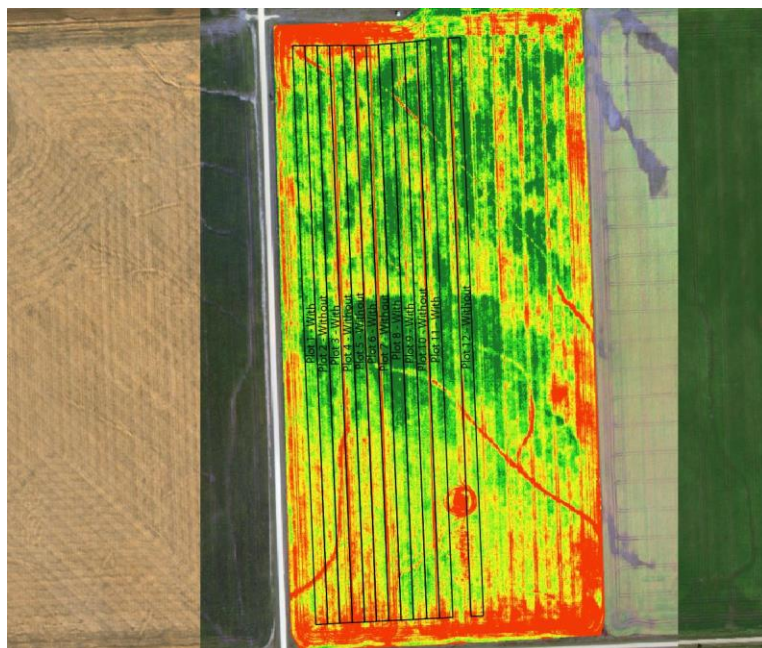
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	EverGol Energy
Rural Municipality	St. Clements
Previous Crop	Spring Wheat
Soil Description	Clay
Tillage	Conventional
Planting Date	May 14, 2018
Variety	24-10RY
PRR Gene	Rps 1k
Row Spacing	10"
Seeding Rate	183,000 seeds/ac
Plant Stand @V1 (With)	147,000 plants/ac
Plant Stand @V1 (W/O)	172,000 plants/ac
Harvest Date	September 30, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 13, 2018



PRECIPITATION†

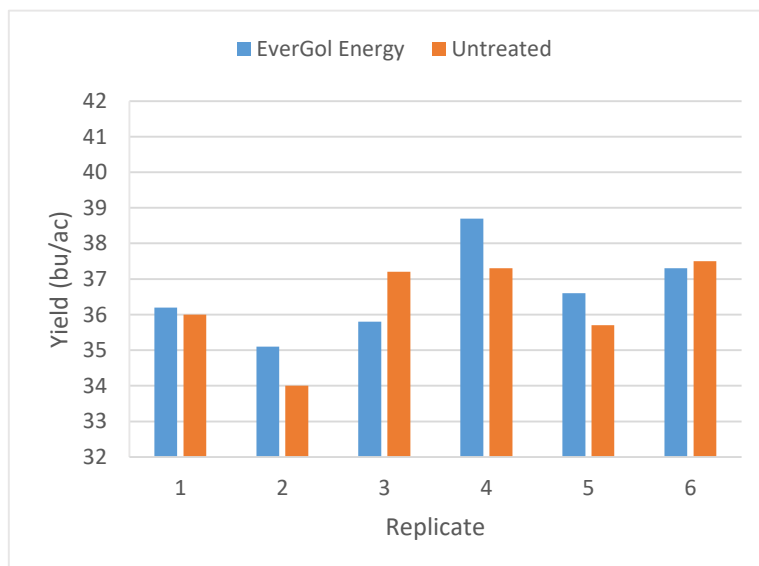
	May	June	July	Aug
Rainfall	53	120	25	45
Normal	54	90	73	73

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
EverGol Energy	36.6
Untreated	36.3
Yield Difference	0.3
P-Value	0.4658
CV	3.4%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between EverGol Energy seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly different between treatments, and no early season root disease was observed.

Soybean Seed Treatment Trial

Trial ID: 2018-SST06 – R.M. of Grey

Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide seed treatment was compared to an untreated check strip.

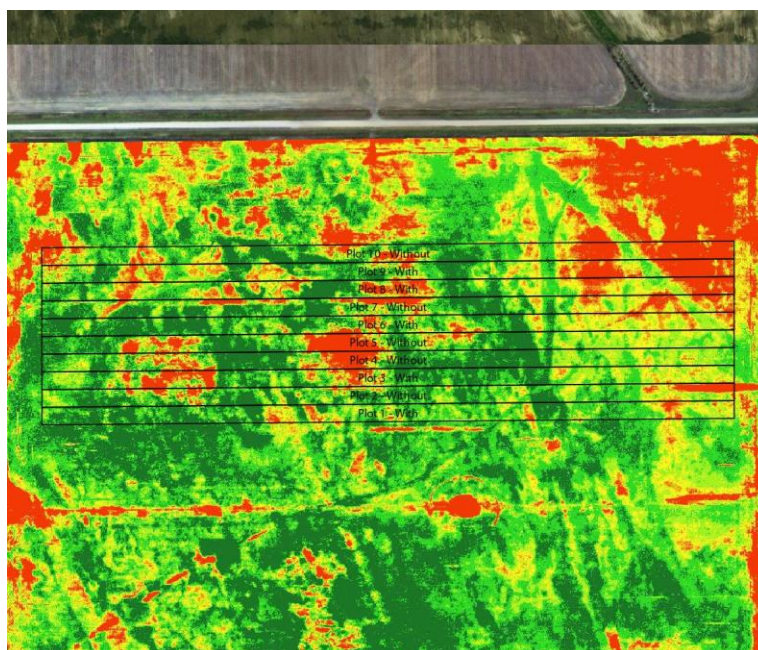
TRIAL INFORMATION

Treatment	EverGol Energy
Rural Municipality	Grey
Previous Crop	Corn
Soil Description	Loamy Fine Sand
Tillage	Conventional
Planting Date	May 17, 2018
Variety	DKB005-52
PRR Gene	Rps 1c
Row Spacing	30"
Seeding Rate	175,000 seeds/ac
Plant Stand @V1 (With)†	145,000 plants/ac
Plant Stand @V1 (W/O)	124,000 plants/ac
Harvest Date	October 17, 2018

† Statistically higher plant stand vs. untreated

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 13, 2018

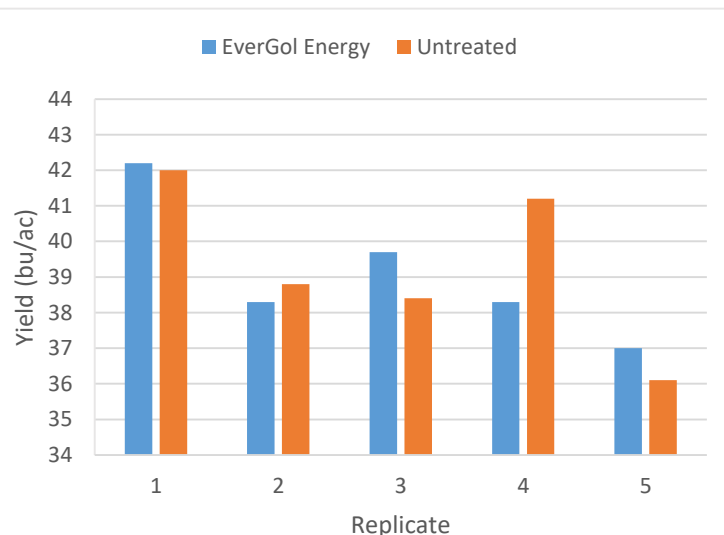


PRECIPITATION†

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

† Growing season precipitation (mm)

STRIP YIELD



OVERALL YIELD

	Mean (bu/ac)
EverGol Energy	39.1
Untreated	39.3
Yield Difference	- 0.2
P-Value	0.8007
CV	5.2%
Significance	No

Summary: There was no significant yield difference between EverGol Energy seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was significantly higher for soybeans treated with EverGol Energy, and no early season root disease was observed.

Soybean Seed Treatment Trial

Trial ID: 2018-SST07 – R.M. of Gilbert Plains

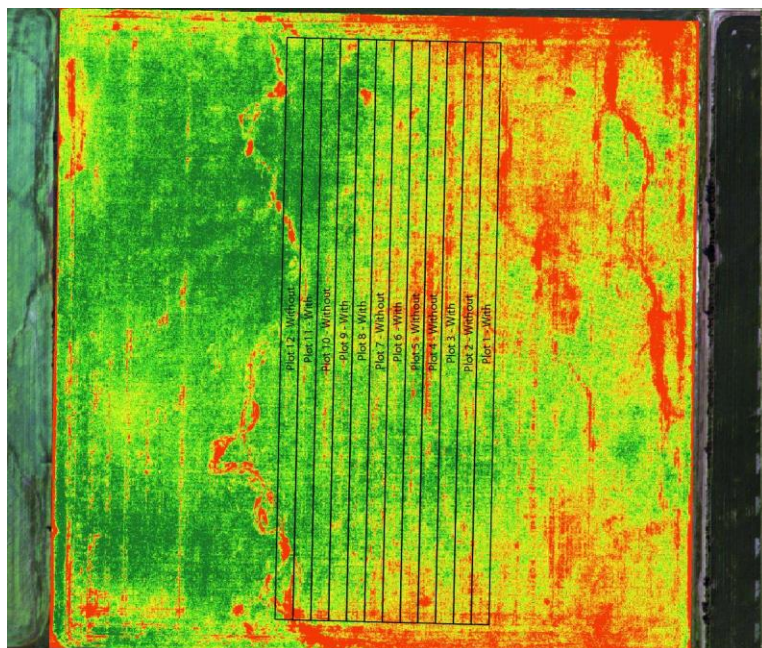
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide and insecticide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cruiser Maxx Vibrance Beans
Rural Municipality	Gilbert Plains
Previous Crop	Canola
Soil Description	Loam to Clay Loam
Tillage	No-Till
Planting Date	May 23, 2018
Variety	22-60RY
PRR Gene	Rps 1c
Row Spacing	9.8"
Seeding Rate	195,000 seeds/ac
Plant Stand @V1 (With)	166,000 plants/ac
Plant Stand @V1 (W/O)	165,000 plants/ac
Harvest Date	October 19, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 16, 2018

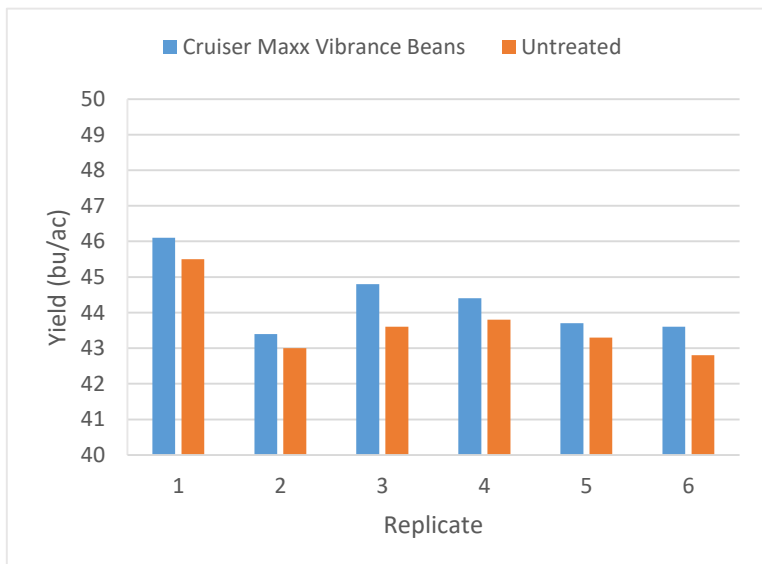


PRECIPITATION†

	May	June	July	Aug
Rainfall	48	100	60	7
Normal	54	87	73	63

† Growing season precipitation (mm)

STRIP YIELD



OVERALL YIELD

	Mean (bu/ac)
Cruiser Maxx Vibrance Beans	44.3
Untreated	43.7
Yield Difference	0.6
P-Value	0.0029
CV	2.3%
Significance	Yes

Summary: There was a significant yield difference of 0.6 bu/ac between Cruiser Maxx Vibrance Beans seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly difference between treatments. Fusarium root rot was present at growth stage V1 in all treatments.

Soybean Seed Treatment Trial

Trial ID: 2018-SST09 – R.M. of Ste. Rose

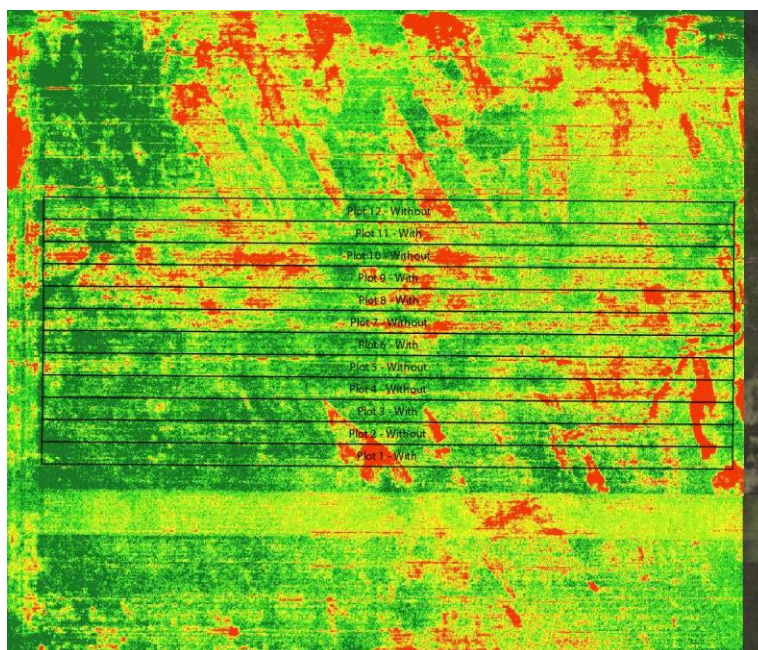
Objective: Quantify the agronomic and economic impacts of a seed treatment in soybean fields. A fungicide and insecticide seed treatment was compared to an untreated check strip.

TRIAL INFORMATION

Treatment	Cruiser Maxx Vibrance Beans
Rural Municipality	Ste. Rose
Previous Crop	Canola
Soil Description	Very Fine Sandy Loam
Tillage	Conventional
Planting Date	May 22, 2018
Variety	Notus R2
PRR Gene	Rps 1c
Row Spacing	20"
Seeding Rate	180,000 seeds/ac
Plant Stand @V1 (With)	122,000 plants/ac
Plant Stand @V1 (W/O)	145,000 plants/ac
Harvest Date	October 12, 2018

With = Treated, W/O = Untreated, PRR = Phytophthora Root Rot

NDVI FIELD IMAGE – AUGUST 9, 2018



PRECIPITATION†

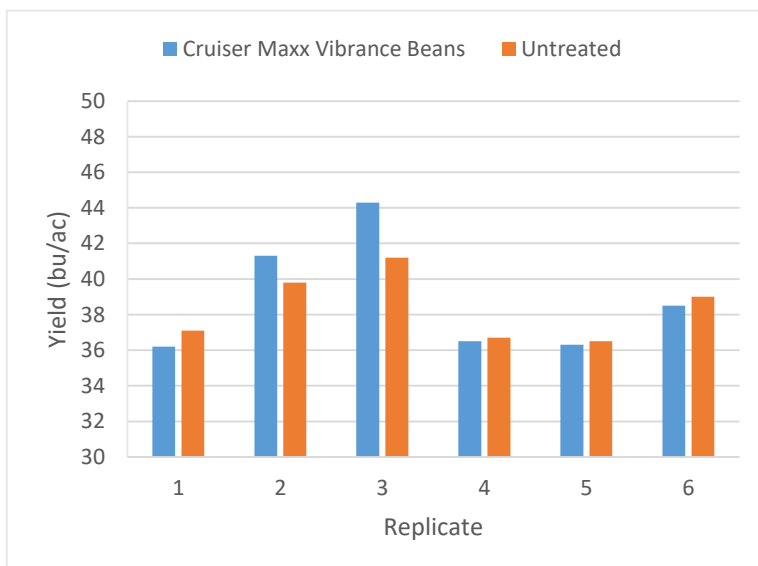
	May	June	July	Aug
Rainfall	44	52	71	14
Normal	54	87	73	63

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
Cruiser Maxx Vibrance Beans	38.9
Untreated	38.4
Yield Difference	0.5
P-Value	0.4884
CV	6.7%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between Cruiser Maxx Vibrance Beans seed treatment and untreated check strips. That plant stand at growth stage V1 (first trifoliolate) was not significantly difference between treatments, and no early season root disease was observed.

The objective of this study was to quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of fungicide was compared to untreated check strips.

Soybean foliar fungicide trial summary for nine On-Farm Network trials across Manitoba in 2018.

Trial ID	Rural Municipality	Previous Crop	Seeding Date	Row Spacing	Plant Stand @ Harvest	Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
						Treated	Untreated				
				inch	'000/ac	bu/ac		bu/ac	%		
SF01	Grey	Winter Wheat	May 8	20	139	32.5	32.4	0.1	5.9	0.9286	No
SF02	Dauphin	Canola	May 16	12	155	46.3	49.0	-2.7	4.8	0.0468	Yes
SF03	Glenella Lansdwone	Winter Wheat	---	10	150	33.3	33.6	-0.3	5.5	0.7317	No
SF04	Glenboro South Cypress	Corn	May 16	15	141	34.7	35.0	-0.3	3.5	0.6205	No
SF05	Dufferin	Oats	May 15	20	155	22.3	22.8	-0.4	2.0	0.0772	No
SF06	St. Andrews	Spring Wheat	May 15	10	141	42.7	41.7	1.0	2.8	0.0394	Yes
SF07	Macdonald	Corn	May 11	20	151	31.5	31.8	-0.3	1.9	0.4110	No
SF08	La Broquerie	Corn	May 22	10	203	41.5	40.4	1.1	4.5	0.0051	Yes
SF09	Westlake Gladstone	Winter Wheat	May 8	10	161	30.9	31.4	-0.5	6.6	0.6574	No

Soybean Foliar Fungicide Trial

Trial ID: 2018-SF01 – R.M. of Grey

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	Grey
Previous Crop	Winter Wheat
Soil Texture	Clay
Tillage	Conventional
Planting Date	May 8, 2018
Variety	24-10RY
Row Spacing	20"
Plant Stand @ Harvest	139,000 plants/ac
Application Date	June 30, 2018
Application Timing	R1 – first flower
Application Rate	230 mL/ac
Harvest Date	September 19, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

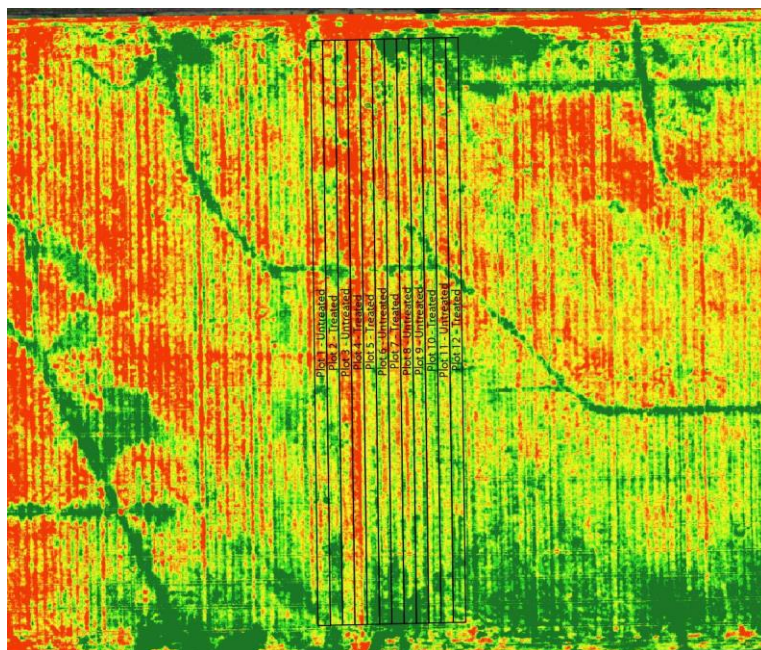
	White Mold	Brown Spot
Delaro	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

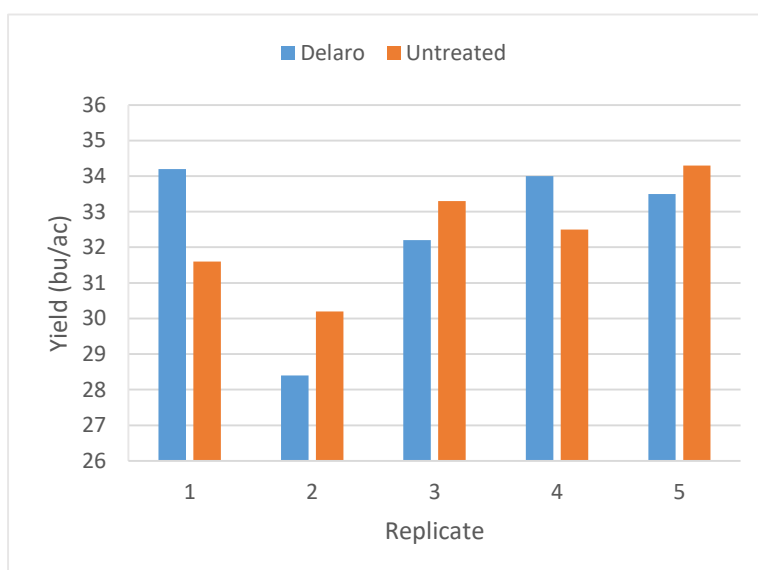
OVERALL YIELD

	Mean (bu/ac)
Delaro	32.5
Untreated	32.4
Yield Difference	0.1
P-Value	0.9286
CV	5.9%
Significance	No

NDVI FIELD IMAGE – AUG 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between a single application of Delaro and untreated check strips applied at R1 (first flower). Rainfall was below normal for the entire growing season and disease pressure was low.

Soybean Foliar Fungicide Trial

Trial ID: 2018-SF02 – R.M. of Dauphin

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Cotegra vs. Untreated
Rural Municipality	Dauphin
Previous Crop	Canola
Soil Texture	Loam to Clay - Loam
Tillage	Conventional
Planting Date	May 16, 2018
Variety	Notus R2
Row Spacing	12"
Plant Stand @ Harvest	155,000 plants/ac
Application Date	July 11, 2018
Application Timing	R2 – full flower
Application Rate	280 mL/ac
Harvest Date	September 13, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	38	104	91	3
Normal	54	87	73	63

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

	White Mold	Brown Spot
Cotegra	0	1.2
Untreated	0	1.4
P-Value	n/a	0.5796
Significance	n/a	No

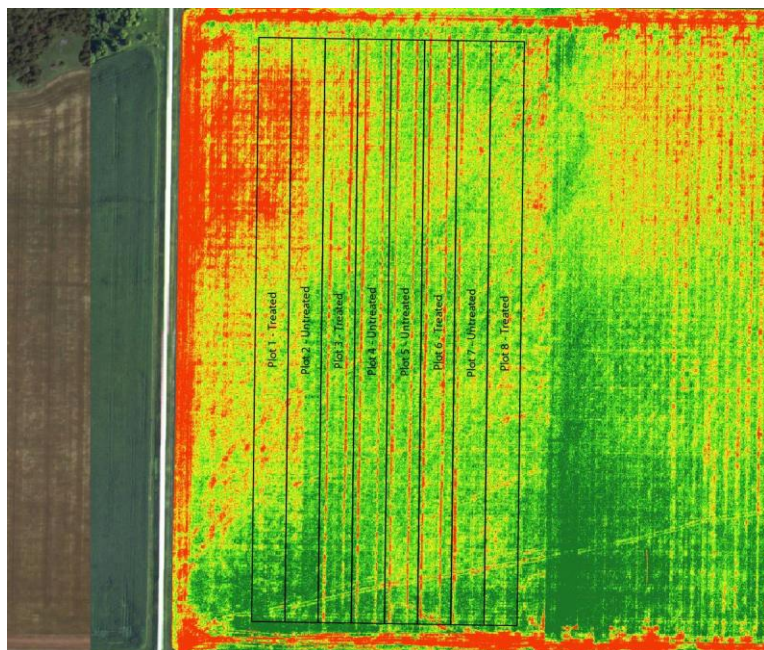
† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

OVERALL YIELD

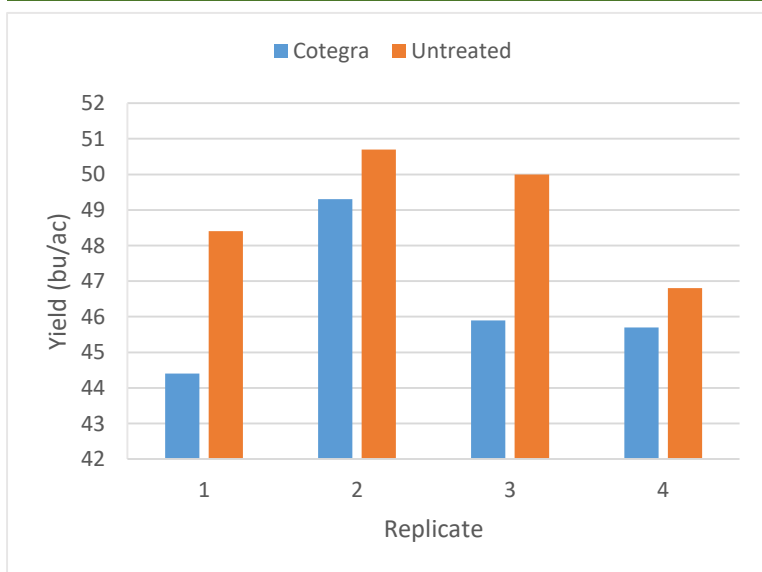
	Mean (bu/ac)
Cotegra	46.3
Untreated	49.0
Yield Difference	-2.6
P-Value	0.0468
CV	4.8%
Significance	Yes

Summary: There was a significant yield difference of -2.6 bu/ac between a single application of Cotegra and untreated check strips applied at R2 (full flower). Rainfall was at or above normal during June and July as soybeans entered the reproductive phase. Disease pressure was low and there is no clear indication of why there was a negative yield response observed at this site.

NDVI FIELD IMAGE – AUG 9, 2018



STRIP YIELD



Soybean Foliar Fungicide Trial

Trial ID: 2018-SF03 – R.M. of Glenella-Lansdowne

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Cotegra vs. Untreated
Rural Municipality	Glenella-Lansdowne
Previous Crop	Winter Wheat
Soil Texture	Loamy Fine Sand
Tillage	Conventional
Planting Date	---
Variety	P007A90R
Row Spacing	10"
Plant Stand @ Harvest	150,000 plants/ac
Application Date	July 3, 2018
Application Timing	R1 – first flower
Application Rate	280 mL/ac
Harvest Date	October 19, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	46	42	67	37
Normal	50	77	62	64

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

	White Mold	Brown Spot
Cotegra	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

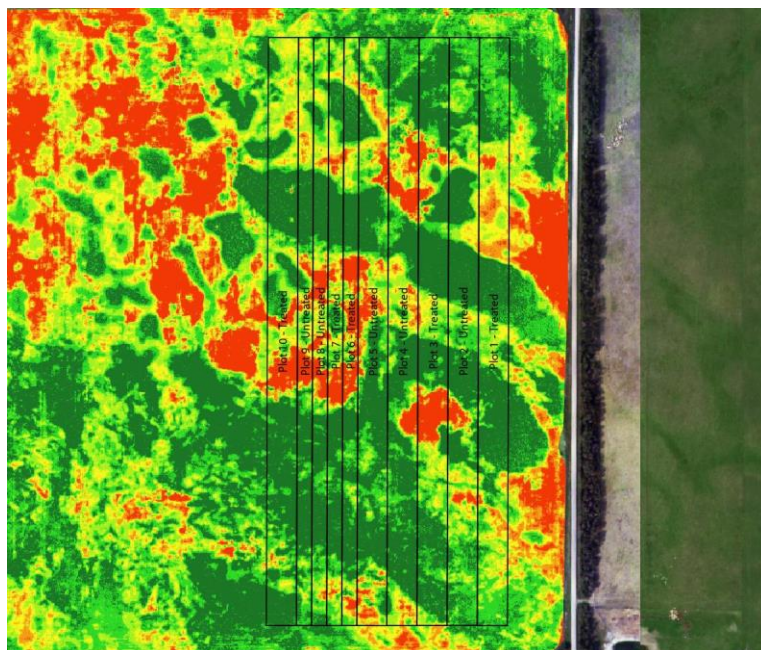
† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

OVERALL YIELD

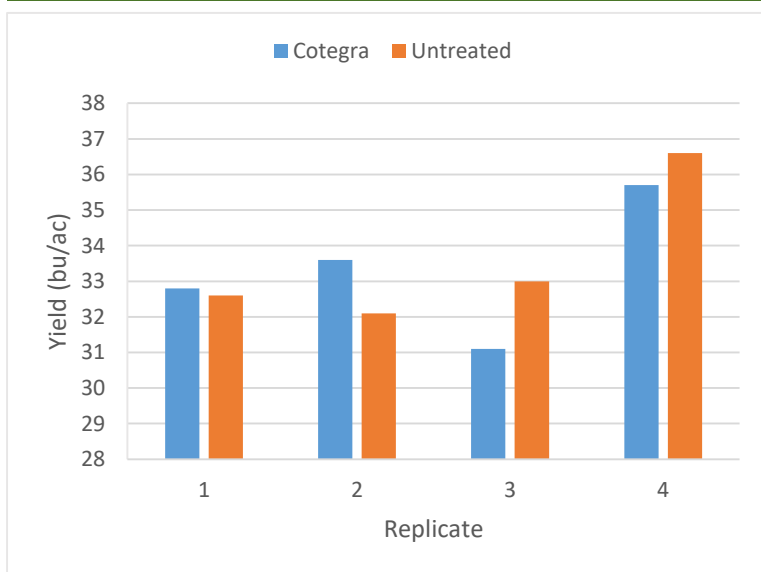
	Mean (bu/ac)
Cotegra	33.3
Untreated	33.6
Yield Difference	-0.3
P-Value	0.7317
CV	5.5%
Significance	No

Summary: There was no significant yield difference between a single application of Cotegra and untreated check strips applied at R1 (first flower). Rainfall was below normal for the entire growing season and disease pressure was low.

NDVI FIELD IMAGE – AUG 11, 2018



STRIP YIELD



Soybean Foliar Fungicide Trial

Trial ID: 2018-SF04 – R.M. of Glenboro-South Cypress

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Priaxor vs. Untreated
Rural Municipality	Glenboro-South Cypress
Previous Crop	Corn
Soil Texture	Silty Clay Loam
Tillage	---
Planting Date	May 16, 2018
Variety	24-10RY
Row Spacing	15"
Plant Stand @ Harvest	141,000 plants/ac
Application Date	July 6, 2018
Application Timing	R2 – full flower
Application Rate	180 mL/ac
Harvest Date	September 10, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	39	58	62	21
Normal	54	76	75	66

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

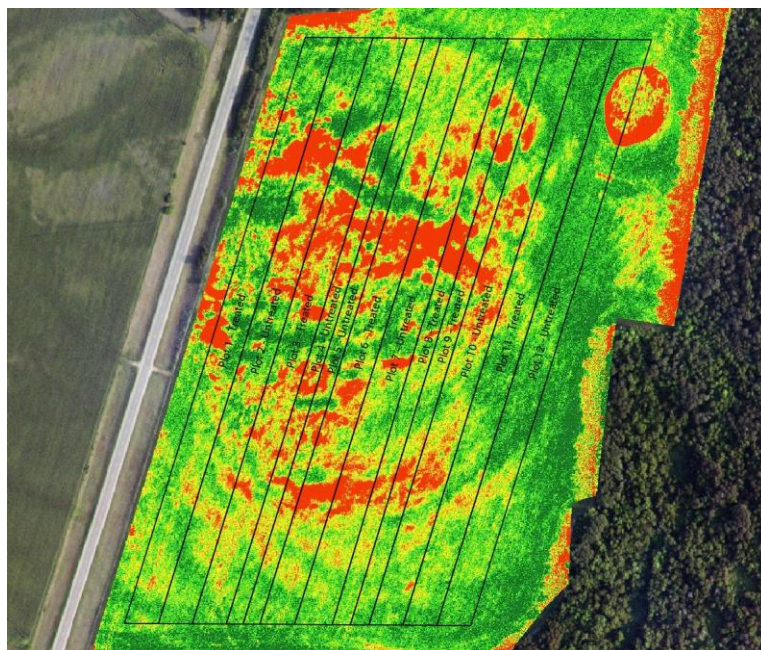
	White Mold	Brown Spot
Priaxor	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

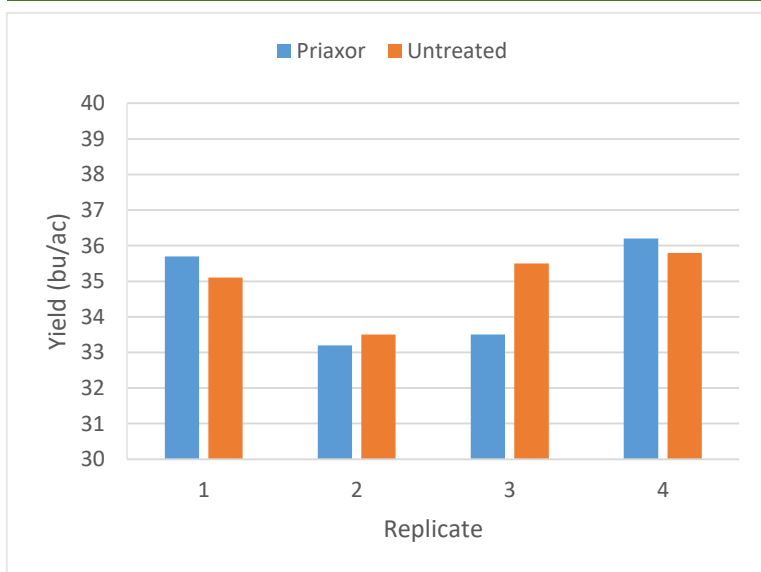
OVERALL YIELD

	Mean (bu/ac)
Priaxor	34.7
Untreated	35.0
Yield Difference	-0.3
P-Value	0.6205
CV	3.5%
Significance	No

NDVI FIELD IMAGE – AUG 10, 2018



STRIP YIELD



Summary: There was no significant yield difference between a single application of Priaxor and untreated check strips applied at R2 (full flower). Rainfall was below normal for the entire growing season and disease pressure was low.

Soybean Foliar Fungicide Trial

Trial ID: 2018-SF05 – R.M. of Dufferin

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	Dufferin
Previous Crop	Oats
Soil Texture	Clay
Tillage	Conventional
Planting Date	May 15, 2018
Variety	TH 88007R2X
Row Spacing	20"
Plant Stand @ Harvest	155,000 plants/ac
Application Date	July 3, 2018
Application Timing	R2 – full flower
Application Rate	230 mL/ac
Harvest Date	September 18, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

[†] Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6[†]

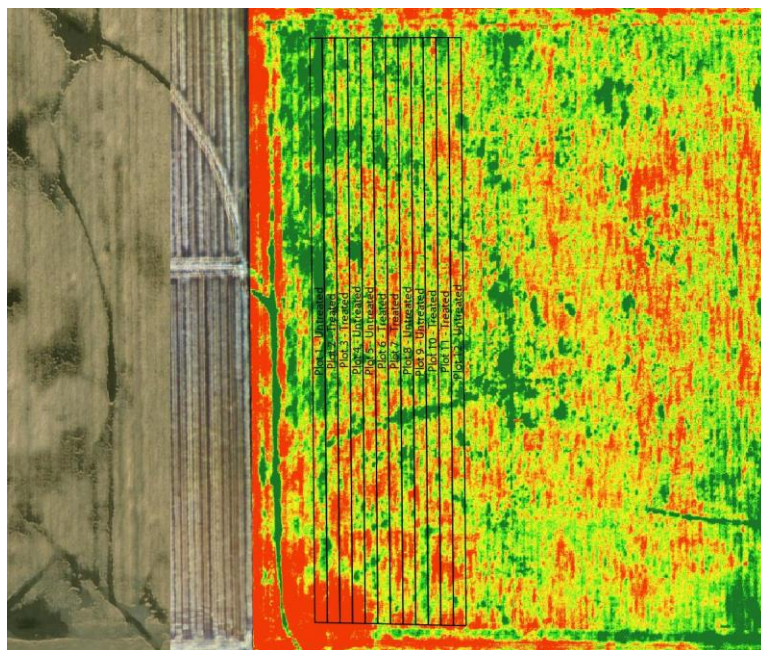
	White Mold	Brown Spot
Delaro	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

[†] Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

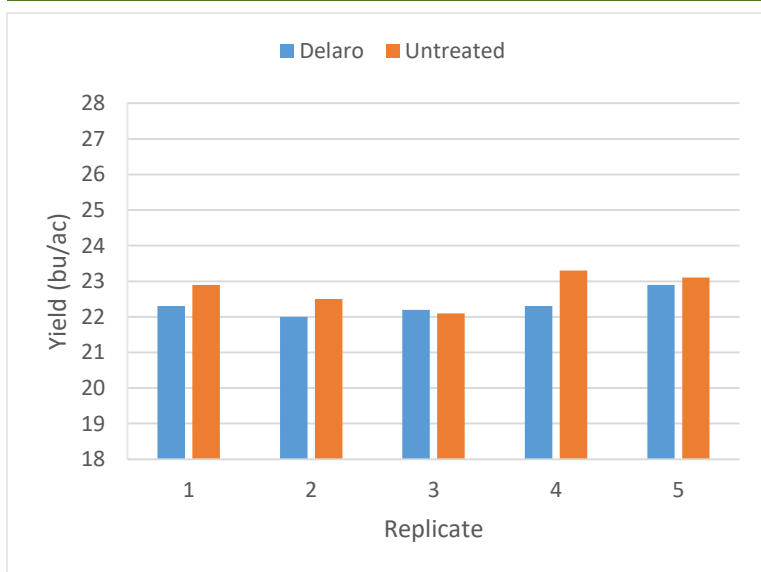
OVERALL YIELD

	Mean (bu/ac)
Delaro	22.3
Untreated	22.8
Yield Difference	-0.5
P-Value	0.0772
CV	2.0%
Significance	No

NDVI FIELD IMAGE – AUG 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between a single application of Delaro and untreated check strips applied at R2 (full flower). Rainfall was below normal for the entire growing season and disease pressure was low.

Soybean Foliar Fungicide Trial

Trial ID: 2018-SF06 – R.M. of St. Andrews

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	St. Andrews
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Planting Date	May 15, 2018
Variety	P007A90R
Row Spacing	10"
Plant Stand @ Harvest	141,000 plants/ac
Application Date	July 9, 2018
Application Timing	R2 – full flower
Application Rate	230 mL/ac
Harvest Date	October 1, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	37	70	52	78
Normal	54	92	66	63

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

	White Mold	Brown Spot
Delaro	0	1
Untreated	0	1
P-Value	n/a	n/a
Significance	n/a	n/a

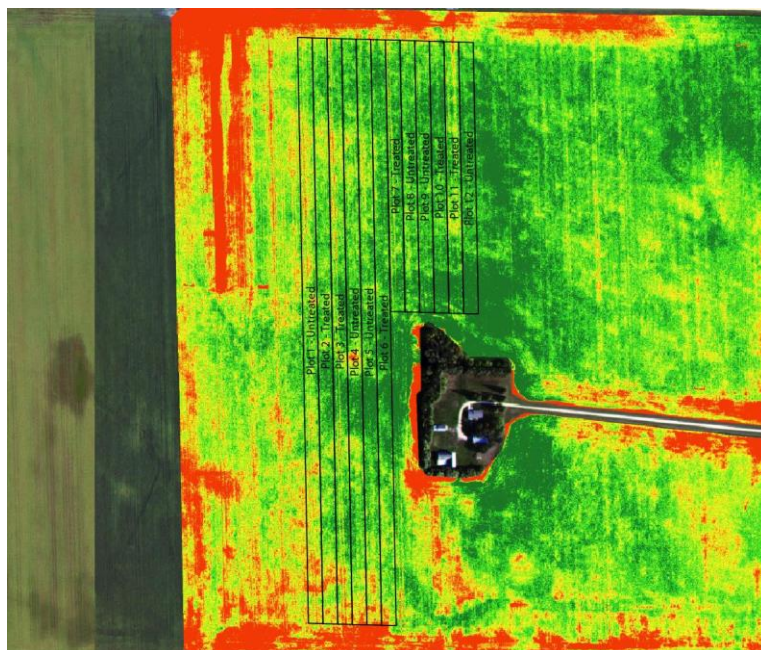
† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

OVERALL YIELD

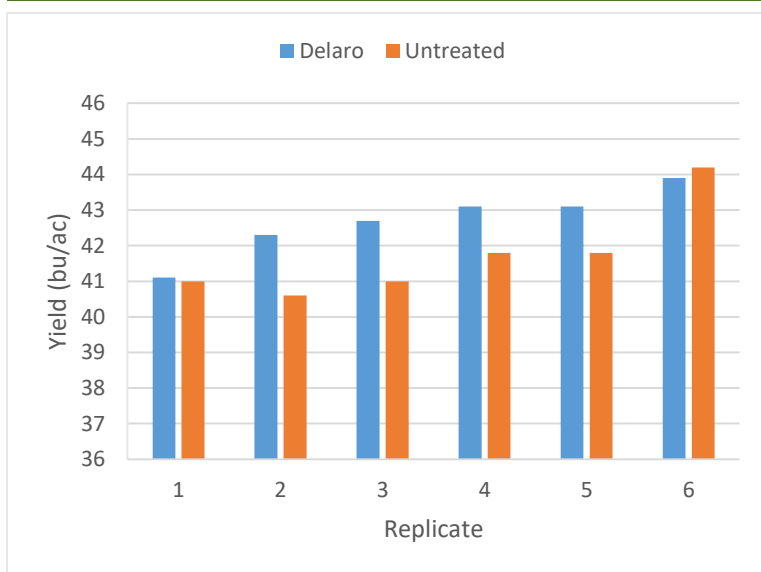
	Mean (bu/ac)
Delaro	42.7
Untreated	41.7
Yield Difference	1.0
P-Value	0.0394
CV	2.8%
Significance	Yes

Summary: There was a significant yield difference of 1.0 bu/ac between a single application of Delaro and untreated check strips applied at R2 (full flower). Rainfall was slightly below normal for the growing season and disease pressure was low.

NDVI FIELD IMAGE – AUG 16, 2018



STRIP YIELD



Soybean Foliar Fungicide Trial

Trial ID: 2018-SF07 – R.M. of Macdonald

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Cotegra vs. Untreated
Rural Municipality	Macdonald
Previous Crop	Corn
Soil Texture	Clay
Tillage	Conventional
Planting Date	May 11, 2018
Variety	24-12RY
Row Spacing	20"
Plant Stand @ Harvest	151,000 plants/ac
Application Date	July 3, 2018
Application Timing	R2 – full flower
Application Rate	280 mL/ac
Harvest Date	September 7, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	59	68	45	25
Normal	59	92	78	68

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

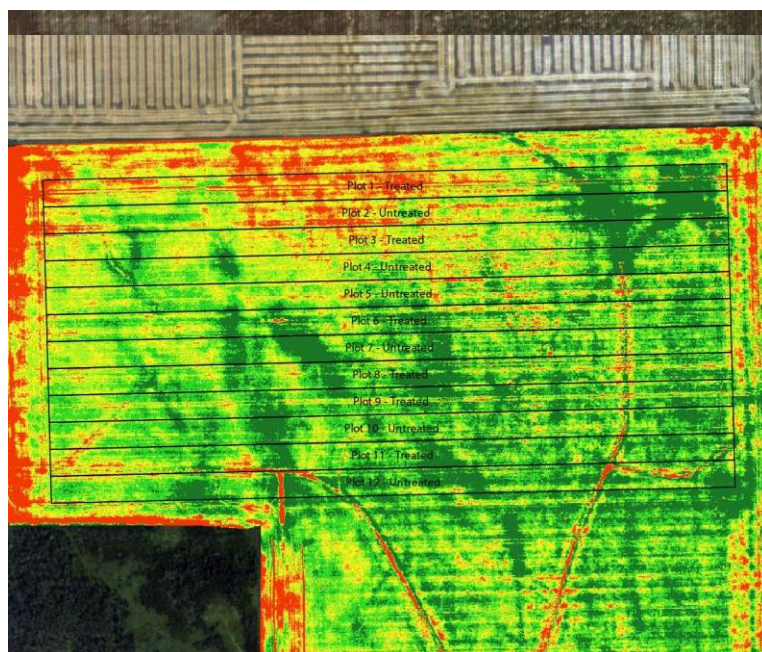
	White Mold	Brown Spot
Cotegra	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

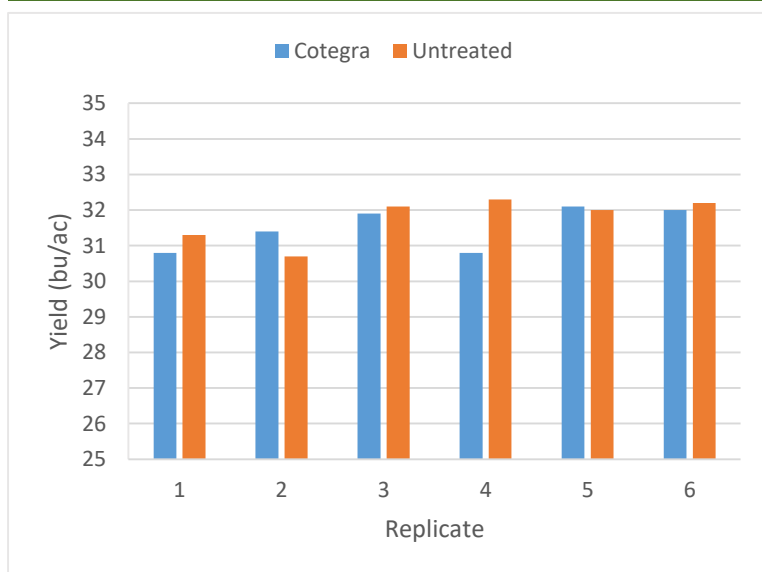
OVERALL YIELD

	Mean (bu/ac)
Cotegra	31.5
Untreated	31.8
Yield Difference	-0.3
P-Value	0.4110
CV	1.9%
Significance	No

NDVI FIELD IMAGE – AUG 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between a single application of Cotegra and untreated check strips applied at R2 (full flower). Rainfall was below normal for the entire growing season and disease pressure was low.

Soybean Foliar Fungicide Trial

Trial ID: 2018-SF08 – R.M. of La Broquerie

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	La Broquerie
Previous Crop	Corn
Soil Texture	Loamy Fine Sand
Tillage	Conventional
Planting Date	May 22, 2018
Variety	P007A90R
Row Spacing	10
Plant Stand @ Harvest	203,000 plants/ac
Application Date	July 6, 2018
Application Timing	R2 – full flower
Application Rate	230 mL/ac
Harvest Date	October 19, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	42	81	36	30
Normal	58	91	80	66

[†] Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6[†]

	White Mold	Brown Spot
Delaro	0	1
Untreated	0	1
P-Value	n/a	n/a
Significance	n/a	n/a

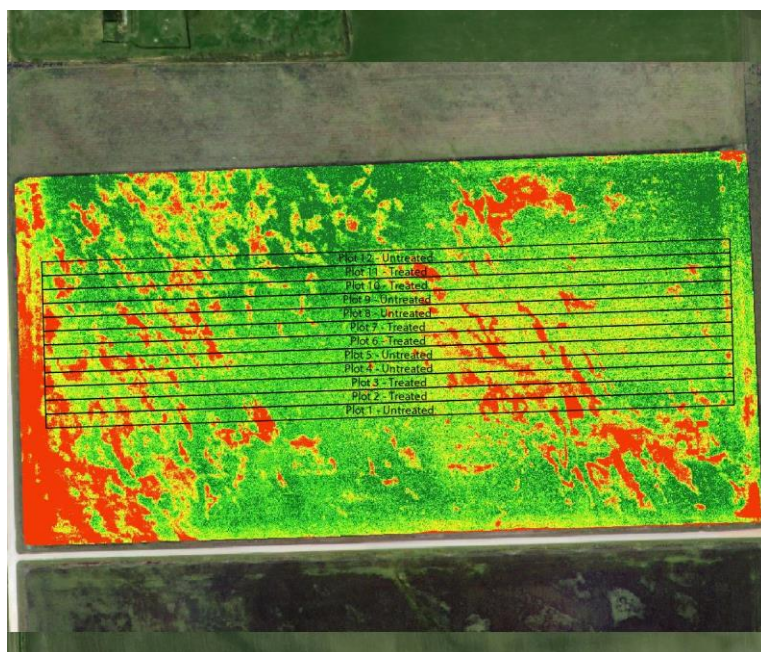
[†] Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

OVERALL YIELD

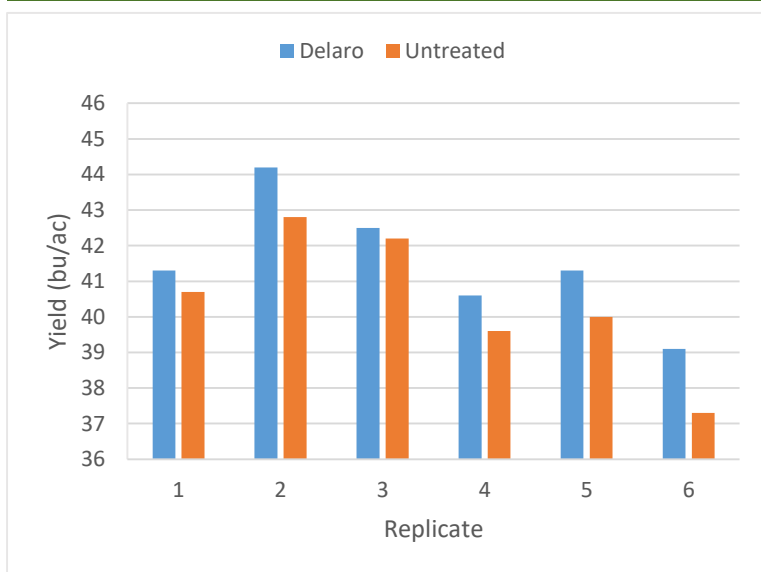
	Mean (bu/ac)
Delaro	41.5
Untreated	40.4
Yield Difference	1.1
P-Value	0.0051
CV	4.5%
Significance	Yes

Summary: There was a significant yield difference of 1.1 bu/ac between a single application of Delaro and untreated check strips applied at R2 (full flower). Rainfall was below normal for the entire growing season and disease pressure was low.

NDVI FIELD IMAGE – AUG 11, 2018



STRIP YIELD



Soybean Foliar Fungicide Trial

Trial ID: 2018-SF09 – R.M. of Westlake-Gladstone

Objective: Quantify the agronomic and economic impacts of foliar fungicide in soybean fields. A single application of Delaro was compared to an untreated check.

TRIAL INFORMATION

Treatment	Delaro vs. Untreated
Rural Municipality	Westlake-Gladstone
Previous Crop	Winter Wheat
Soil Texture	Clay
Tillage	Conventional
Planting Date	May 8, 2018
Variety	DKB005-52
Row Spacing	10"
Plant Stand @ Harvest	161,000 plants/ac
Application Date	July 3, 2018
Application Timing	R2 – full flower
Application Rate	230 mL/ac
Harvest Date	October 1, 2018

PRECIPITATION†

	May	June	July	Aug
Rainfall	19	111	39	47
Normal	50	79	71	69

† Growing season precipitation (mm)

DISEASE RATING @ GROWTH STAGE R6†

	White Mold	Brown Spot
Delaro	0	0
Untreated	0	0
P-Value	n/a	n/a
Significance	n/a	n/a

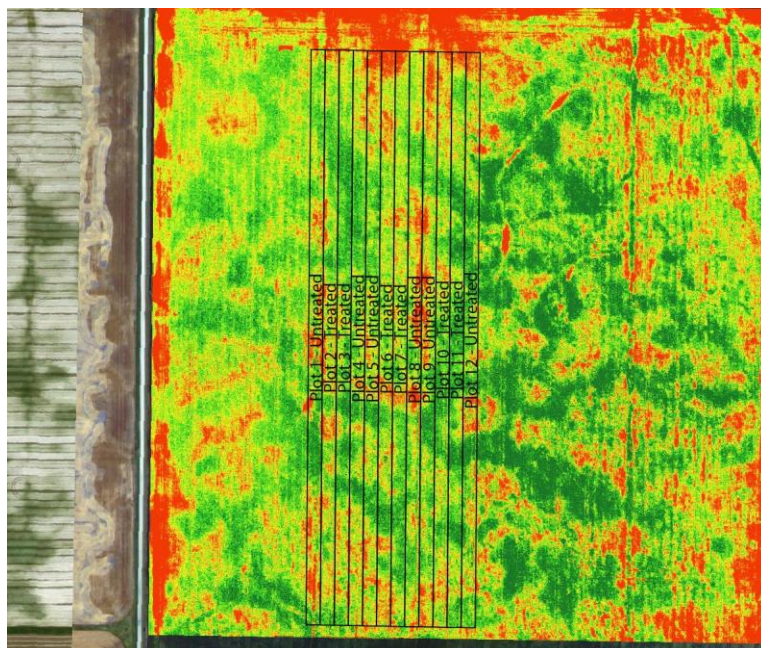
† Rated on a scale of 0-5 for severity (0 = no disease, 5 = full infection)

OVERALL YIELD

	Mean (bu/ac)
Delaro	30.9
Untreated	31.4
Yield Difference	-0.5
P-Value	0.6574
CV	6.6%
Significance	No

Summary: There was no significant yield difference between a single application of Delaro and untreated check strips applied at R2 (full flower). Rainfall was below normal for the entire growing season, with the exception of June, and disease pressure was low.

NDVI FIELD IMAGE – AUG 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied Inoculant vs. No Inoculant

The objective of this study was to quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops, with the most recent soybean crop grown within the past four years.

Soybean inoculant (seed applied inoculant vs. no inoculant) trial summary for 10 On-Farm Network trials across central, eastern and Interlake regions of Manitoba in 2018.

Trial ID	Rural Municipality	Seeding Date	Nodule Count @ R2		Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
			Single	Untreated	Single	Untreated				
					bu/ac		bu/ac	%		
S1IN01	Grey	May 8	18	18	26.7	27.0	-0.3	3.2	0.4158	No
S1IN02	Brokenhead	May 9	20	14	39.8	39.9	-0.1	3.5	0.9290	No
S1IN03	Brokenhead	May 14	23	25	40.6	40.9	-0.3	3.6	0.7277	No
S1IN04	St. Clements	May 15	32	30	41.5	41.2	0.3	2.5	0.7119	No
S1IN05	Lac du Bonnet	May 15	17	18	34.6	34.9	-0.3	3.1	0.3711	No
S1IN06	Hanover	May 15	27	32	47.4	47.2	0.2	2.5	0.4560	No
S1IN07	Taché	May 16	27	25	29.7	29.8	-0.1	5.0	0.7316	No
S1IN08	St. Andrews	May 16	27	24	38.2	38.4	-0.2	1.9	0.6549	No

Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In01 – R.M. of Grey

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Grey
Previous Crop	Winter Wheat
Soil Description	Clay
Tillage	Conventional
Planting Date	May 8, 2018
Variety	24-10RY
Row Spacing	20"
Seeding Rate	160,000 seeds/ac
Plant Stand @ V1	144,000 plants/ac
# of Years since Soy	4 years
# of Prev. Soy Crops	2014, 4-5 times in past
Harvest Date	September 19, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
44 lbs/ac	7.6	0.79	3.5%

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	29	70	41	22
Normal	54	81	66	71

[†] Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	18
No Inoculant	18

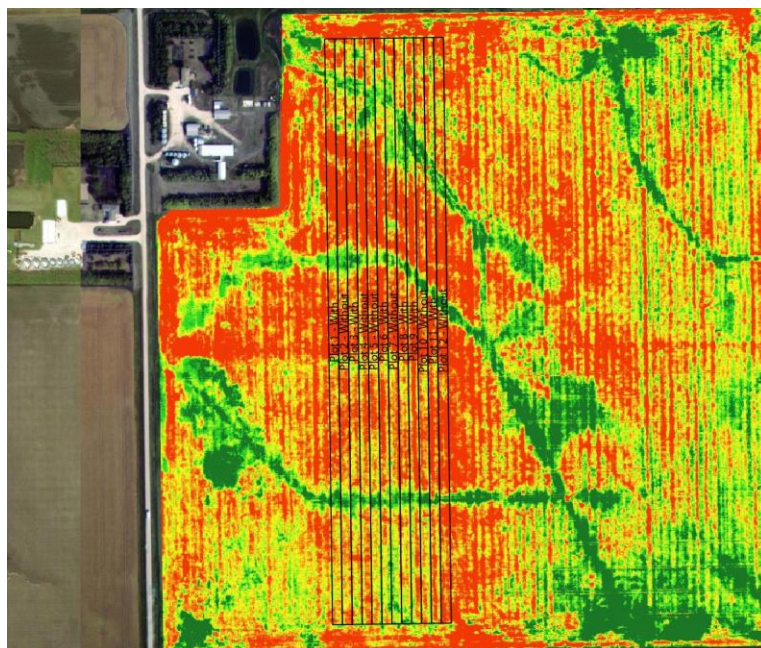
OVERALL YIELD

Mean (bu/ac)

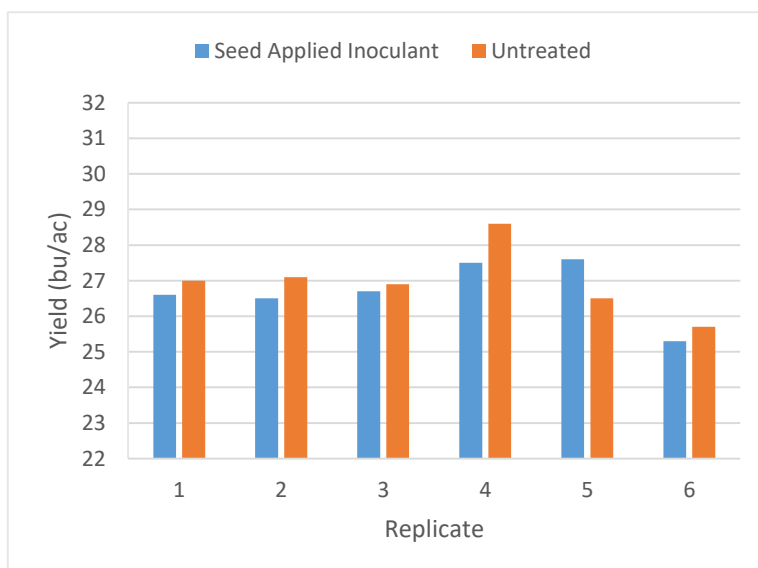
Seed Applied Inoculant	26.7
No Inoculant	27.0
Yield Difference	-0.3
P-Value	0.4158
CV	3.2%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In02 – R.M. of Brokenhead

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Brokenhead
Previous Crop	Wheat
Soil Description	Clay
Tillage	Conventional
Planting Date	May 9, 2018
Variety	S006-W5
Row Spacing	15"
Seeding Rate	180,000 seeds/ac
Plant Stand @ V1	184,000 plants/ac
# of Years since Soy	3 years
# of Prev. Soy Crops	2015, 5x in past
Harvest Date	October 1, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
9 lbs/ac	8.2	0.88	---

PRECIPITATION†

	May	June	July	Aug
Rainfall	53	120	25	45
Normal	54	90	73	73

† Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	20
No Inoculant	14

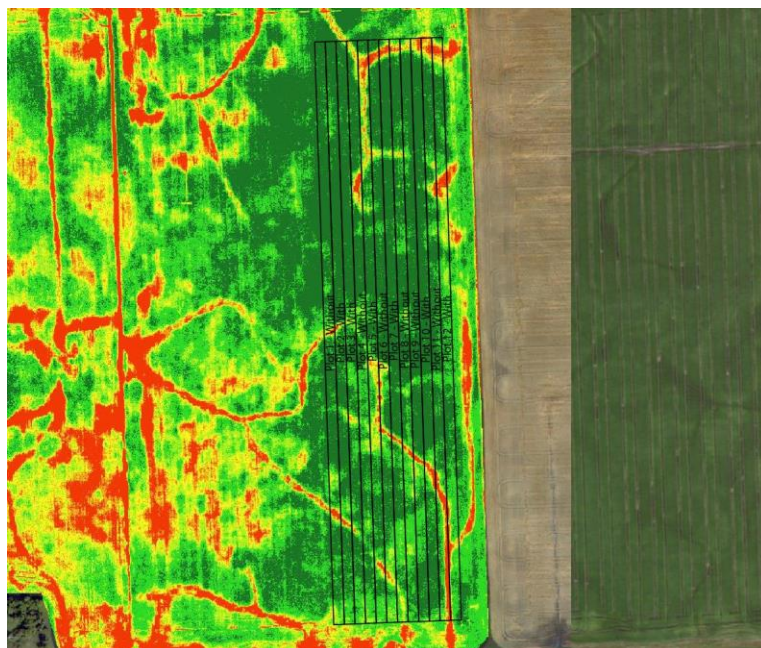
OVERALL YIELD

Mean (bu/ac)

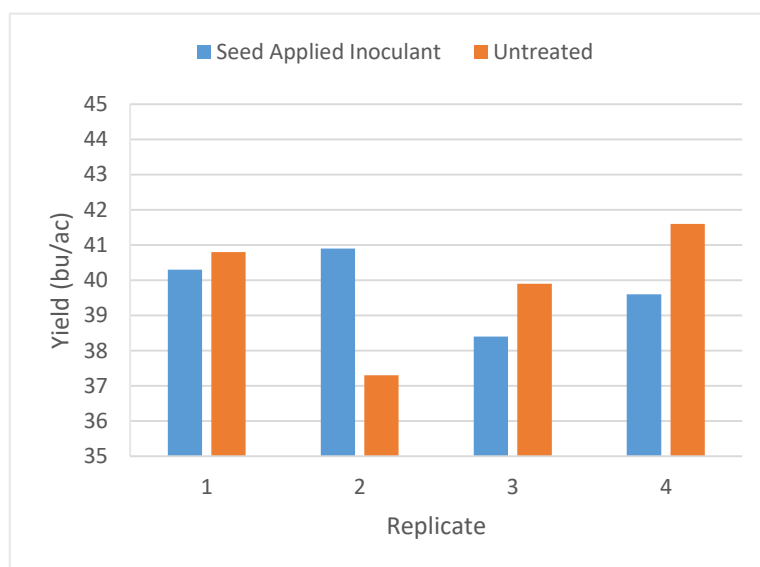
Seed Applied Inoculant	39.8
No Inoculant	39.9
Yield Difference	- 0.1
P-Value	0.9290
CV	3.5%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In03 – R.M. of Brokenhead

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Brokenhead
Previous Crop	Oats
Soil Description	Clay
Tillage	Conventional
Planting Date	May 14, 2018
Variety	LS Mistral
Row Spacing	10"
Seeding Rate	190,000 seeds/ac
Plant Stand @ V1	166,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, >3x in past
Harvest Date	October 22, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
38 lbs/ac	8.0	1.29	7.8%

PRECIPITATION†

	May	June	July	Aug
Rainfall	53	120	25	45
Normal	54	90	73	73

† Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	23
No Inoculant	25

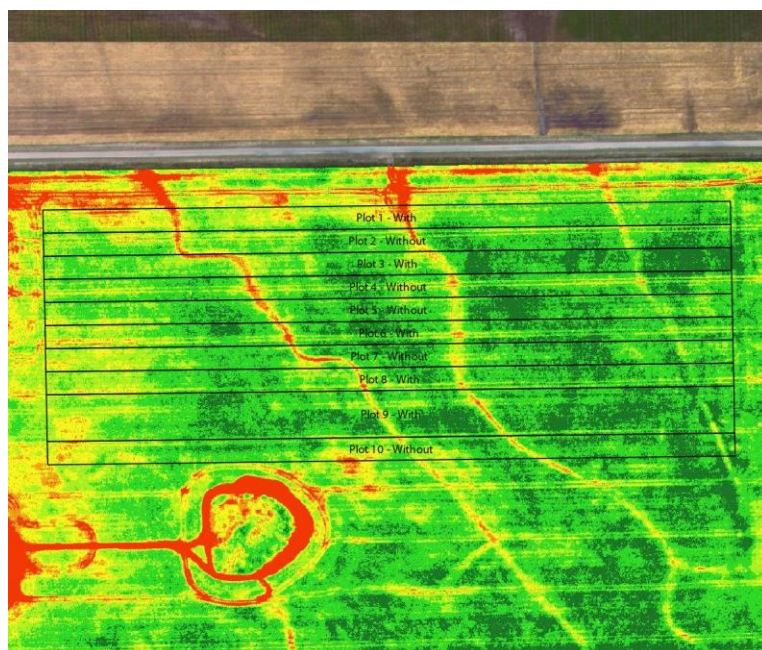
OVERALL YIELD

Mean (bu/ac)

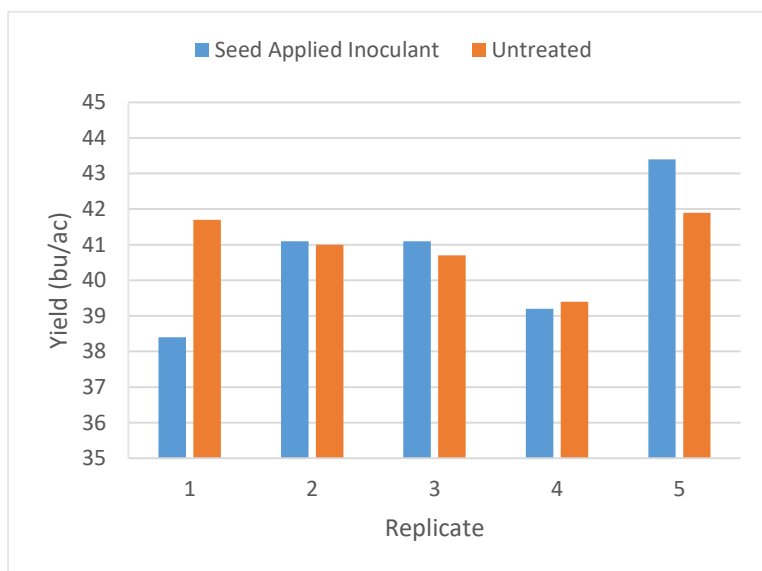
Seed Applied Inoculant	40.6
No Inoculant	40.9
Yield Difference	-0.3
P-Value	0.7277
CV	3.6%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In04 – R.M. of St. Clements

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	St. Clements
Previous Crop	Spring Wheat
Soil Description	Clay / Loam
Tillage	Conventional
Planting Date	May 15, 2018
Variety	24-10RY
Row Spacing	10"
Seeding Rate	180,000 seeds/ac
Plant Stand @ V1	144,000 plants/ac
# of Years since Soy	3 years
# of Prev. Soy Crops	2015, 4x in the past
Harvest Date	October 1, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
56 lbs/ac	8.0	1.17	3.1%

PRECIPITATION†

	May	June	July	Aug
Rainfall	39	93	32	63
Normal	54	91	81	74

† Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	32
No Inoculant	30

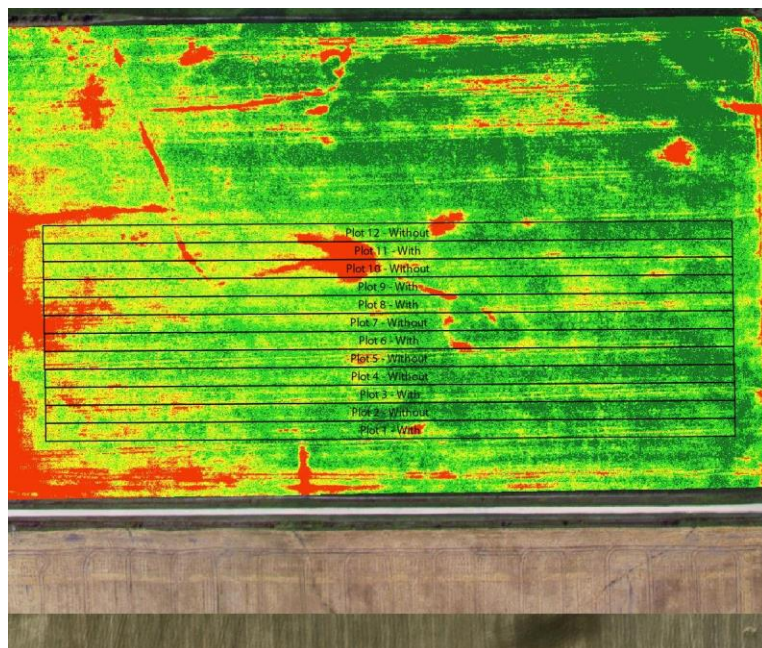
OVERALL YIELD

Mean (bu/ac)

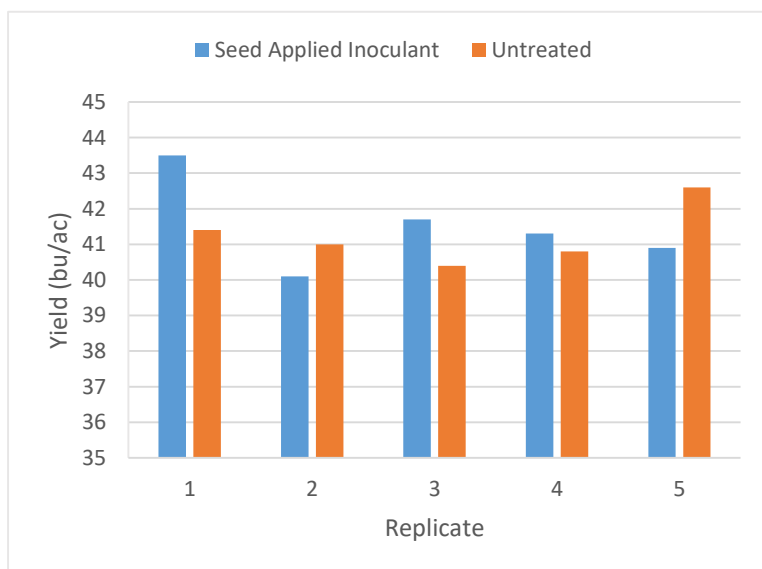
Seed Applied Inoculant	41.5
No Inoculant	41.2
Yield Difference	0.3
P-Value	0.7119
CV	2.5%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In05 – R.M. of Lac du Bonnet

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Lac du Bonnet
Previous Crop	Corn
Soil Description	Peat / Very Fine Sandy Loam
Tillage	Conventional
Planting Date	May 15, 2018
Variety	OAC Prudence
Row Spacing	9"
Seeding Rate	439,000 seeds/ac
Plant Stand @ V1	263,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, >3x in past
Harvest Date	October 23, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
39 lbs/ac	8.1	0.64	7.8%

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	53	120	25	45
Normal	54	90	73	73

[†] Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	17
No Inoculant	18

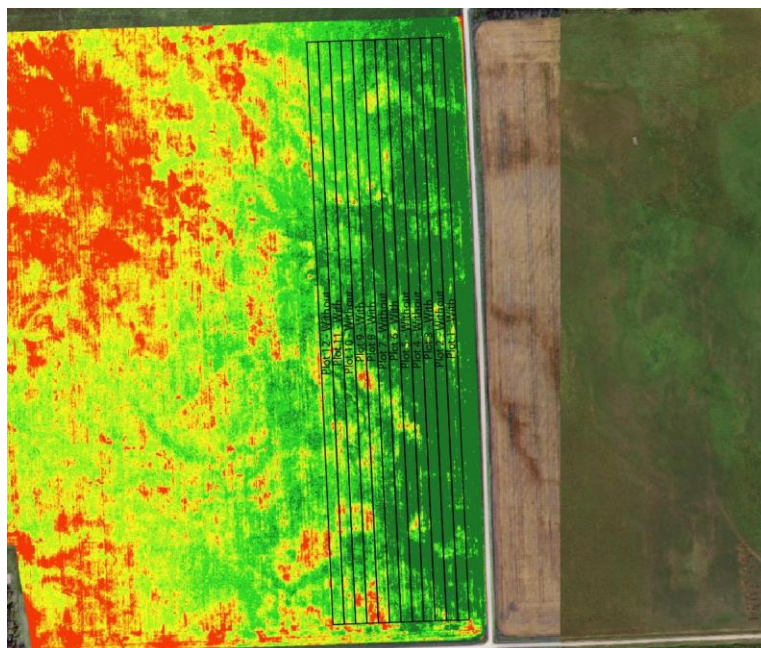
OVERALL YIELD

Mean (bu/ac)

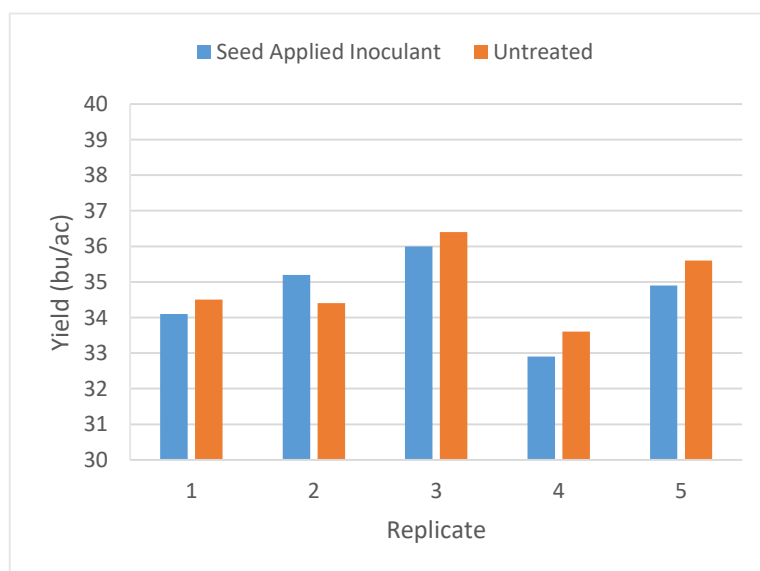
Seed Applied Inoculant	34.6
No Inoculant	34.9
Yield Difference	-0.3
P-Value	0.3711
CV	3.1%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In06– R.M. of Hanover

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Hanover
Previous Crop	Canola
Soil Description	Clay
Tillage	Conventional
Planting Date	May 15, 2018
Variety	23-60RY
Row Spacing	10"
Seeding Rate	210,000 seeds/ac
Plant Stand @ V1	183,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, >3x in past
Harvest Date	September 11, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
54 lbs/ac	8.2	0.69	8.5%

PRECIPITATION†

	May	June	July	Aug
Rainfall	42	81	36	30
Normal	58	91	80	66

† Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	27
No Inoculant	32

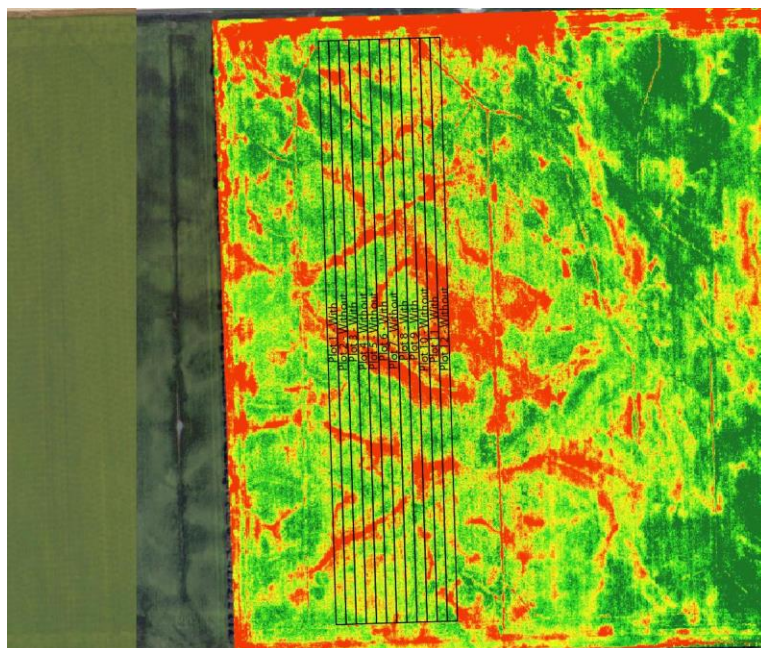
OVERALL YIELD

Mean (bu/ac)

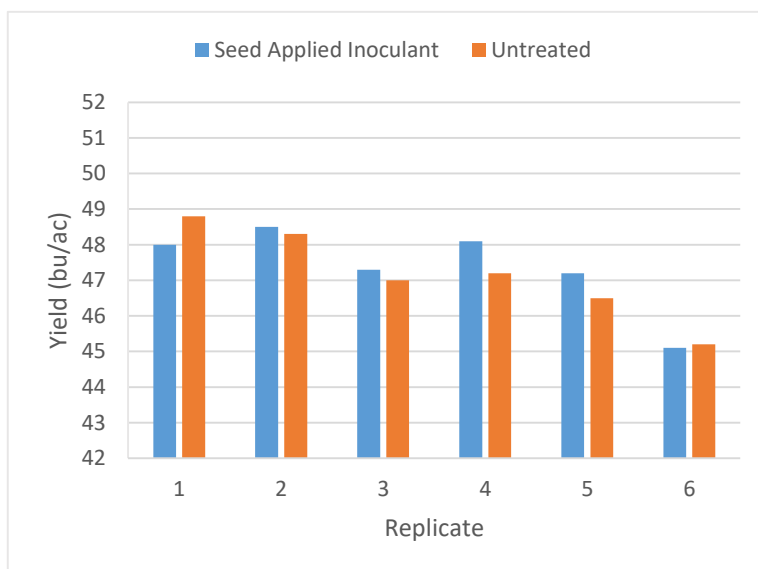
Seed Applied Inoculant	47.4
No Inoculant	47.2
Yield Difference	0.2
P-Value	0.4560
CV	2.5%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In07 – R.M. of Taché

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	Taché
Previous Crop	Sunflower
Soil Description	Clay
Tillage	Conventional
Planting Date	May 16, 2018
Variety	NSC Jordan RR2Y
Row Spacing	20"
Seeding Rate	165,000 seeds/ac
Plant Stand @ V1	95,000 plants/ac
# of Years since Soy	3 years
# of Prev. Soy Crops	2015, >3x in past
Harvest Date	October 2, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
69 lbs/ac	8.1	0.93	5.8%

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	42	81	36	30
Normal	58	91	80	66

[†] Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	27
No Inoculant	25

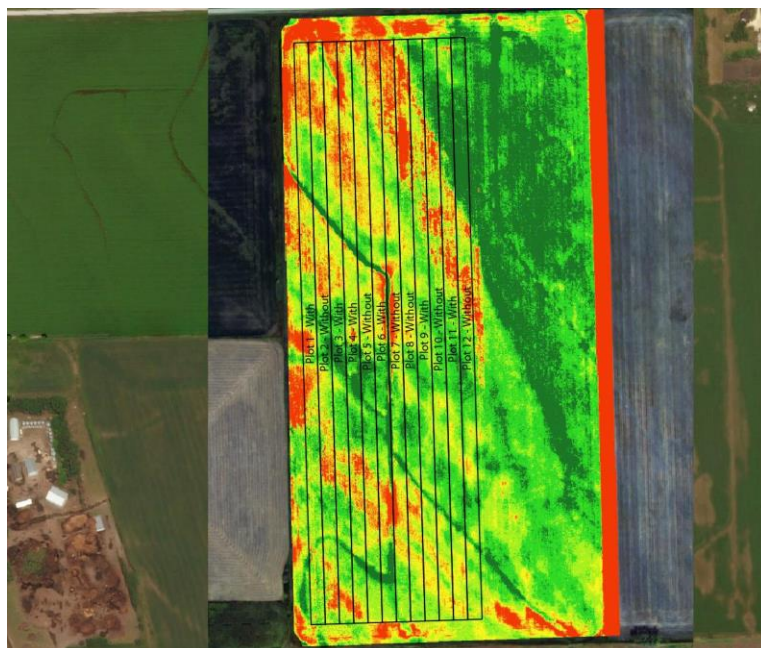
OVERALL YIELD

Mean (bu/ac)

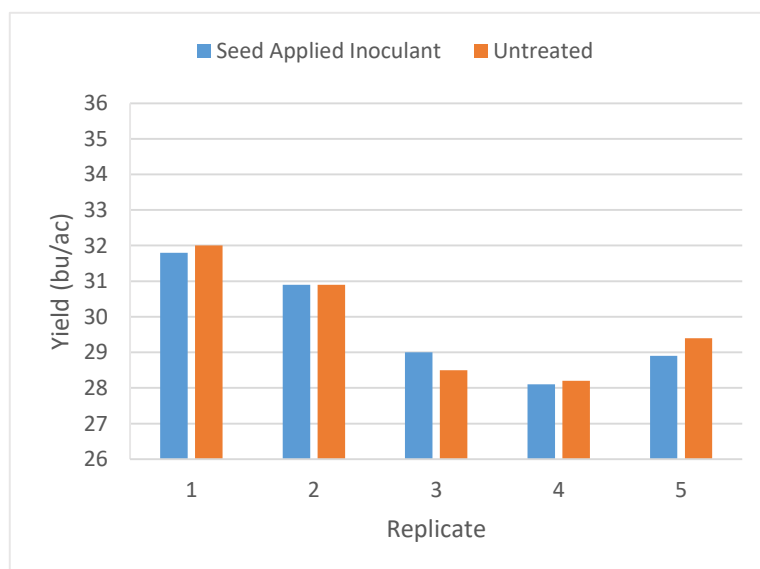
Seed Applied Inoculant	29.7
No Inoculant	29.8
Yield Difference	-0.1
P-Value	0.7316
CV	5.0%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied vs. No Inoculant

Trial ID: 2018-S1In08 – R.M. of St. Andrews

Objective: Quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. no inoculant applied in soybean fields. The trial is conducted in the Central, Eastern and Interlake regions of Manitoba and requires a minimum history of three previous soybean crops.

TRIAL INFORMATION

Treatment	Seed Applied Inoculant
Rural Municipality	St. Andrews
Previous Crop	Soybeans
Soil Description	Clay
Tillage	Conventional
Planting Date	May 16, 2018
Variety	LS 005R24
Row Spacing	10"
Seeding Rate	175,000 seeds/ac
Plant Stand @ V1	146,000 plants/ac
# of Years since Soy	1 year
# of Prev. Soy Crops	2017, 2015, >3x in past
Harvest Date	October 19, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
30 lbs/ac	7.7	0.70	1.1%

PRECIPITATION†

	May	June	July	Aug
Rainfall	47	90	90	77
Normal	54	92	66	63

† Growing season precipitation (mm)

NODULATION COUNT

Average # of Nodules @ R2

Seed Applied Inoculant	27
No Inoculant	24

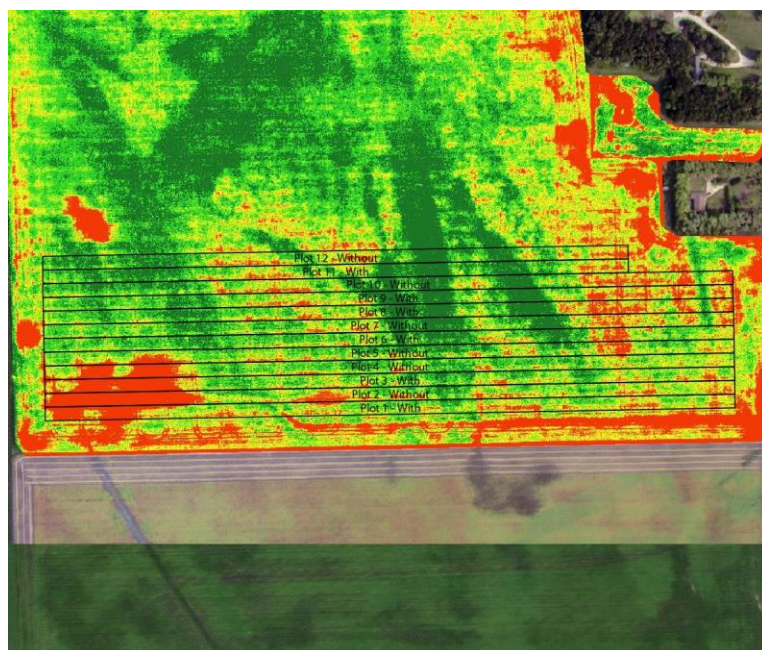
OVERALL YIELD

Mean (bu/ac)

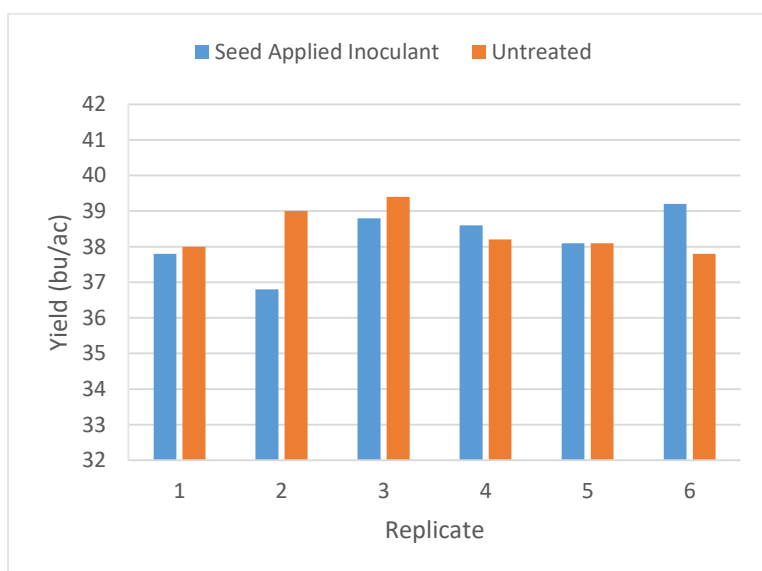
Seed Applied Inoculant	38.2
No Inoculant	38.4
Yield Difference	-0.2
P-Value	0.6549
CV	1.9%
Significance	No

Summary: There was no significant yield difference between soybeans treated with a single seed applied inoculant vs. no inoculant. Soybeans were well nodulated for both the treated and untreated strips. This trial was established on a field with a history of at least three previous, well nodulated soybean crops and the most recent soybean crop was grown within the past four years.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Inoculant Trial – Seed Applied Inoculant vs. Seed Applied + In-furrow Inoculant

The objective of this study was to quantify the agronomic and economic impacts of seed applied inoculant (single inoculation) vs. seed applied plus in-furrow inoculant (double inoculation) in soybean fields. This trial requires a minimum field history of 2 previous soybean crops.

Soybean inoculant (seed applied inoculant vs. seed applied + in-furrow inoculant) trial summary for 7 On-Farm Network trials across Manitoba in 2018.

Trial ID	Rural Municipality	Seeding Date	Nodule Count @ R2		Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
			Double	Single	Double	Single				
					bu/ac		bu/ac	%		
S2IN01	Boissevain Morton	May 15	29	34	33.9	34.7	-0.8	4.7	0.3329	No
S2IN02	Louise	May 15	29	32	28.5	28.7	-0.2	4.9	0.7702	No
S2IN03	Louise	May 15	32	39	35.9	36.0	-0.1	7.0	0.7984	No
S2IN05	Oakland Wawanesa	May 16	28	23	46.8	46.5	0.4	4.9	0.6040	No
S2IN06	Glenella Lansdwone	May 19	18	18	21.0	20.0	1.0	16.7	0.2176	No
S2IN07	Dauphin	May 22	39	38	41.5	41.9	-0.5	2.7	0.5252	No
S2IN09	Dauphin	May 22	23	20	43.1	43.7	-0.6	2.2	0.2292	No



Soybean Inoculant Trial - Seed Applied vs. Seed Applied & In-Furrow Inoculant

Trial ID: 2018-S2In01 – R.M. of Boissevain-Morton

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

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Boissevain-Morton
Previous Crop	Soybean
Soil Description	Loam to Clay Loam
Tillage	Conventional
Planting Date	May 15, 2018
Variety	Torro R2
Row Spacing	12"
Seeding Rate	185,000 seeds/ac
Plant Stand @V1	177,000 plants/ac
# of Years since Soy	1 year
# of Prev. Soy Crops	2017, 2013
In-Furrow Inoculant	5 lbs/ac N-Row (peat/granular)
Harvest Date	September 8, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
50 lbs/ac	7.6	1.21	2.2%

PRECIPITATION†

	May	June	July	Aug
Rainfall	19	84	23	25
Normal	47	84	65	58

† Growing season precipitation (mm)

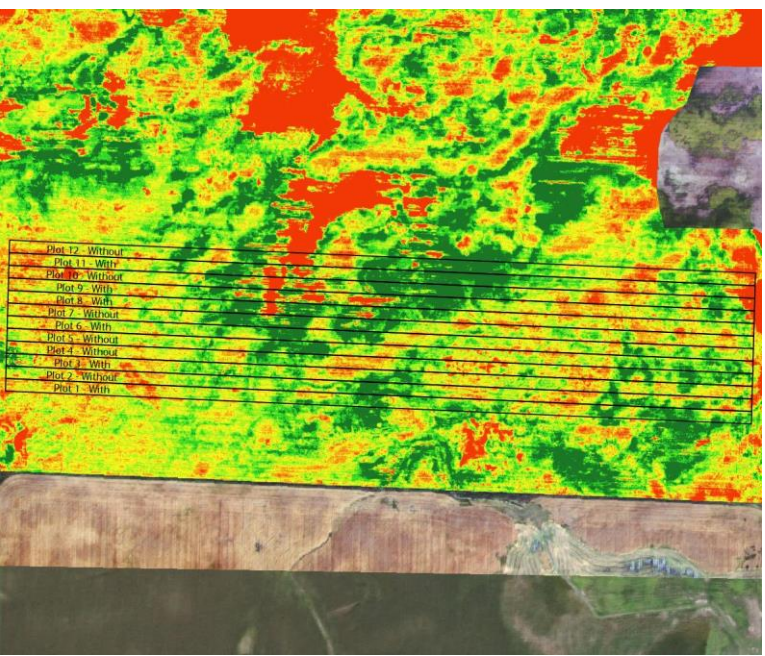
NODULATION COUNT

	Average # of Nodules @ R2
Double Inoculation	29
Single Inoculation	34

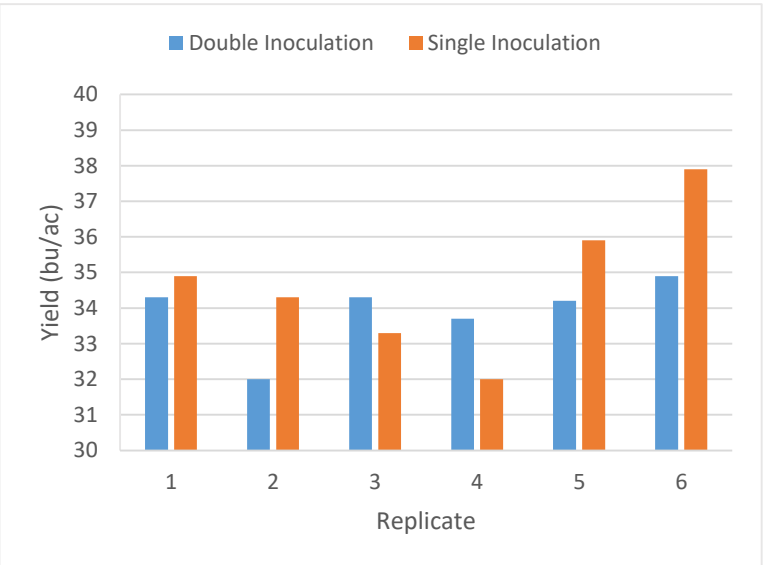
OVERALL YIELD

	Mean (bu/ac)
Double Inoculation	33.9
Single Inoculation	34.7
Yield Difference	- 0.8
P-Value	0.3329
CV	4.7%
Significance	No

NDVI FIELD IMAGE – AUG 10, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

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Soybean Inoculant Trial - Seed Applied vs. Seed Applied & In-Furrow Inoculant

Trial ID: 2018-S2In02 – R.M. of Louise

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

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Louise
Previous Crop	Barley
Soil Description	Clay Loam
Tillage	No-Till
Planting Date	May 15, 2018
Variety	S0009-M2
Row Spacing	10"
Seeding Rate	180,000 seeds/ac
Plant Stand @V1	83,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, 3x in past
In-Furrow Inoculant	4.5 lbs/ac Cell-Tech (granular)
Harvest Date	September 3, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
24 lbs/ac	7.9	0.45	0.9%

PRECIPITATION†

	May	June	July	Aug
Rainfall	82	88	31	34
Normal	61	90	68	72

† Growing season precipitation (mm)

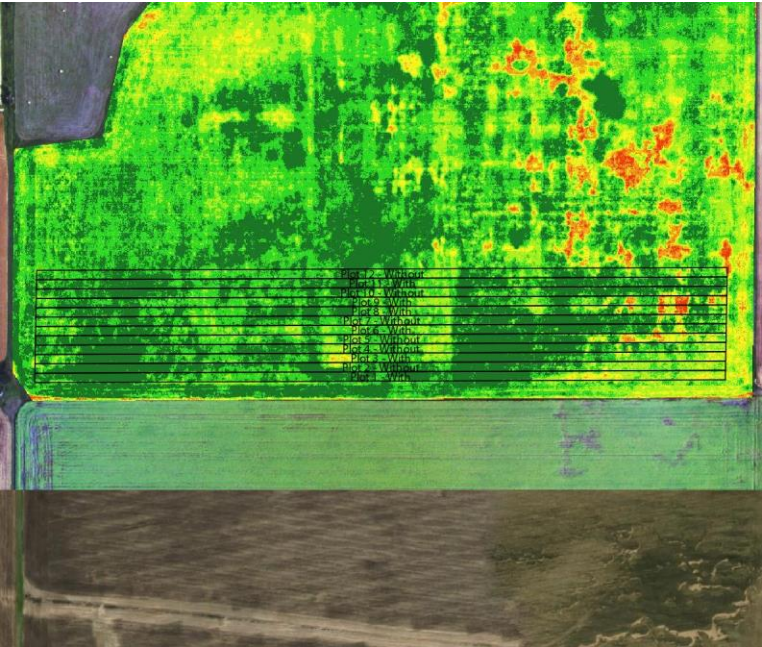
NODULATION COUNT

	Average # of Nodules @ R2
Double Inoculation	29
Single Inoculation	32

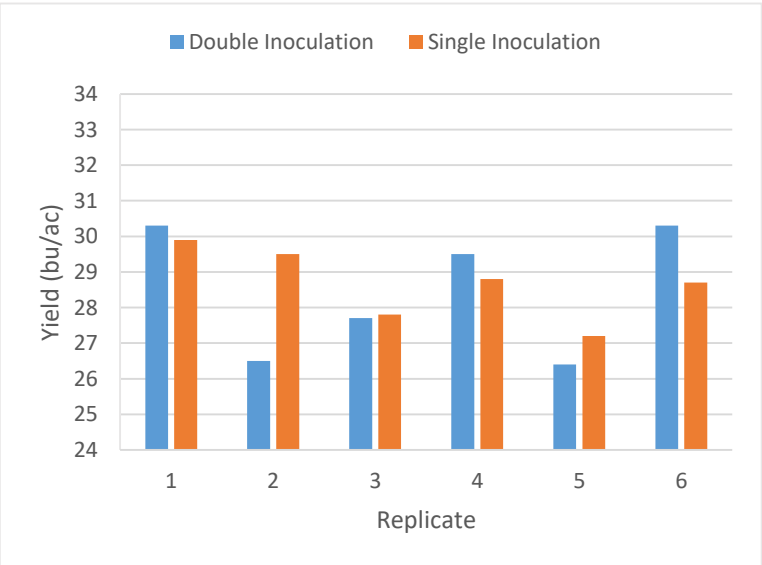
OVERALL YIELD

	Mean (bu/ac)
Double Inoculation	28.5
Single Inoculation	28.7
Yield Difference	- 0.2
P-Value	0.7702
CV	4.9%
Significance	No

NDVI FIELD IMAGE – AUG 10, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank Tone Ag Consulting for the research support



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Soybean Inoculant Trial - Seed Applied vs. Seed Applied & In-Furrow Inoculant



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Trial ID: 2018-S2In03 – R.M. of Louise

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

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Louise
Previous Crop	Wheat
Soil Description	Loam to Clay Loam
Tillage	Vertical Till
Planting Date	May 15, 2018
Variety	P002A19X
Row Spacing	15"
Seeding Rate	185,000 seeds/ac
Plant Stand @V1	128,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, 2014
In-Furrow Inoculant	7 lbs/ac Cell-Tech (granular)
Harvest Date	September 4, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
72 lbs/ac	7.4	0.64	2.5%

PRECIPITATION†

	May	June	July	Aug
Rainfall	82	88	31	34
Normal	61	90	68	72

† Growing season precipitation (mm)

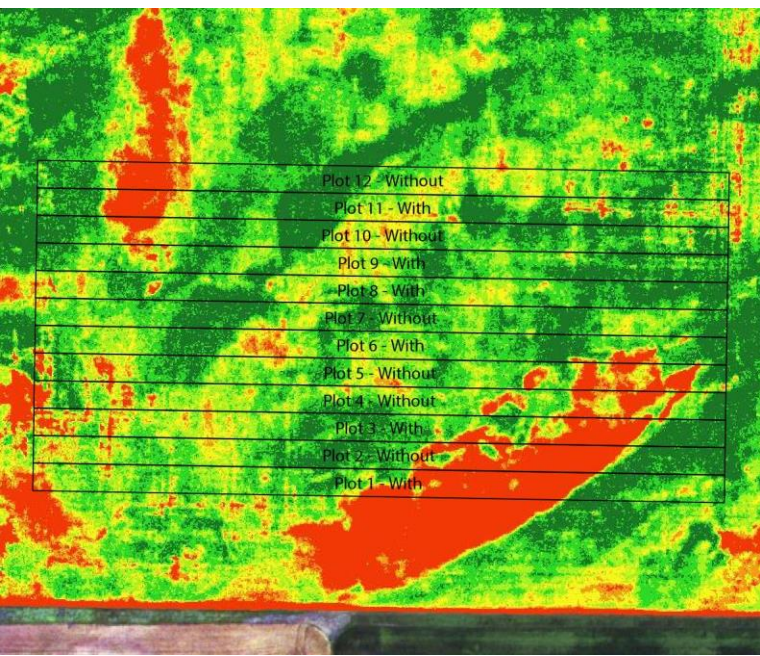
NODULATION COUNT

Average # of Nodules @ R2	
Double Inoculation	32
Single Inoculation	39

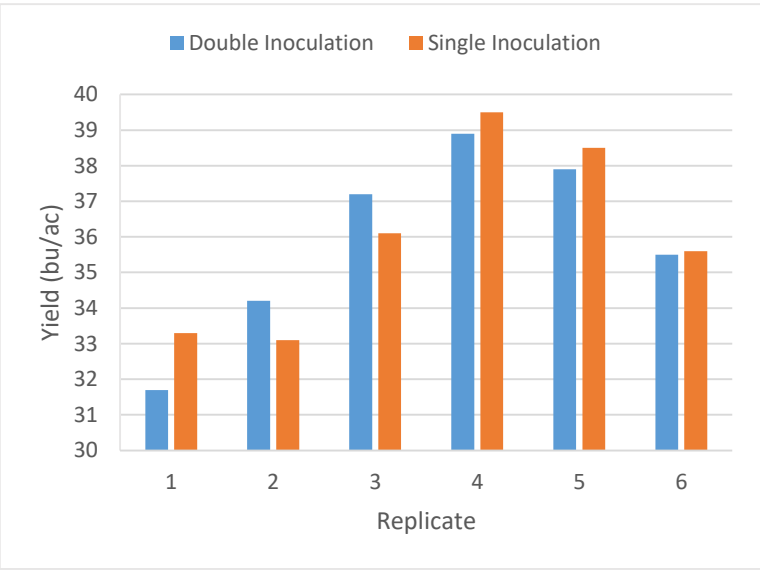
OVERALL YIELD

Mean (bu/ac)	
Double Inoculation	35.9
Single Inoculation	36.0
Yield Difference	-0.1
P-Value	0.7984
CV	7.0%
Significance	No

NDVI FIELD IMAGE – AUG 10, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank Tone Ag Consulting for the research support



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Trial ID: 2018-S2In05 – R.M. of Oakland-Wawanesa

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

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Oakland-Wawanesa
Previous Crop	Barley
Soil Description	Clay Loam
Tillage	Reduced Till
Planting Date	May 16, 2018
Variety	23-60RY
Row Spacing	10"
Seeding Rate	190,000 seeds/ac
Plant Stand @V1	156,000 plants/ac
# of Years since Soy	4 years
# of Prev. Soy Crops	2014, 2010
In-Furrow Inoculant	5 lbs/ac Nodulator (granular)
Harvest Date	September 19, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
38 lbs/ac	6.7	0.44	0.7%

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	29	61	57	27
Normal	51	73	74	68

[†] Growing season precipitation (mm)

NODULATION COUNT

	Average # of Nodules @ R2
Double Inoculation	28
Single Inoculation	23

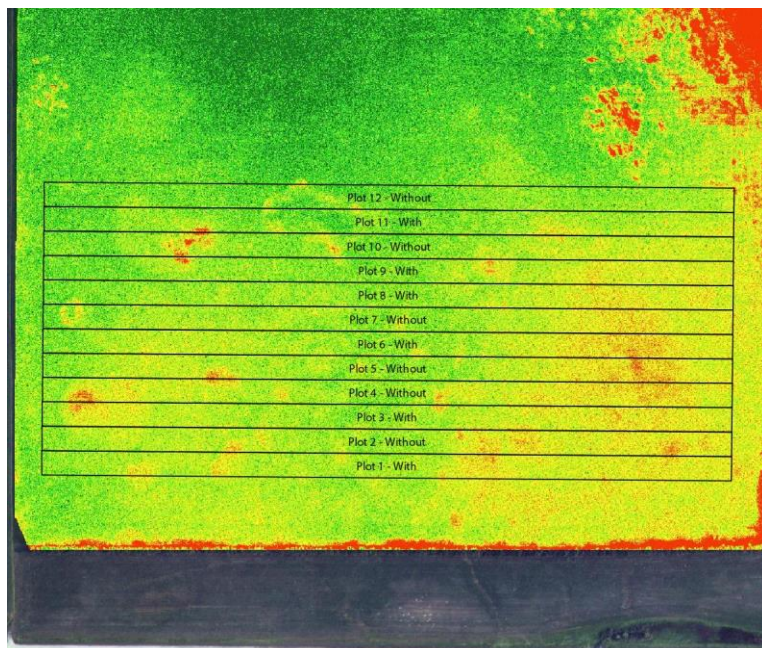
OVERALL YIELD

	Mean (bu/ac)
Double Inoculation	46.8
Single Inoculation	46.5
Yield Difference	0.3
P-Value	0.6040
CV	4.9%
Significance	No

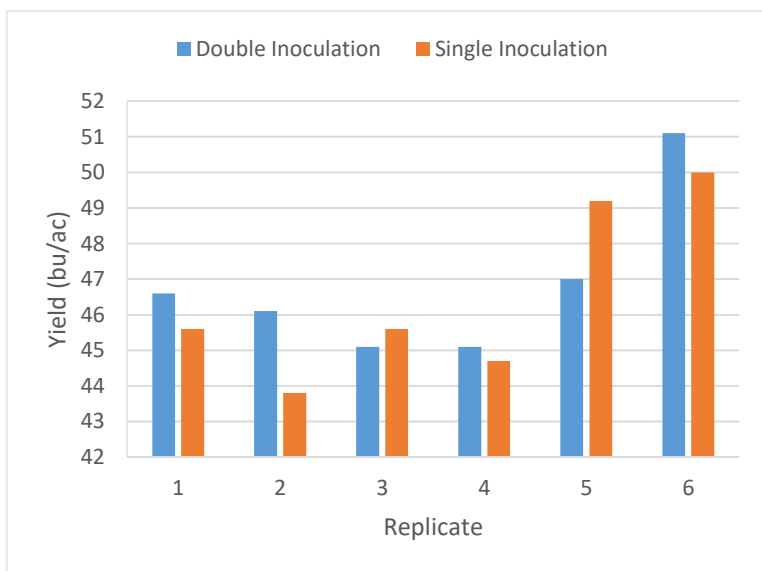
Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank BASF for providing the granular inoculant and Tone Ag Consulting for the research support

NDVI FIELD IMAGE – AUG 10, 2018 (GROWTH STAGE R6)



STRIP YIELD





Soybean Inoculant Trial - Seed Applied vs. Seed Applied & In-Furrow Inoculant

Trial ID: 2018-S2In06 – R.M. of Glenella-Lansdowne

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

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Glenella-Lansdowne
Previous Crop	Winter Wheat
Soil Description	Loamy Fine Sand
Tillage	Conventional
Planting Date	May 19, 2018
Variety	P006T46R
Row Spacing	10"
Seeding Rate	162,000 seed/ac
Plant Stand @V1	123,000 plants/ac
# of Years since Soy	3 years
# of Prev. Soy Crops	2015, 2014
In-Furrow Inoculant	5 lbs/ac Nodulator (granular)
Harvest Date	September 19, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
61 lbs/ac	8.2	0.25	4.8%

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	46	42	67	37
Normal	50	77	62	64

[†] Growing season precipitation (mm)

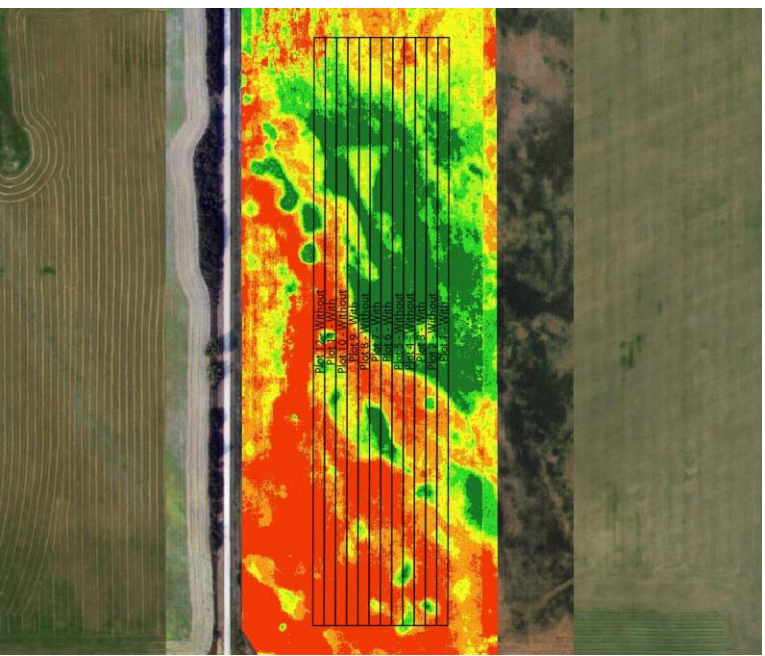
NODULATION COUNT

Average # of Nodules @ R2	
Double Inoculation	18
Single Inoculation	18

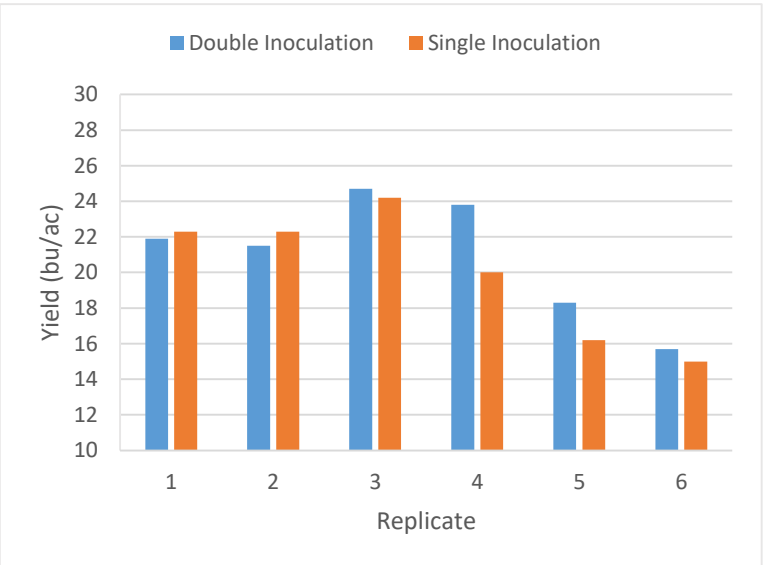
OVERALL YIELD

Mean (bu/ac)	
Double Inoculation	21.0
Single Inoculation	20.0
Yield Difference	1.0
P-Value	0.2176
CV	16.7%
Significance	No

NDVI FIELD IMAGE – AUG 11, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank BASF for providing the granular inoculant and Tone Ag Consulting for the research support



Trial ID: 2018-S2In07 – 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 soybean fields. This trial requires a minimum field history of 2 previous soybean crops.

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Dauphin
Previous Crop	Wheat
Soil Description	Fine Sandy Loam
Tillage	Conventional
Planting Date	May 22, 2018
Variety	Notus R2
Row Spacing	10"
Seeding Rate	218,000 seeds/ac
Plant Stand @V1	178,000 plants/ac
# of Years since Soy	2 years
# of Prev. Soy Crops	2016, 2012
In-Furrow Inoculant	5 lbs/ac Cell-Tech (granular)
Harvest Date	October 20, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
53 lbs/ac	8.1	0.29	3.2%

PRECIPITATION†

	May	June	July	Aug
Rainfall	38	104	91	3
Normal	54	87	73	63

† Growing season precipitation (mm)

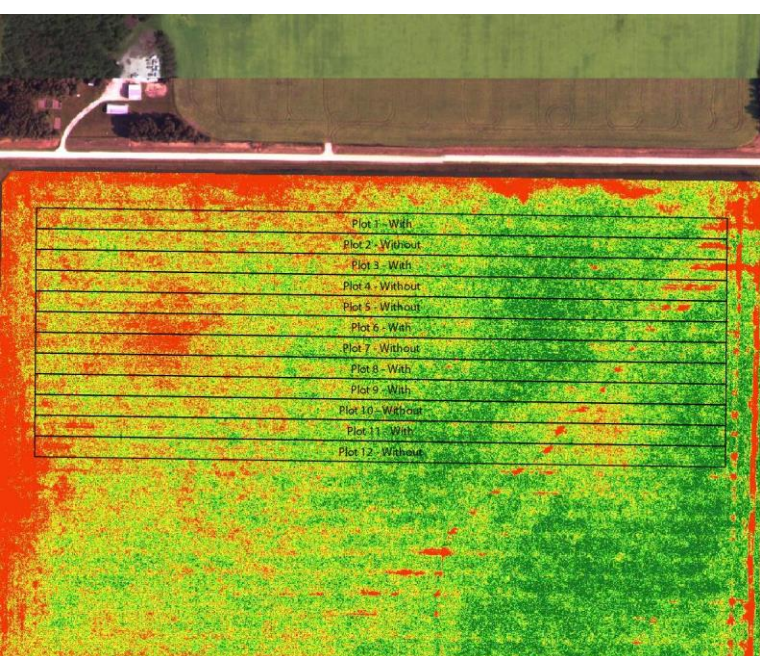
NODULATION COUNT

	Average # of Nodules @ R2
Double Inoculation	39
Single Inoculation	38

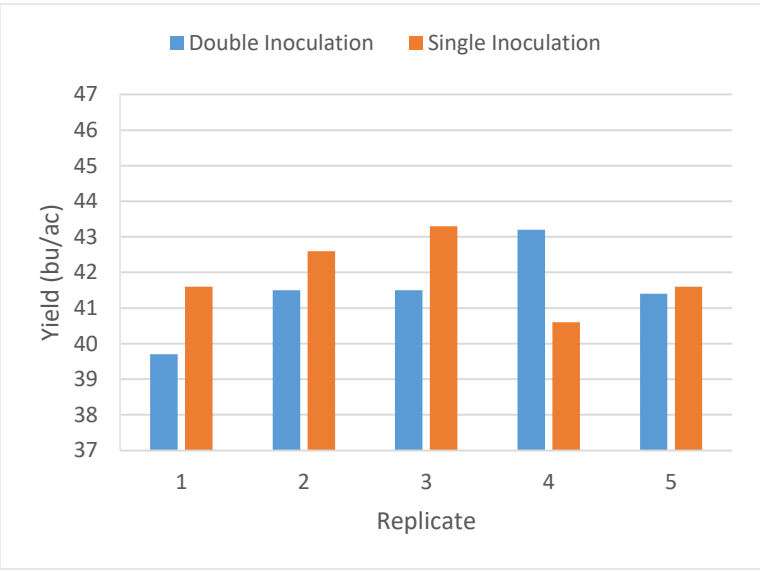
OVERALL YIELD

	Mean (bu/ac)
Double Inoculation	41.5
Single Inoculation	41.9
Yield Difference	- 0.4
P-Value	0.5252
CV	2.7%
Significance	No

NDVI FIELD IMAGE – AUG 9, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank Tone Ag Consulting for the research support



Soybean Inoculant Trial - Seed Applied vs. Seed Applied & In-Furrow Inoculant

Trial ID: 2018-S2In09 – 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 soybean fields. This trial requires a minimum field history of 2 previous soybean crops.

TRIAL INFORMATION

Treatment	Single vs. Double Inoculation
Rural Municipality	Dauphin
Previous Crop	Soybean
Soil Description	Clay / Loam
Tillage	No-Till
Planting Date	May 22, 2018
Variety	Akras R2
Row Spacing	9.8"
Seeding Rate	199,000 seeds/ac
Plant Stand @V1	180,000 plants/ac
# of Years since Soy	1 year
# of Prev. Soy Crops	2017, 2014
In-Furrow Inoculant	7.5 lbs/ac Cell-Tech (granular)
Harvest Date	October 20, 2018

SOIL PROPERTIES

N 0-24"	pH	Salts 0-6"	CCE%
31 lbs/ac	7.7	2.25	5.3%

PRECIPITATION†

	May	June	July	Aug
Rainfall	38	104	91	3
Normal	54	87	73	63

† Growing season precipitation (mm)

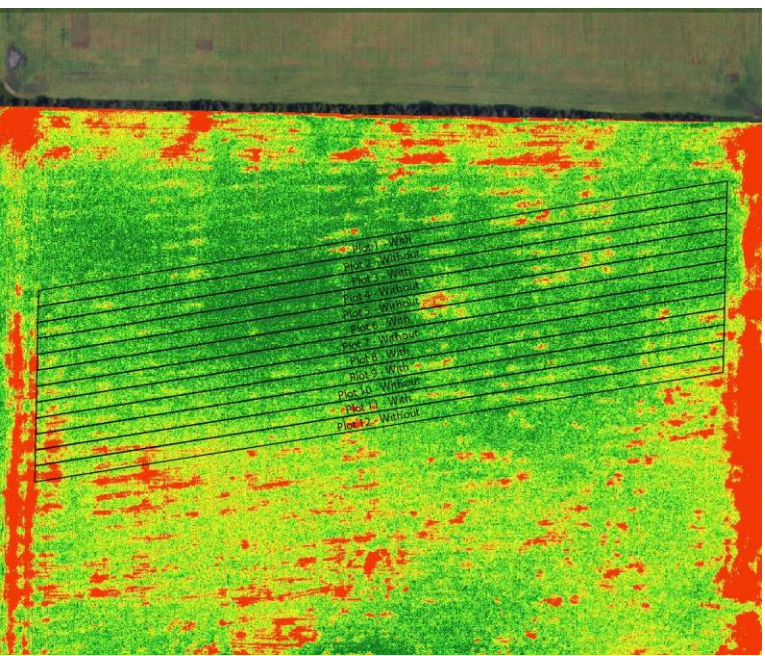
NODULATION COUNT

Average # of Nodules @ R2	
Double Inoculation	23
Single Inoculation	20

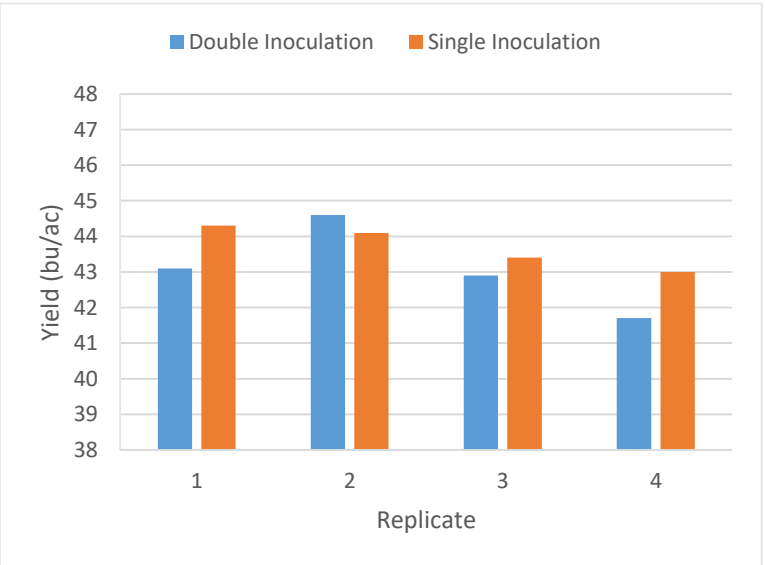
OVERALL YIELD

Mean (bu/ac)	
Double Inoculation	43.1
Single Inoculation	43.7
Yield Difference	- 0.6
P-Value	0.2292
CV	2.2%
Significance	No

NDVI FIELD IMAGE – AUG 9, 2018 (GROWTH STAGE R6)



STRIP YIELD



Summary: There was no significant yield difference between seed applied inoculant (single inoculant) and seed applied plus in-furrow inoculant (double inoculation) applied to soybeans. There was good nodulation for both single and double inoculation treatments. This trial was established on a field with a history of at least two previous, well nodulated soybean crops.

MPSG would like to thank Tone Ag Consulting for the research support



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Soybean Seeding Rate (Population) Trial

The objective of this study was to evaluate the agronomic and economic impacts of soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac.

Soybean seeding rate trial summary at 14 On-Farm Network trial across Manitoba in 2018.

Trial ID	Rural Municipality	Seeding Date	Row Spacing	Plant Stand @ Harvest			Yield			CV	P-Value	Statistically Significant @ 95%
				190K	160K	130K	190K	160K	130K			
			inch	'000/ac			bu/ac			%		
SP01	Springfield	May 6	15	183	141	123	42.8	42.5	41.5	2.4	0.0819	No
SP02	Roland	May 6	30	158	128	114	28.7	28.3	28.5	3.6	0.8918	No
SP03	Macdonald	May 8	10	166	161	110	29.8	30.0	29.9	1.4	0.8669	No
SP04	Morris	May 9	15	131	118	104	29.0	30.3	28.3	5.6	0.2553	No
SP05	Rhineland	May 10	30	179	154	125	36.7 a	35.9 b	35.3 b	1.9	0.0014	Yes
SP06	St. Clements	May 12	10				51.6 a	50.3 ab	50.0 b	2.0	0.0204	Yes
SP07	Morris	May 12	9	168	126	120	37.6	37.1	36.8	1.6	0.1145	No
SP08	Morris	May 14	30	169	135	125	26.4	25.6	26.1	4.5	0.6072	No
SP09	Montcalm	May 15	10	157	130	110	37.9	37.4	37.3	5.9	0.8263	No
SP11	St. Andrews	May 16	10	160	148	133	36.7	36.5	35.9	2.5	0.2985	No
SP12	Wallace Woodworth	May 17	10	142	135	101	27.4 a	26.8 ab	26.0 b	4.7	0.0254	Yes
SP13	Grassland	May 28	15	138	117	91	40.4	39.8	39.6	2.7	0.1340	No
SP16	Woodlands	May 22	15	129	122	97	37.8	37.4	36.9	2.6	0.4267	No
SP17	Swan Valley West	May 23	10				45.8 a	45.6 a	44.0 b	2.6	0.0056	Yes

Soybean Seeding Rate Trial

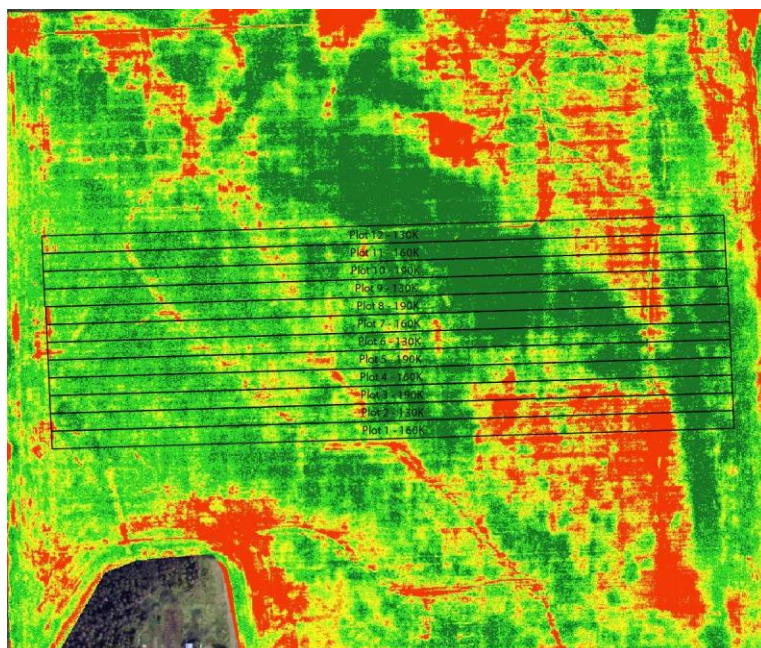
Trial ID: 2018-SP01 – R.M. of Springfield

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Springfield
Previous Crop	Ryegrass
Soil Texture	Clay
Tillage	No-till
Seeding Equipment	Planter
Planting Date	May 6, 2018
Variety	McLeod R2
Row Spacing	15"
Harvest Date	September 20, 2018

NDVI FIELD IMAGE – AUGUST 13, 2018



SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	172,000	183,000
160,000 seeds/ac	146,000	141,000
130,000 seeds/ac	125,000	123,000

PRECIPITATION†

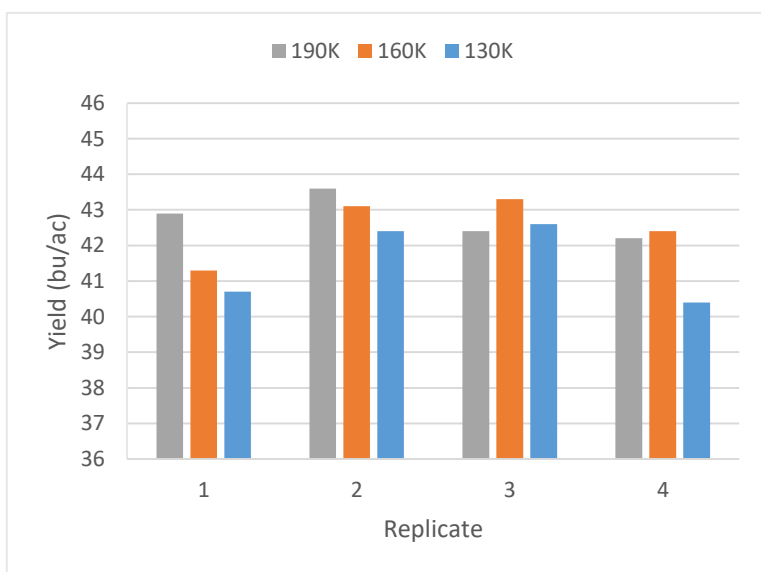
	May	June	July	Aug
Rainfall	39	93	32	63
Normal	54	91	81	74

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	42.8
160,000 seeds/ac	42.5
130,000 seeds/ac	41.5
P-Value	0.0819
CV	2.4%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between soybeans planted at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 15" row spacing. Soybean plant stand ranged from a high of 172,000 plants/ac to a low of 125,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP02 – R.M. of Roland

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Roland
Previous Crop	Corn
Soil Texture	Clay
Tillage	No-till
Seeding Equipment	Planter
Planting Date	May 6, 2018
Variety	P007A90R
Row Spacing	30"
Harvest Date	September 4, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	159,000	158,000
160,000 seeds/ac	126,000	128,000
130,000 seeds/ac	113,000	114,000

PRECIPITATION†

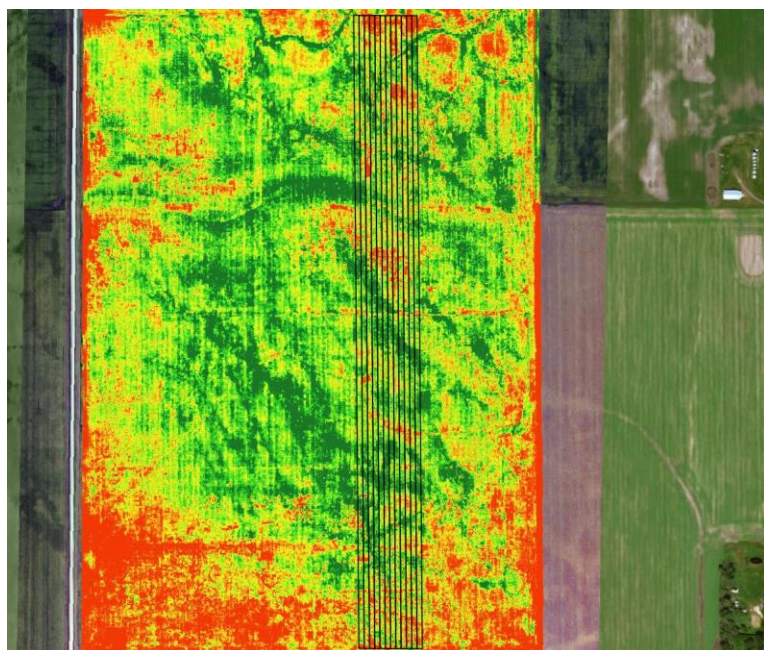
	May	June	July	Aug
Rainfall	42	92	44	28
Normal	54	81	66	71

† Growing season precipitation (mm)

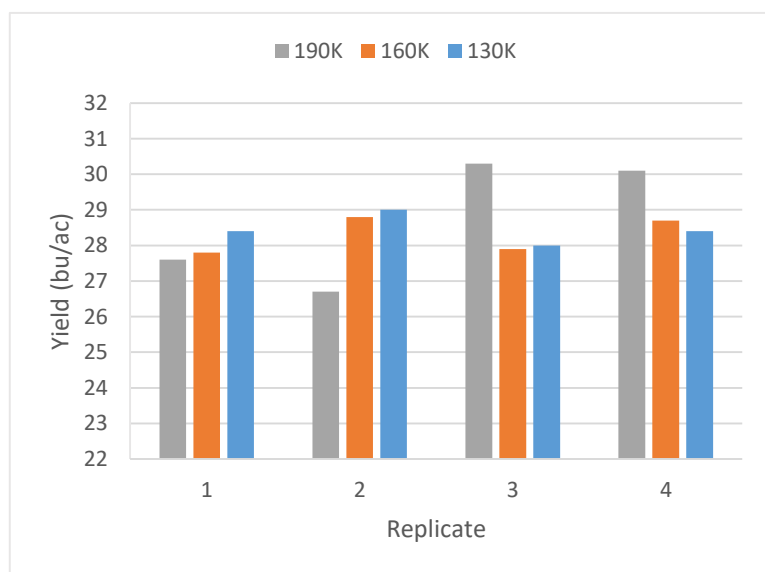
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	28.7
160,000 seeds/ac	28.3
130,000 seeds/ac	28.5
P-Value	0.8918
CV	3.6%
Significance	No

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans planted at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 30" row spacing. Soybean plant stand ranged from a high of 159,000 plants/ac to a low of 113,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP03 – R.M. of Macdonald

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Macdonald
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 8, 2018
Variety	LS MISTRAL
Row Spacing	10"
Harvest Date	September 10, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	165,000	166,000
160,000 seeds/ac	164,000	161,000
130,000 seeds/ac	107,000	110,000

PRECIPITATION[†]

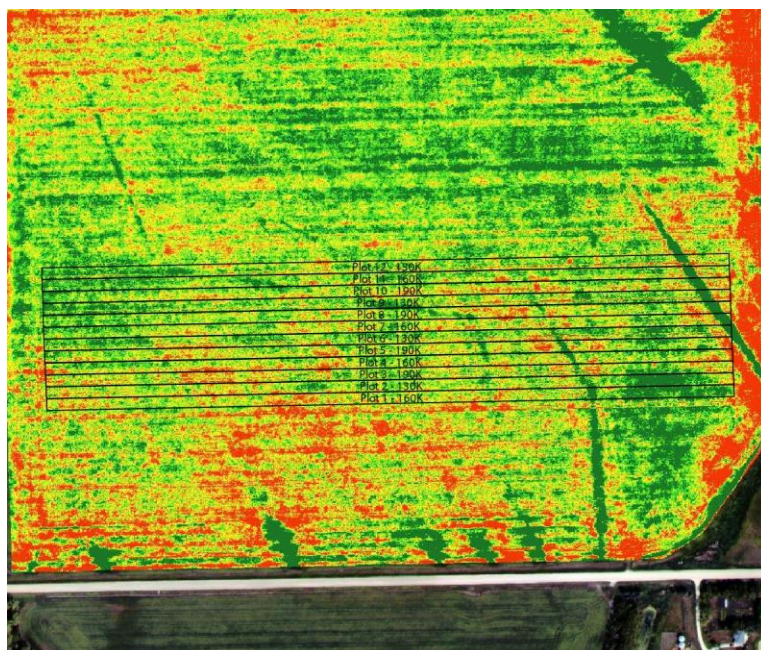
	May	June	July	Aug
Rainfall	40	81	74	24
Normal	59	92	78	68

[†] Growing season precipitation (mm)

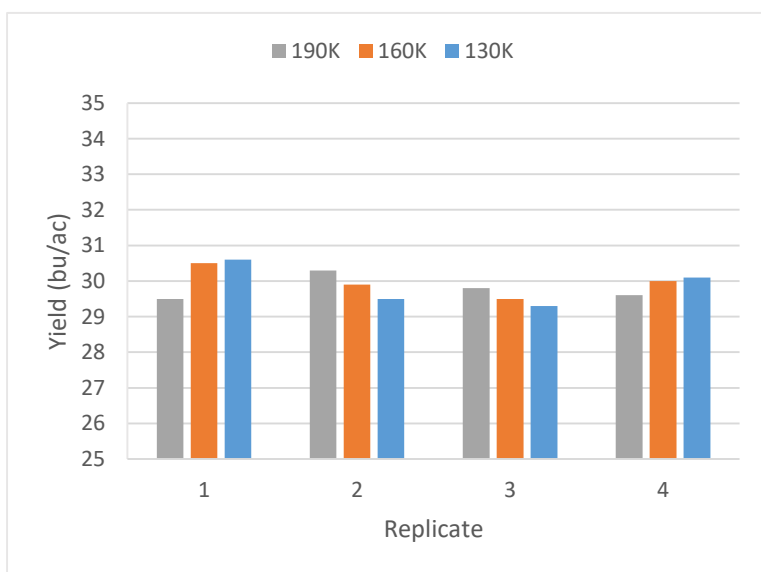
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	29.8
160,000 seeds/ac	30.0
130,000 seeds/ac	29.9
P-Value	0.8669
CV	1.4%
Significance	No

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 165,000 plants/ac to a low of 107,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP04 – R.M. of Morris

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Morris
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Disc Drill
Planting Date	May 9, 2018
Variety	S008-N2
Row Spacing	15"
Harvest Date	September 19, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	132,000	131,000
160,000 seeds/ac	120,000	118,000
130,000 seeds/ac	105,000	104,000

PRECIPITATION†

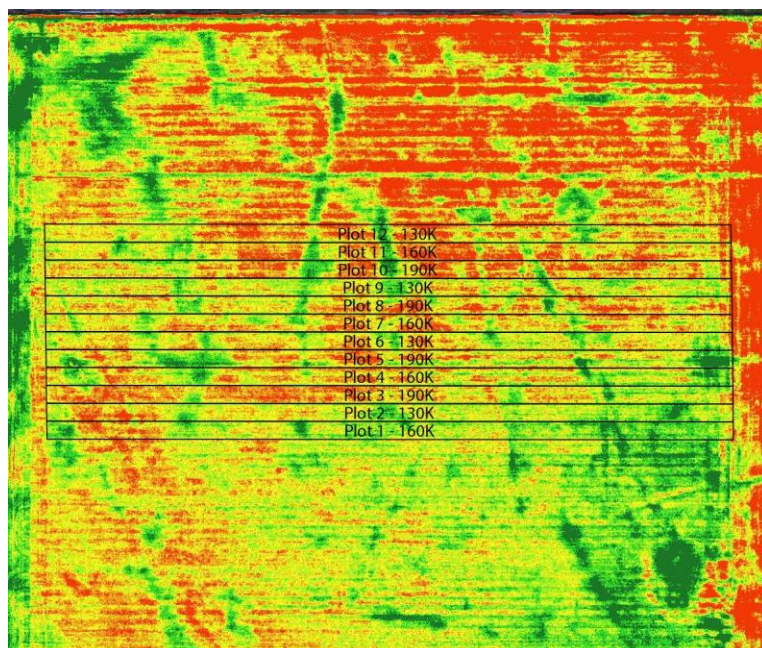
	May	June	July	Aug
Rainfall	28	85	38	27
Normal	54	86	72	65

† Growing season precipitation (mm)

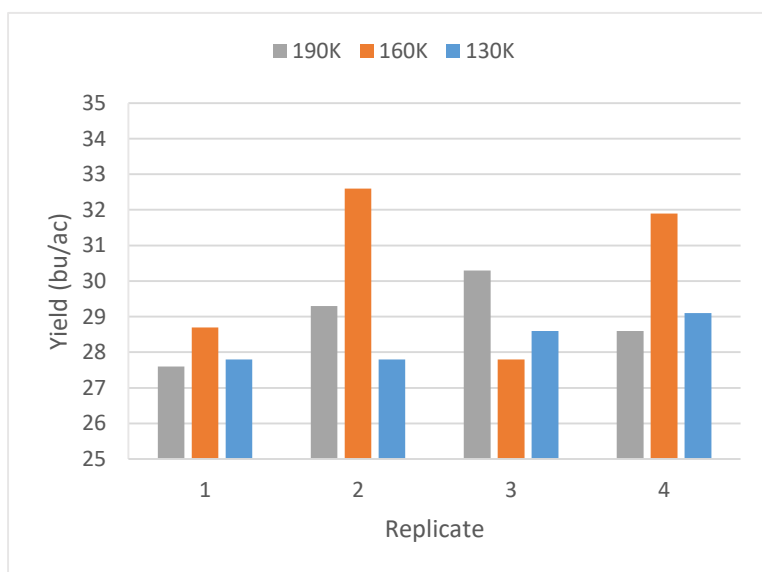
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	29.0
160,000 seeds/ac	30.3
130,000 seeds/ac	28.3
P-Value	0.2553
CV	5.6%
Significance	No

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 15" row spacing. Soybean plant stand ranged from a high of 132,000 plants/ac to a low of 105,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP05 – R.M. of Rhineland

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Rhineland
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Planter
Planting Date	May 10, 2018
Variety	PRO 2525R2
Row Spacing	30"
Harvest Date	September 7, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	183,000	179,000
160,000 seeds/ac	155,000	154,000
130,000 seeds/ac	128,000	125,000

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	34	44	39	42
Normal	56	85	75	66

[†] Growing season precipitation (mm)

OVERALL YIELD

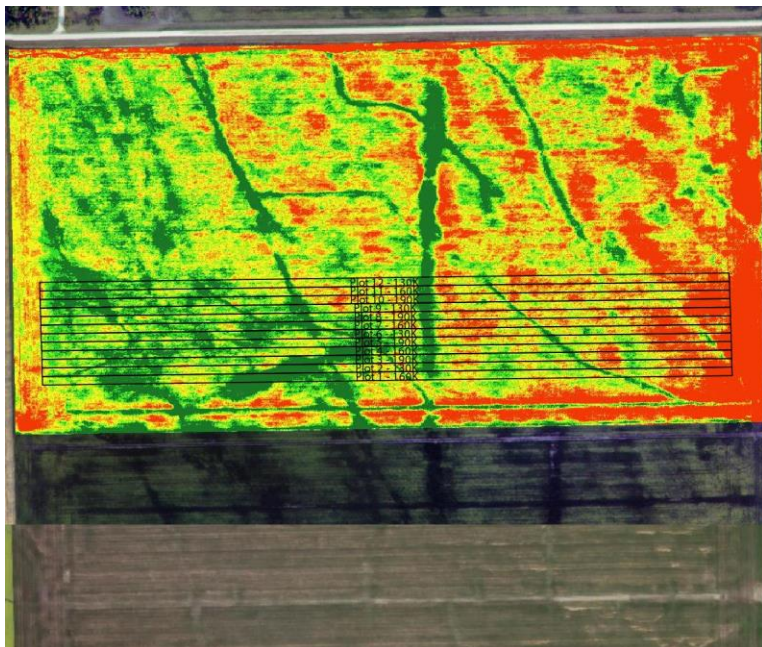
	Mean (bu/ac)
190,000 seeds/ac	36.7 a*
160,000 seeds/ac	35.9 b
130,000 seeds/ac	35.3 b
P-Value	0.0014
CV	1.9%
Significance	Yes

*Means followed by the same letter are not significantly different at P=0.05

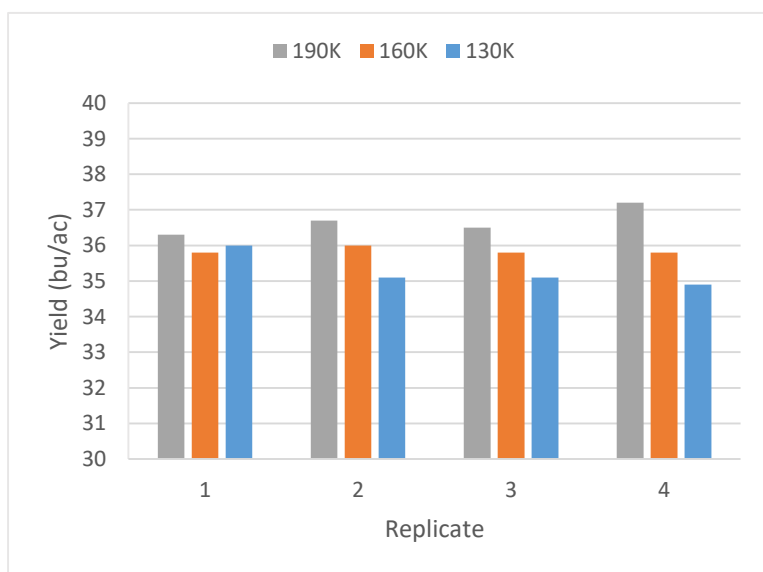
Summary: There was a significant yield difference between soybeans planted at 190,000 seeds/ac compared to 160,000 seeds/ac and 130,000 seeds/ac on 30" row spacing. Soybean plant stand ranged from a high of 183,000 plants/ac to a low of 128,000 plants/ac when assessed at growth stage V1.

MPSG would like to thank Tone Ag Consulting for the research support

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



Soybean Seeding Rate Trial

Trial ID: 2018-SP06 – R.M. of St. Clements

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	St. Clements
Previous Crop	Spring Wheat
Soil Texture	Fine Sandy Loam
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 12, 2018
Variety	24-10RY
Row Spacing	10"
Harvest Date	September 20, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	134,000	---
160,000 seeds/ac	104,000	---
130,000 seeds/ac	104,000	---

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	53	120	25	45
Normal	54	90	73	73

[†] Growing season precipitation (mm)

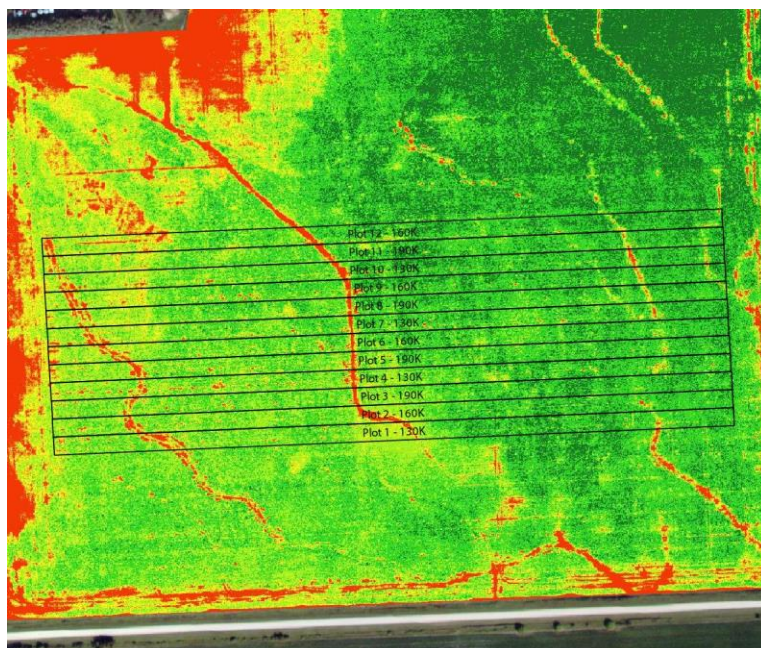
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	51.6 a*
160,000 seeds/ac	50.3 b
130,000 seeds/ac	50.0 b
P-Value	0.0204
CV	2.0%
Significance	Yes

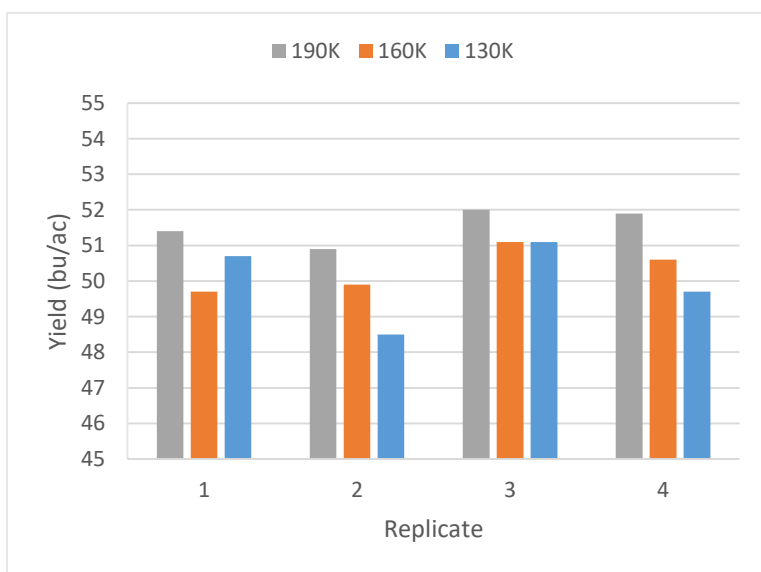
*Means followed by the same letter are not significantly different at P=0.05

Summary: There was a significant yield difference between soybeans seeded at 190,000 seeds/ac compared to 160,000 seeds/ac and 130,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 134,000 plants/ac to a low of 104,000 plants/ac when assessed at growth stage V1.

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Soybean Seeding Rate Trial

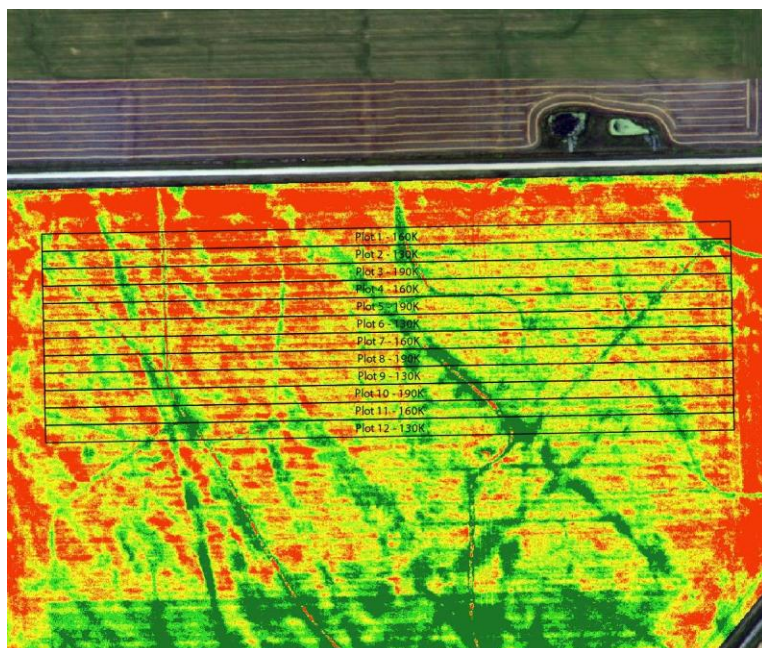
Trial ID: 2018-SP07 – R.M. of Morris

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Morris
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 12, 2018
Variety	DKB005-52
Row Spacing	9"
Harvest Date	September 6, 2018

NDVI FIELD IMAGE – AUGUST 11, 2018



SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	175,000	168,000
160,000 seeds/ac	127,000	126,000
130,000 seeds/ac	125,000	120,000

PRECIPITATION†

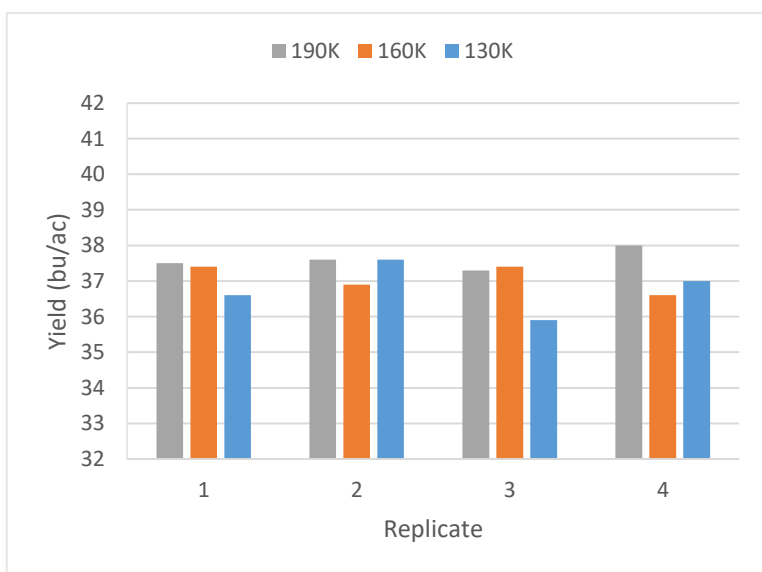
	May	June	July	Aug
Rainfall	30	73	66	29
Normal	54	86	72	65

† Growing season precipitation (mm)

OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	37.6
160,000 seeds/ac	37.1
130,000 seeds/ac	36.8
P-Value	0.1145
CV	1.6%
Significance	No

STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 9" row spacing. Soybean plant stand ranged from a high of 175,000 plants/ac to a low of 125,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP08 – R.M. of Morris

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Morris
Previous Crop	Oats
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Planter
Planting Date	May 14, 2018
Variety	LS Eclipse
Row Spacing	30"
Harvest Date	September 10, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	182,000	169,000
160,000 seeds/ac	123,000	135,000
130,000 seeds/ac	150,000	125,000

PRECIPITATION[†]

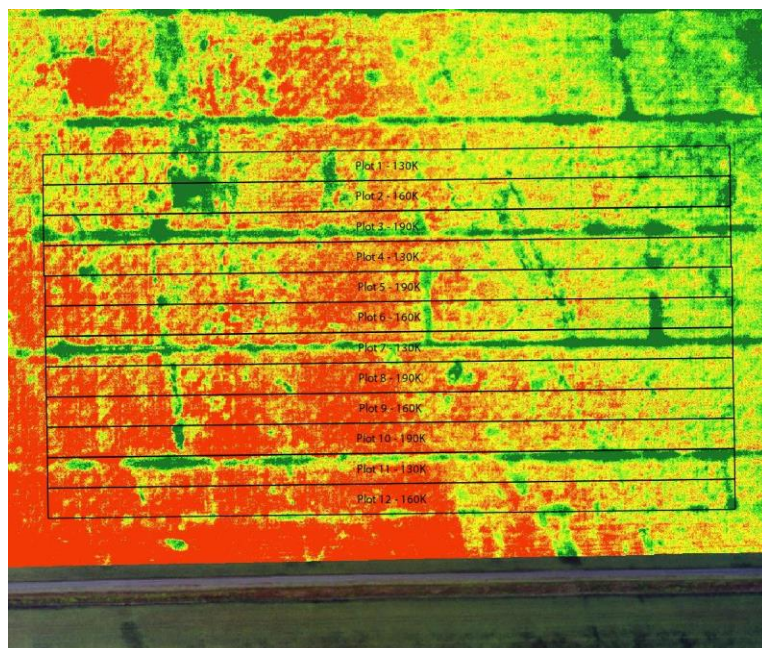
	May	June	July	Aug
Rainfall	30	73	66	29
Normal	54	86	72	65

[†] Growing season precipitation (mm)

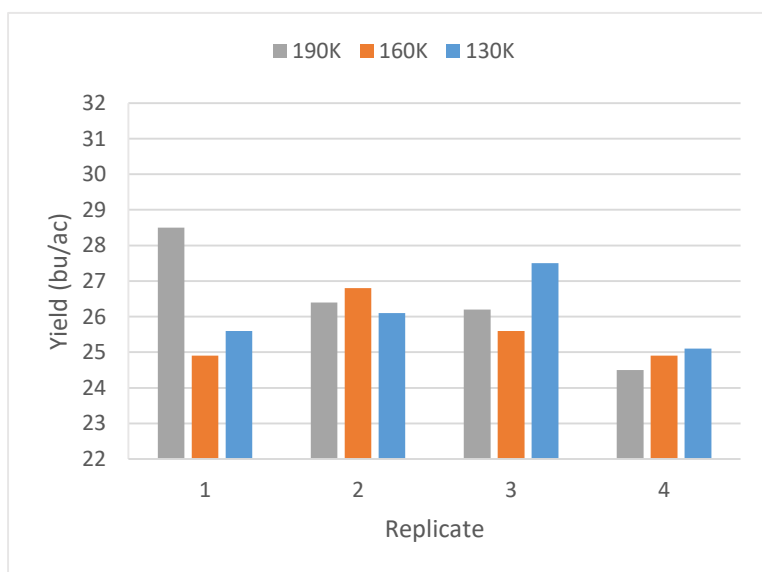
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	26.4
160,000 seeds/ac	25.6
130,000 seeds/ac	26.1
P-Value	0.6072
CV	4.5%
Significance	No

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans planted at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 30" row spacing. Soybean plant stand ranged from a high of 182,000 plants/ac to a low of 123,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP09 – R.M. of Montcalm

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Montcalm
Previous Crop	Millet
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 15, 2018
Variety	PRO 2525R2
Row Spacing	10"
Harvest Date	September 18, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	154,000	157,000
160,000 seeds/ac	117,000	130,000
130,000 seeds/ac	136,000	110,000

PRECIPITATION†

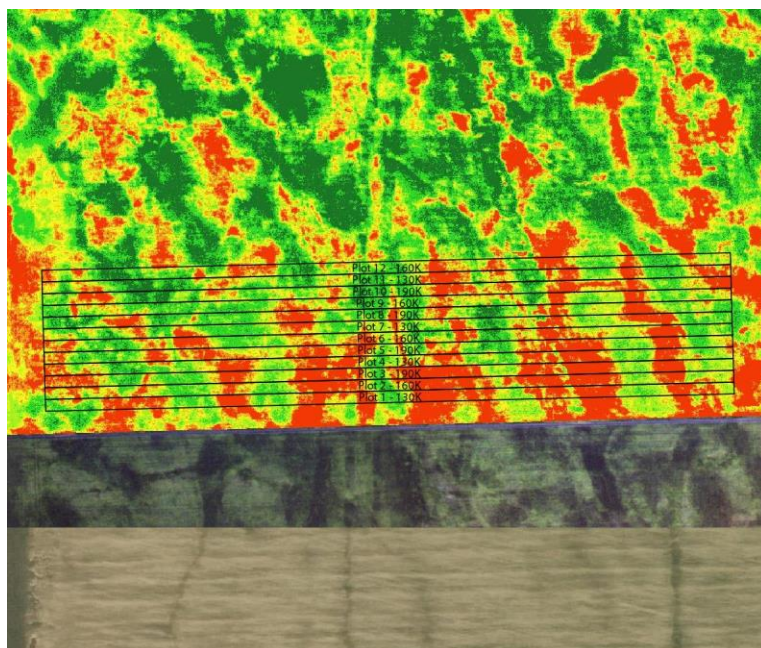
	May	June	July	Aug
Rainfall	44	69	47	37
Normal	58	90	81	72

† Growing season precipitation (mm)

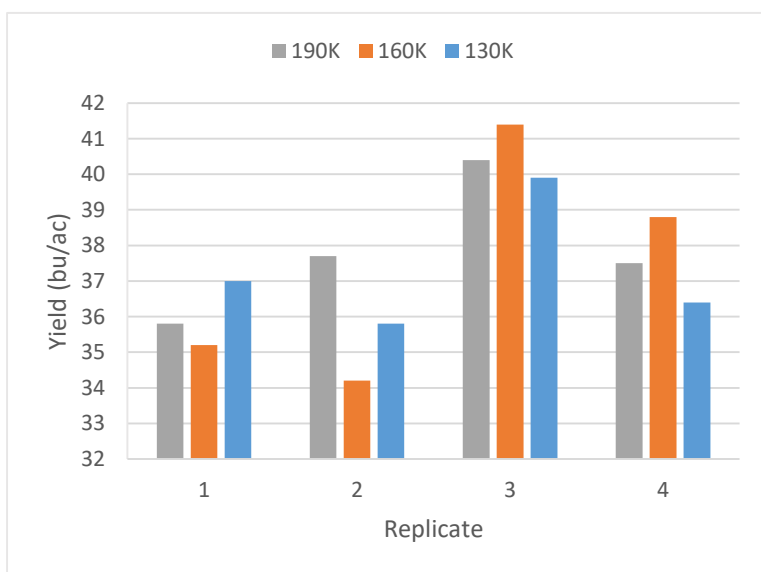
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	37.9
160,000 seeds/ac	37.4
130,000 seeds/ac	37.3
P-Value	0.8263
CV	5.9%
Significance	No

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 154,000 plants/ac to a low of 117,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP11 – R.M. of St. Andrews

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	St. Andrews
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 17, 2018
Variety	24-10RY
Row Spacing	10"
Harvest Date	October 19, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	171,000	160,000
160,000 seeds/ac	152,000	148,000
130,000 seeds/ac	139,000	133,000

PRECIPITATION†

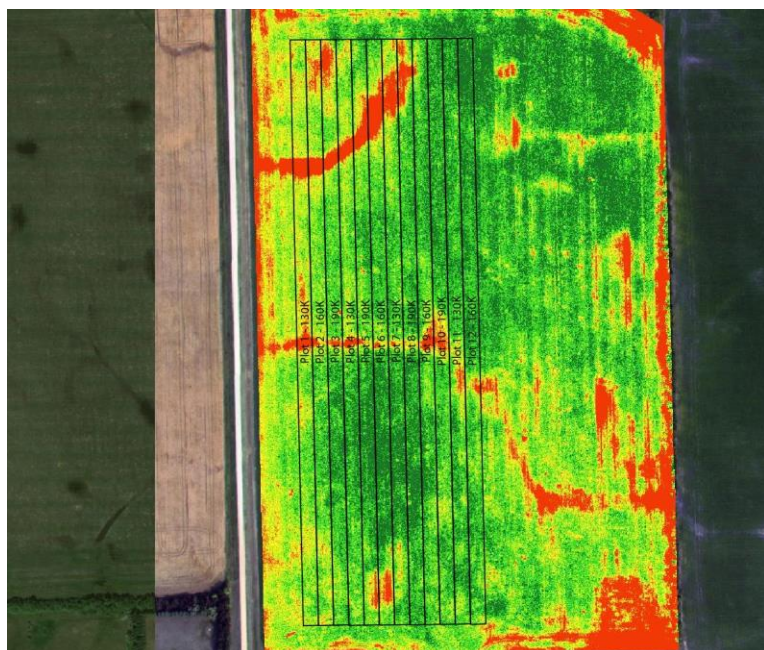
	May	June	July	Aug
Rainfall	39	93	32	63
Normal	54	91	81	74

† Growing season precipitation (mm)

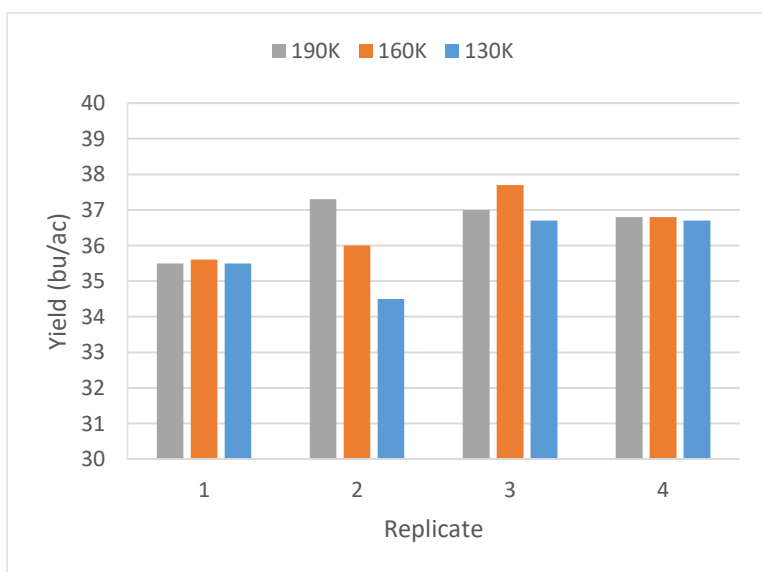
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	36.7
160,000 seeds/ac	36.5
130,000 seeds/ac	35.9
P-Value	0.2985
CV	2.5%
Significance	No

NDVI FIELD IMAGE – AUGUST 13, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 171,000 plants/ac to a low of 139,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP12 – R.M. of Wallace-Woodworth

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Wallace-Woodworth
Previous Crop	Annual Rye Grass
Soil Texture	Clay Loam
Tillage	No-till
Seeding Equipment	Planter
Planting Date	May 28, 2018
Variety	P006T78R
Row Spacing	15"
Harvest Date	October 16, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	153,000	142,000
160,000 seeds/ac	142,000	135,000
130,000 seeds/ac	103,000	101,000

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	63	97	58	24
Normal	48	76	65	58

[†] Growing season precipitation (mm)

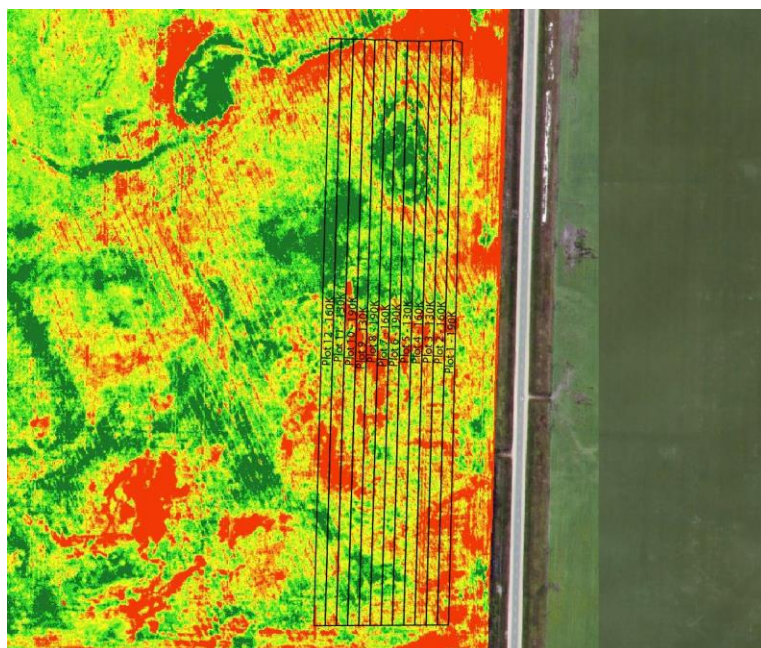
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	27.4 a
160,000 seeds/ac	26.8 ab
130,000 seeds/ac	26.0 b
P-Value	0.0254
CV	4.7%
Significance	Yes

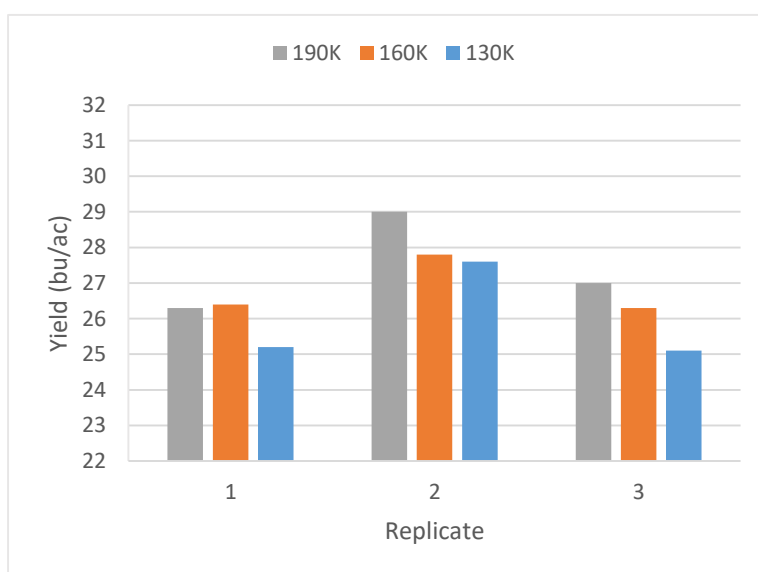
*Means followed by the same letter are not significantly different at P=0.05

Summary: There was a significant yield difference between soybeans planted at 190,000 seeds/ac compared to 130,000 seeds/ac, but no significant difference compared to 160,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 153,000 plants/ac to a low of 103,000 plants/ac when assessed at growth stage V1.

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



Soybean Seeding Rate Trial

Trial ID: 2018-SP13 – R.M. of Grassland

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Grassland
Previous Crop	Wheat
Soil Texture	Loamy Very Fine Sand
Tillage	No-till
Seeding Equipment	Planter
Planting Date	May 22, 2018
Variety	23-11
Row Spacing	15"
Harvest Date	September 28, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	143,000	138,000
160,000 seeds/ac	127,000	117,000
130,000 seeds/ac	97,000	91,000

PRECIPITATION†

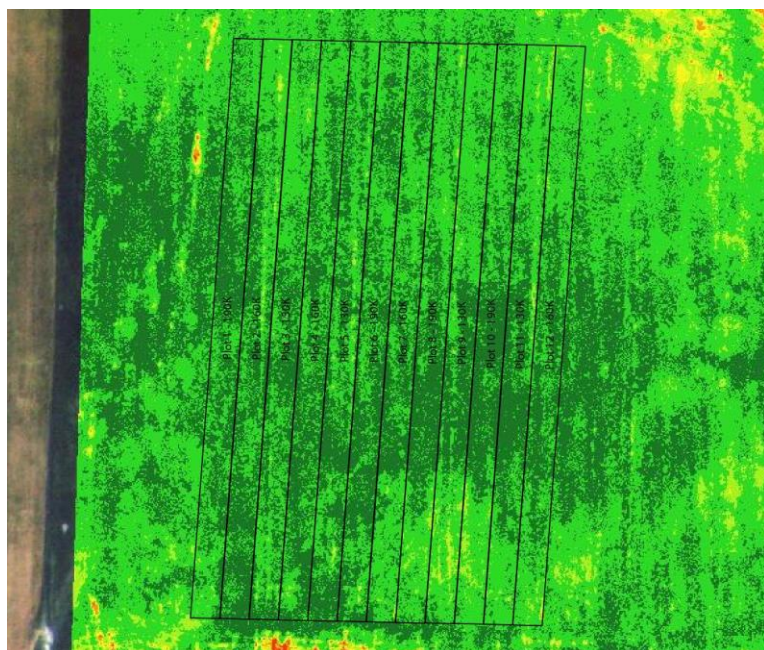
	May	June	July	Aug
Rainfall	15	116	80	21
Normal	47	84	65	58

† Growing season precipitation (mm)

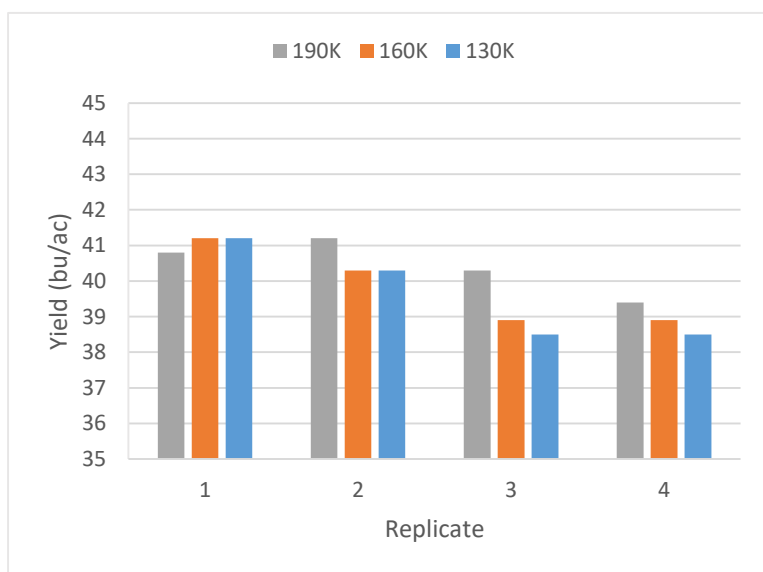
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	40.4
160,000 seeds/ac	39.8
130,000 seeds/ac	39.6
P-Value	0.1340
CV	2.7%
Significance	No

NDVI FIELD IMAGE – AUGUST 10, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans planted at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 15" row spacing. Soybean plant stand ranged from a high of 143,000 plants/ac to a low of 97,000 plants/ac when assessed at growth stage V1.

Soybean Seeding Rate Trial

Trial ID: 2018-SP16 – R.M. of Woodlands

Objective: Quantify the agronomic and economic impacts of a seeding rate of 190,000 seeds/ac, 160,000 seeds/ac and 130,000 seeds/ac.

TRIAL INFORMATION

Treatment	190K vs 160K vs 130K
Rural Municipality	Woodlands
Previous Crop	Spring Wheat
Soil Texture	Clay
Tillage	Conventional
Seeding Equipment	Air Drill
Planting Date	May 23, 2018
Variety	Bourke R2X
Row Spacing	10"
Harvest Date	September 20, 2018

SEEDING RATE VS. PLANT STAND

Seeding Rate	Plant Stand @ V1	Plant Stand @ Harvest
190,000 seeds/ac	167,000	129,000
160,000 seeds/ac	131,000	122,000
130,000 seeds/ac	94,000	97,000

PRECIPITATION[†]

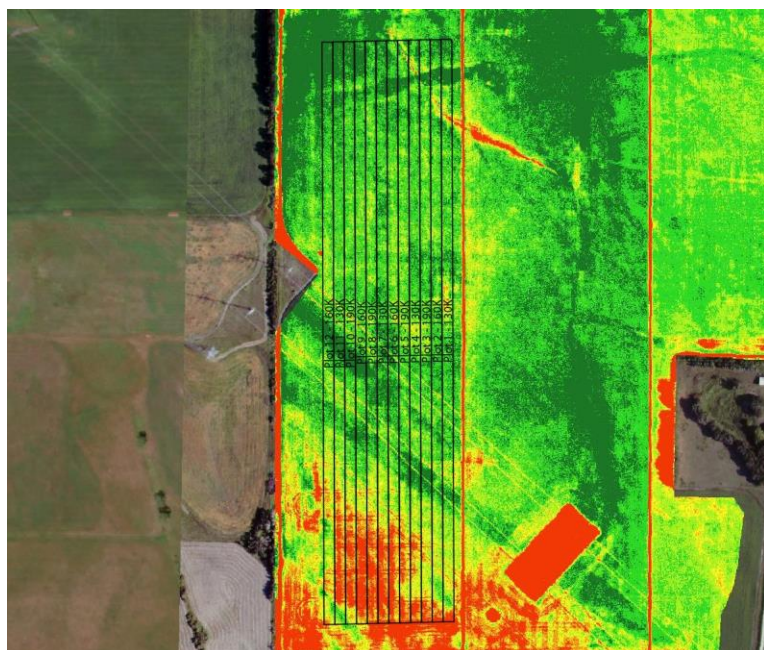
	May	June	July	Aug
Rainfall	47	90	90	77
Normal	54	92	66	63

[†] Growing season precipitation (mm)

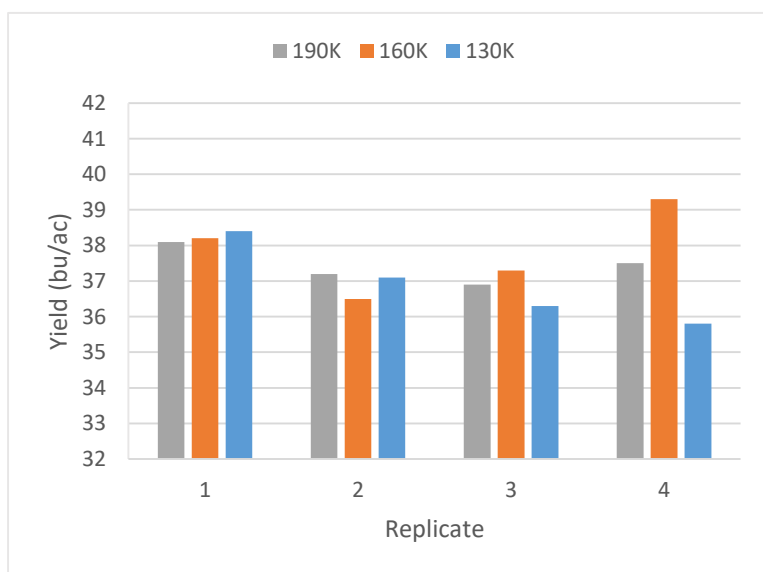
OVERALL YIELD

	Mean (bu/ac)
190,000 seeds/ac	37.8
160,000 seeds/ac	37.4
130,000 seeds/ac	36.9
P-Value	0.4267
CV	2.6%
Significance	No

NDVI FIELD IMAGE – AUGUST 16, 2018



STRIP YIELD



Summary: There was no significant yield difference between soybeans seeded at 190,000 seeds/ac, 160,000 seeds/ac, and 130,000 seeds/ac on 10" row spacing. Soybean plant stand ranged from a high of 167,000 plants/ac to a low of 94,000 plants/ac when assessed at growth stage V1.

The objective of this study was to quantify the agronomic effects of reduced tillage of ryegrass stubble on a soybean test crop. A single coultter pass in the fall (minimum till) was compared to a 1 pass coultter, 1 pass field cultivator, and 1 pass coultter in the fall (conventional till).

Soybean residue management trial summary at one On-Farm Network trial in Manitoba in 2018.

Trial ID	Rural Municipality	Seeding Date	Soil Temp @ 5 cm*		Plant Stand @ V1		Yield		Yield Difference	CV	P-Value	Statistically Significant @ 95%
			Conv. Till	Min. Till	Conv. Till	Min. Till	Conv. Till	Min. Till				
			°C		'000/ac		bu/ac		bu/ac	%		
SRM01	Roland	May 4	12.4	10.4	109	109	39.3	39.2	0.1	2.0	0.7734	No

*Average hourly soil temperature at 5 cm the day of planting

Soybean Residue Management Trial

Trial ID: 2018-SRM01 – R.M. of Roland

Objective: Quantify the agronomic effects of reduced tillage of ryegrass stubble on a soybean test crop. A single coultter pass in the fall (minimum till) was compared to a 1 pass coultter, 1 pass field cultivator, and 1 pass coultter in the fall (conventional till).

TRIAL INFORMATION

Treatment	Minimum Till vs. Conventional Tillage
Rural Municipality	Roland
Previous Crop	Ryegrass
Test Crop	Soybean
Soil Texture	Clay and Loam
Minimum Tillage	Fall - 1x Coultter
Conventional Tillage	Fall - 1x Coultter, 1x Field Cultivator, 1x Coultter
Seeding Equipment	Salford Disc Drill
Planting Date	May 4, 2018
Variety	S003-L3
Row Spacing	15"
Seeding Rate	200,000 seeds/ac
Harvest Date	September 4, 2018

PRECIPITATION[†]

	May	June	July	Aug
Rainfall	42	92	44	28
Normal	54	81	66	71

[†] Growing season precipitation (mm)

Soil Temperature and Plant Stand

	Average Soil temp at 5 cm*	Plant Stand @ V1
Conventional Till	12.4°C	109,000 plants/ac
Minimum Till	10.4°C	109,000 plants/ac

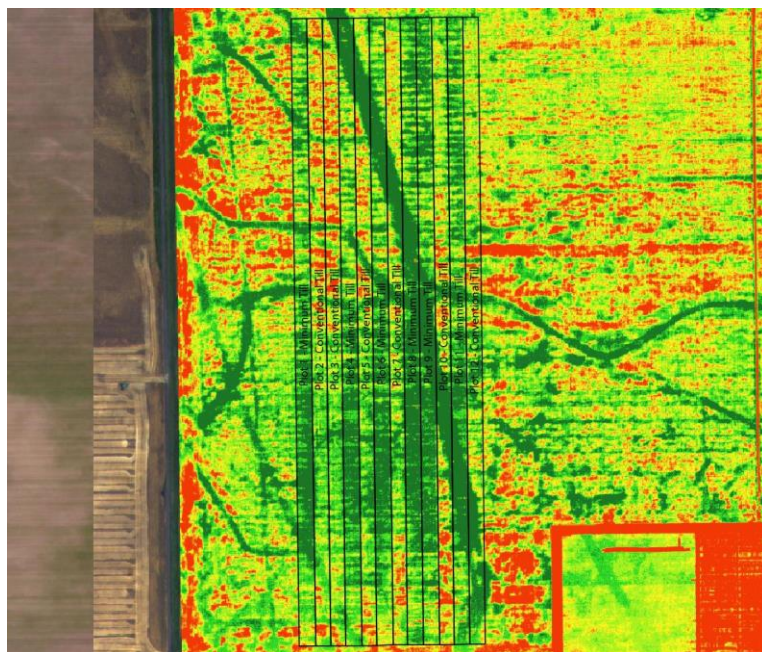
*Average hourly soil temperature at 5cm the day of planting (May 4)

OVERALL YIELD

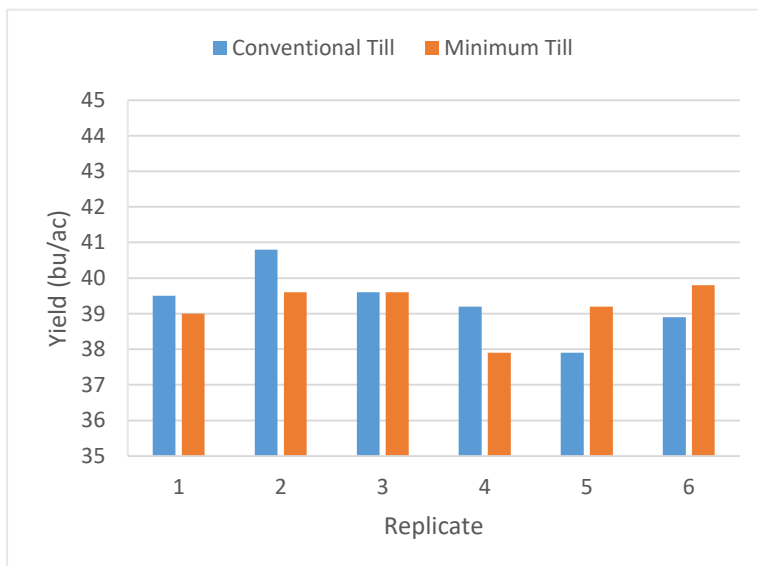
	Mean (bu/ac)
Conventional Till	39.3
Minimum Till	39.2
Yield Difference	0.1
P-Value	0.7734
CV	2.0%
Significance	No

Summary: There was no significant yield difference between a single pass of a coultter (minimum till) compared to a single pass of a coultter, followed by a single pass of a field cultivator and another pass of a coultter (conventional till) in ryegrass stubble. The average soil temperature at 5 cm the day of planting was 2°C warmer for conventional till compared to no-till, and there was no difference in plant stand at growth stage V1. Rainfall was below average for the growing season, with the exception of June which was above normal.

NDVI FIELD IMAGE – AUGUST 11, 2018



STRIP YIELD



The objective of this study was to quantify the agronomic and economic effects of field rolling after soybean planting. This trial in conjunction with the University of Manitoba, Prairie Agricultural Machinery Institute (PAMI), and MPSG.

The effect of rolling was evaluated at 7 on-farm trials in 2018. Data summarization and analysis is on-going and will be reported when available.

If you are interested in the effect of field rolling on soil erosion and soybean performance on non-stony fields, contact MPSG to learn more or sign up to participate in this trial in 2019.

The objective of this study was to quantify the agronomic and economic impacts of both a lesser rate of nitrogen and split nitrogen application to corn in alternating randomized strips across the field.

Corn nitrogen timing trial summary of Split App vs. Base N at 16 On-Farm Network trials across Manitoba in 2018

TRIAL ID	Date Seeded	N Rate Applied (actual lbs/acre)	Base N Type (Spring)	N Application Date (SD)	N Type (SD)	Sidedress Stage	Total Rainfall (Seeding - Maturity) (in)	Split App Yield (bu/ac)	Base N Yield (bu/ac)	Yield Difference (bu/ac)
2017-CRN06	5-9-2017	175 vs. 135 + 40 SD	Urea + Agrotain (B)	7-10-2017	UAN (Dribbled)	V8	5.2	117.2	126.0	-8.8
2017-CRN03	5-5-2017	150 vs. 110 + 40 SD	Urea (B+l)	6-27-2017	UAN (Y-Drop)	V5	5.1	130.2	135.9	-5.7
2017-CRN07	5-10-2017	142 vs. 168 (102 + 66 SD)	Urea (B+l)	6-22-2017	UAN (Coulter Injection)	V5	7.0	121.2	126.6	-5.3
2017-CRN05	5-10-2017	80 vs. 40 + 40 SD	NH3 (Banded with A/S)	6-21-2017	UAN (Streamed)	V4	5.3	122.8	125.8	-3.0
2018-CRN02	5-2-2018	155 vs. 115 vs. 115 + 40 SD	Urea (B+l)	6-21-2018	UAN (Broadcast)	V4	7.4	47.9	50.5	-2.6
2018-CRN03	5-2-2018	130 vs. 90 vs. 90 + 40 SD	Urea (Banded with A/S)	6-22-2018	UAN + Agrotain (Y-Drop)	V5	7.3	86.2	87.3	-1.1
2018-CRN06	5-7-2018	155 vs. 115 vs. 115 + 40 SD	Urea (B)	6-20-2018	UAN + Agrotain (Y-Drop)	V5	7.4	152.2	153.0	-0.8
2017-CRN01	5-5-2017	100 vs. 60 + 40 SD	UAN + Agrotain Plus (B)	6-20-2017	UAN (Streamed)	V4	5.3	140.8	141.5	-0.7
2017-CRN08	5-5-2017	100 vs. 60 + 40 SD	UAN + Agrotain Plus (B)	6-20-2017	UAN (Streamed)	V4	5.8	135.5	135.7	-0.2
2018-CRN05	5-10-2018	150 vs. 110 vs. 110 + 40 SD	Urea (B+l)	6/21/2018	UAN (Dribbled)	V4	9.1	133.7	131.8	1.9
2017-CRN04	5-3-2017	112 vs. 72 + 40 SD	UAN (Banded with A/S)	6-16-2017	UAN (Y-Drop)	V4	8.2	168.4	165.3	3.2
2018-CRN09	5-10-2018	120 vs. 80 vs. 80 + 40 SD	NH3 (Banded with Strip Till)	6-14-2018	UAN (Streamed)	V4	6.9	147.5	144.0	3.5
2017-CRN09	5-4-2017	100 vs. 60 + 40 SD	Urea (Banded with A/S)	7-4-2017	UAN (Broadcast)	V6	6.6	101.1	96.7	4.4
2017-CRN02	5-2-2017	145 vs. 105 + 40 SD	UAN (B+l)	6-16-2017	UAN (Y-Drop)	V5	8.4	179.2	173.3	5.9
2018-CRN01	5-5-2018	135 vs. 95 vs. 95 + 40 SD	Urea (Banded with Strip Till)	6-14-2018	UAN (Y-Drop)	V4	8.5	168.5	161.5	7.0
2018-CRN04	5-1-2018	145 vs. 105 vs. 105 + 40 SD	UAN (B+l)	6-14-2018	UAN (Y-Drop)	V4	8.5	153.2	142.9	10.3
AVERAGE							7.0	131.6	131.1	0.5

B = Broadcast B+l = Broadcast + Incorporation
SD = Sidedress

Indicates Statistical Difference at 95% confidence interval



Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

Trial ID: 2018-CRN02 — R.M. of Glenella-Lansdowne

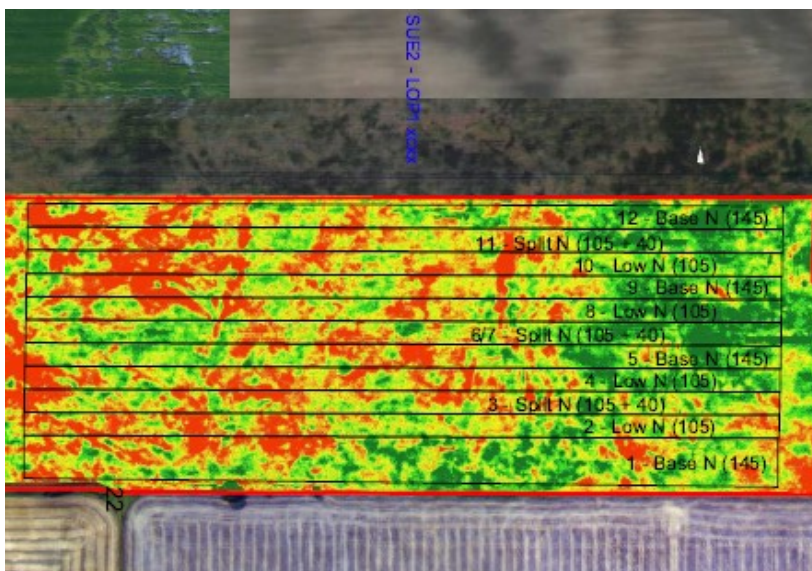
TRIAL INFORMATION	
Location	Arden
Previous Crop	Ryegrass
Soil Description	Loam
Tillage	Cultivate 1x, Disc 1x (Fall) Harrow 1x
Planting Date	May 02, 2018
Variety	LR 9573 VT2PRIB
Row Spacing	30"
Seeding Rate	34,000 seeds/ac
Plant Stand @ V2	22,000 plants/ac
N Rate	155 vs. 115 vs. 115 + 40 @ SD
N Type and Method of Application	
Spring	Urea, APP & Potash (B+I)
Sidedress	UAN (Broadcast) V4
Harvest Date	November 01, 2018

SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
35	9	100	2.0

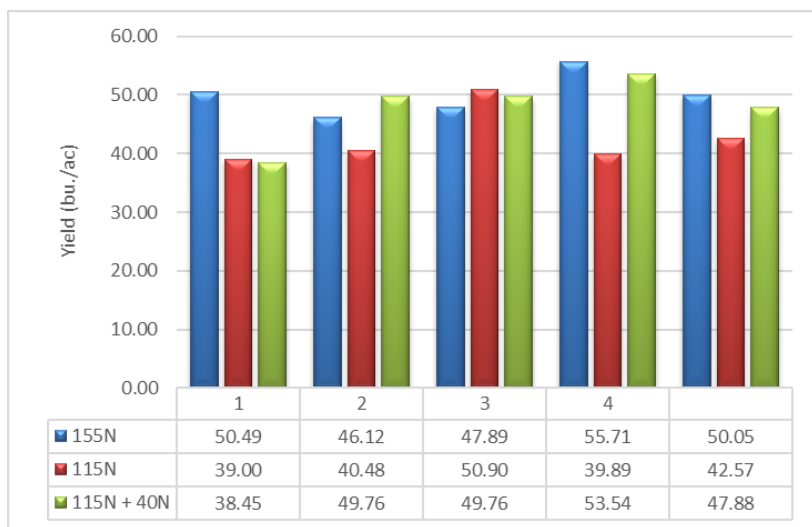
PRECIPITATION (mm)						
	May	June	July	Aug	Total	65% of Normal
Rainfall	36.3	31.0	85.6	34.5	187.4	
Normal	58.6	87.9	74.4	65.9	286.8	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	50.5	42.6	47.9

FIELD IMAGE



STRIP YIELD



Summary: There was no statistical difference in yield between the three treatments.



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Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

Trial ID: 2018-CRN04 — R.M. of North Norfolk

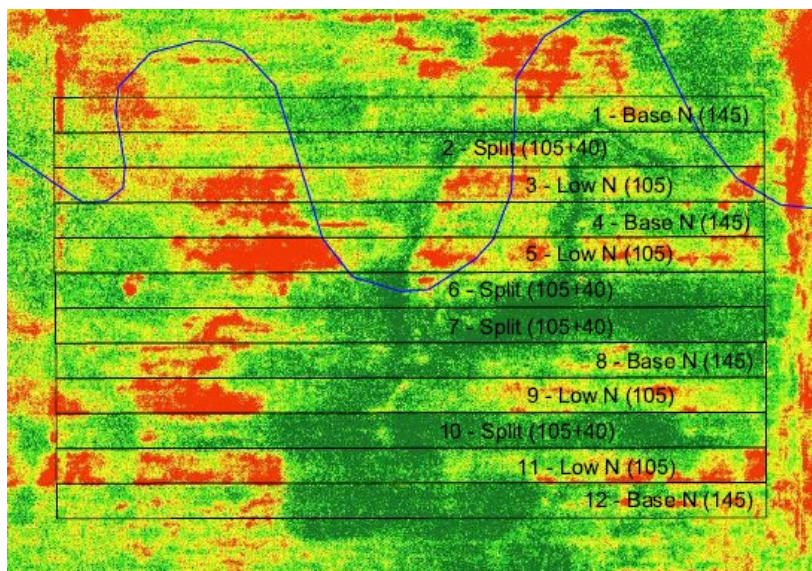
TRIAL INFORMATION	
Location	Bagot
Previous Crop	Spring Wheat
Soil Description	Sandy Loam
Tillage	Disc 1x (Fall) Disc 1x (Spring)
Planting Date	May 01, 2018
Variety	P7958AM
Row Spacing	30"
Seeding Rate	33,000 seeds/ac
Plant Stand @ V3	29,000 plants/ac
N Rate	145 vs. 105 vs. 105 + 40 @ SD
N Type and Method of Application	
Spring	UAN, APP & AS (Banded)
Sidedress	UAN (Y-drop) V4
Harvest Date	October 31, 2018

SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
24	26	98	1.3

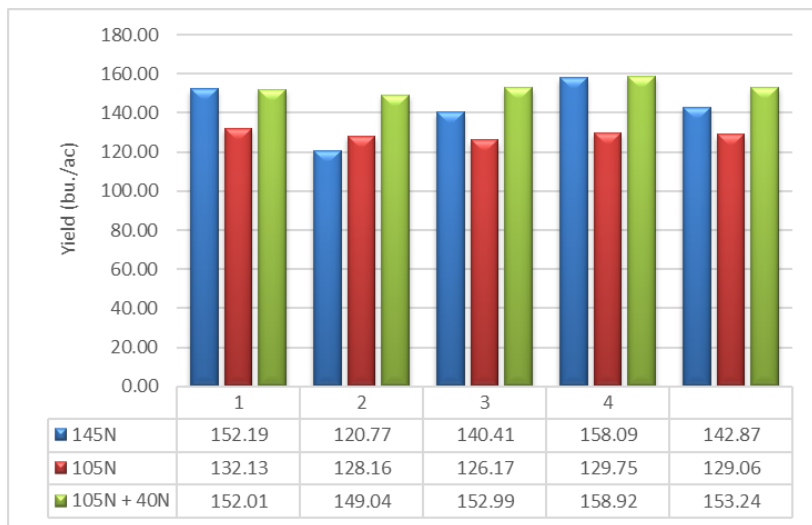
PRECIPITATION (mm)						
	May	June	July	Aug	Total	75% of Normal
Rainfall	19.1	76.7	73.7	45.2	214.7	
Normal	58.6	87.9	74.4	65.9	286.8	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	142.9	129.1	153.2

FIELD IMAGE



STRIP YIELD



Summary: There was a significant yield difference between the split application (105+40N) compared with the low rate (105N).



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Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

Trial ID: 2018-CRN03 — R.M. of Dufferin

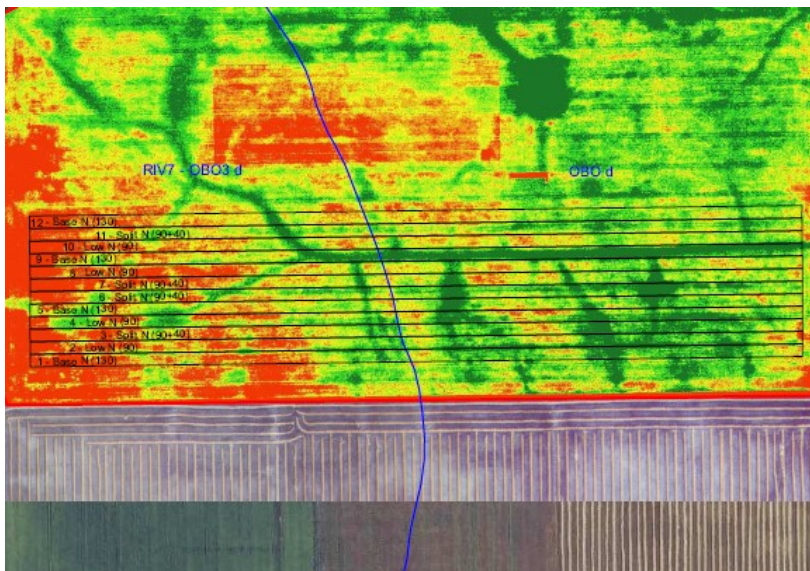
TRIAL INFORMATION	
Location	Carman
Previous Crop	Soybeans
Soil Description	Clay
Tillage	Deep Tillage 1x (Fall)
Planting Date	May 02, 2018
Variety	A4939
Row Spacing	20"
Seeding Rate	36,000 seeds/ac
Plant Stand @ V2	29,000 plants/ac
N Rate	130 vs. 90 vs. 90 + 40 @ SD
N Type and Method of Application	
Spring	Urea + MAP & AS (Banded)
Sidedress	UAN (Broadcast) V5
Harvest Date	September 25, 2018

SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
66	6	512	5.2

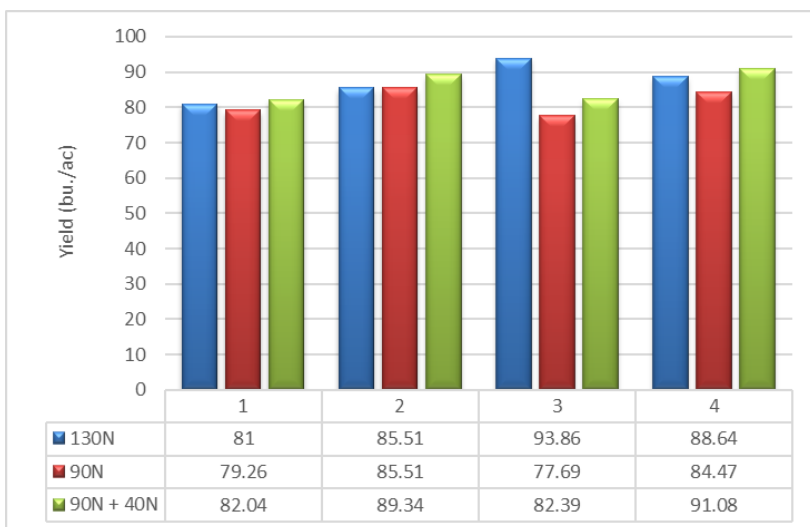
PRECIPITATION (mm)						
	May	June	July	Aug	Total	58% of Normal
Rainfall	25.4	53.3	83.8	21.7	184.2	
Normal	69.6	96.4	78.6	74.8	319.4	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	87.3	81.7	86.2

FIELD IMAGE



STRIP YIELD



Summary: There was a significant yield difference between the split application (90+40N) compared with the low rate (90N).



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Corn Trial—Nitrogen Rate & Timing

3 Nitrogen Rates vs Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both different rates of nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

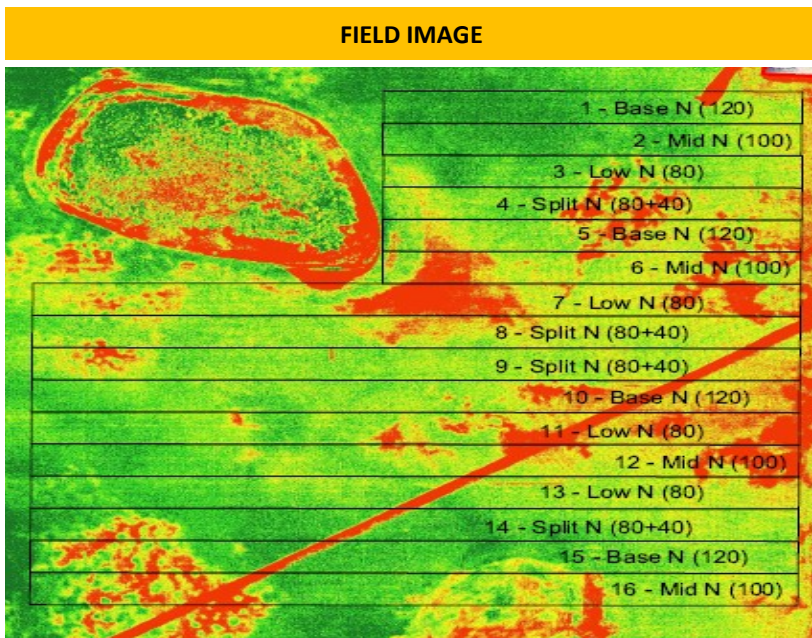
Trial ID: 2018-CRN09 — R.M. of Glenboro-South Cypress

TRIAL INFORMATION	
Location	Glenboro
Previous Crop	Soybeans
Soil Description	
Tillage	Strip Till 1x (Spring)
Planting Date	May 10, 2018
Variety	39V09/P7527AM
Row Spacing	30"
Seeding Rate	35,000 seeds/ac
Plant Stand @ V2	33,000 plants/ac
N Rate	120 vs. 100 vs. 80 vs. 80 + 40 @ SD
N Type and Method of Application	
Spring	Anhydrous (Strip Till)
Sidedress	UAN (Streamed) V4-V5
Harvest Date	November 19, 2018

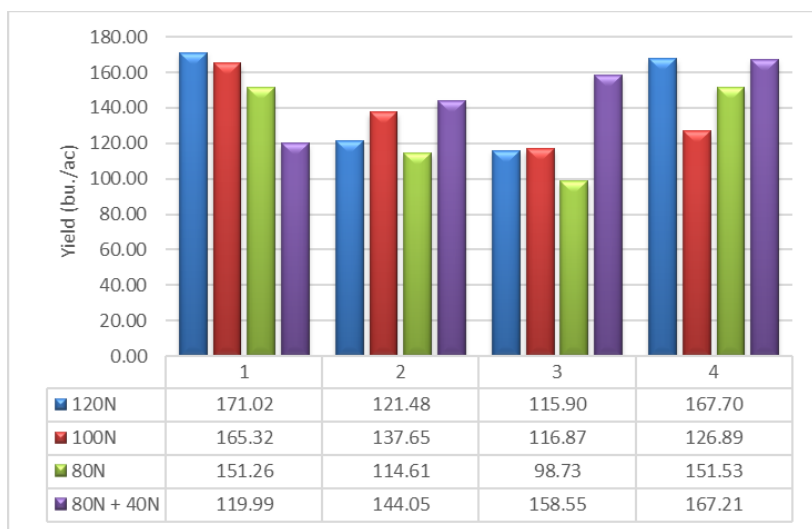
SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
25	10	144	7.9

PRECIPITATION (mm)						
	May	June	July	Aug	Total	
Rainfall	33.5	48.8	75.9	17.3	175.5	57% of Normal
Normal	68.9	92.0	71.9	73.0	305.8	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	144.0	129.0	147.5



STRIP YIELD



Summary: There was a significant yield difference between the Base Rate (120N) compared with the low rate (80N). No statistical differences between the other treatments were observed.



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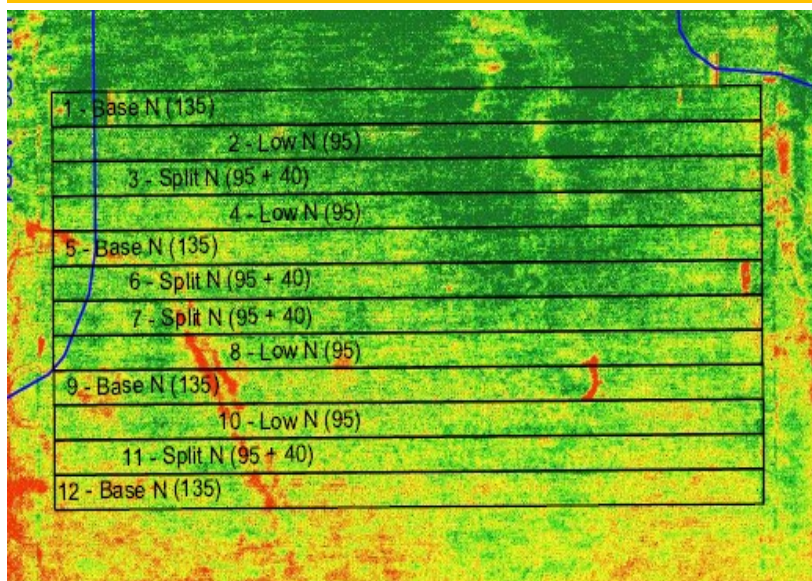
Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

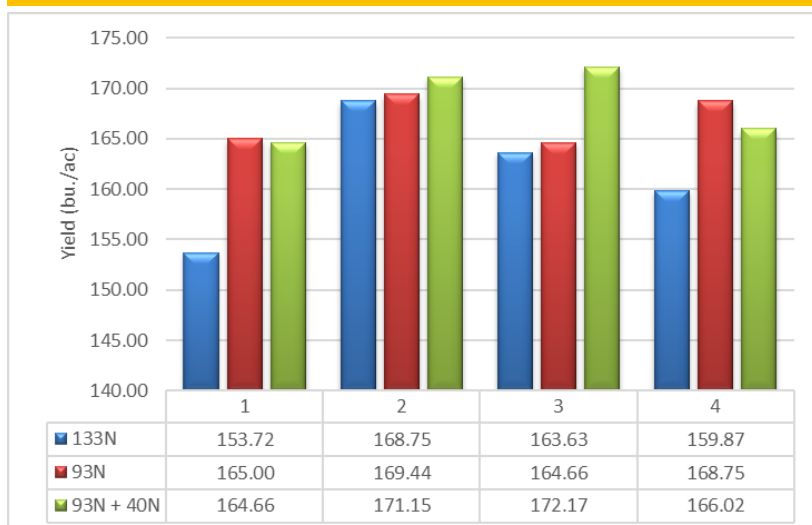
Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

Trial ID: 2018-CRN01 — R.M. of North Norfolk

FIELD IMAGE



STRIP YIELD



Summary: There was a significant yield difference between the split application (93+40N) compared with the base rate (133N).

TRIAL INFORMATION	
Location	MacGregor
Previous Crop	Dry Beans
Soil Description	Loam
Tillage	Strip Till 1x (Spring)
Planting Date	May 05, 2018
Variety	TH7578VT2P
Row Spacing	30"
Seeding Rate	34,000 seeds/ac
Plant Stand @ V3	33,000 plants/ac
N Rate	133 vs. 93 vs. 93 + 40 @ SD
N Type and Method of Application	
Spring	Urea & Potash (Banded)
Sidedress	UAN (Y-drop) V4
Harvest Date	November 15, 2018

SOIL PROPERTIES (prior to spring application)

N 0-24"	P (ppm)	K (ppm)	% O.M.
8	21	163	3.2

PRECIPITATION (mm)

	May	June	July	Aug	Total	75% of Normal
Rainfall	19.1	76.7	73.7	45.2	214.7	
Normal	58.6	87.9	74.4	65.9	286.8	

OVERALL YIELD

	Base N	-40N	Split Application
bu./ac	161.5	167.0	168.5



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Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

Trial ID: 2018-CRN06 — R.M. of Ste. Anne

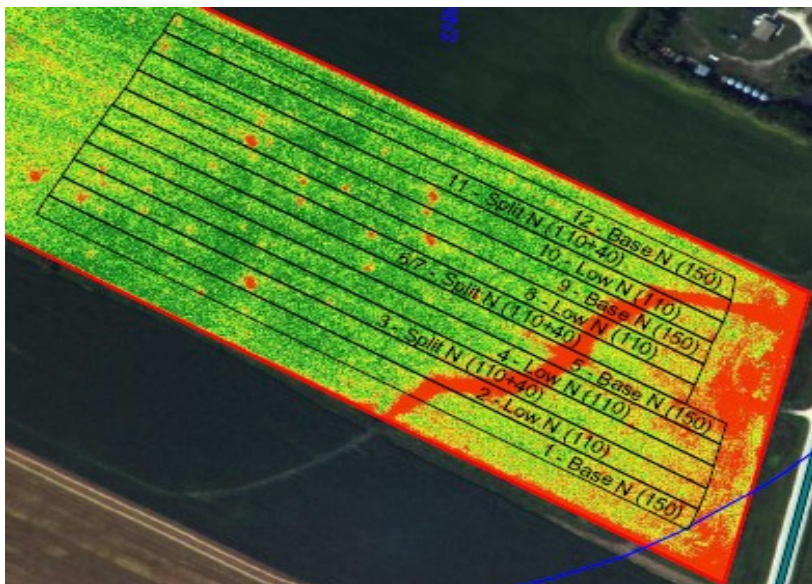
TRIAL INFORMATION	
Location	Ste. Anne
Previous Crop	Soybeans
Soil Description	Clay
Tillage	Chisel Plowed 1x (Fall) Harrow 1x (Spring)
Planting Date	May 07, 2018
Variety	DKC33-78RIB
Row Spacing	30"
Seeding Rate	34,000 seeds/ac
Plant Stand @ V2	31,000 plants/ac
N Rate	156 vs. 116 vs. 116 + 40 @ SD
N Type and Method of Application	
Spring	Urea (Broadcast)
Sidedress	UAN (Y-drop) V5
Harvest Date	October 29, 2018

SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
57	26	476	7.6

PRECIPITATION (mm)						
	May	June	July	Aug	Total	56% of Normal
Rainfall	17.8	87.1	54.4	28.2	187.5	
Normal	69.2	100.1	93.2	73.8	336.3	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	153.0	151.7	152.2

FIELD IMAGE



STRIP YIELD



Summary: There were no statistical differences between the three treatments.



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Corn Trial—Nitrogen Rate & Timing

Base N vs. Base N - 40N vs. Base N - 40N + 40N @ Sidedress

Objective: The purpose of this project is to quantify the agronomic and economic impacts of both a lesser rate nitrogen and a split nitrogen application to corn in alternating randomized strips across the field.

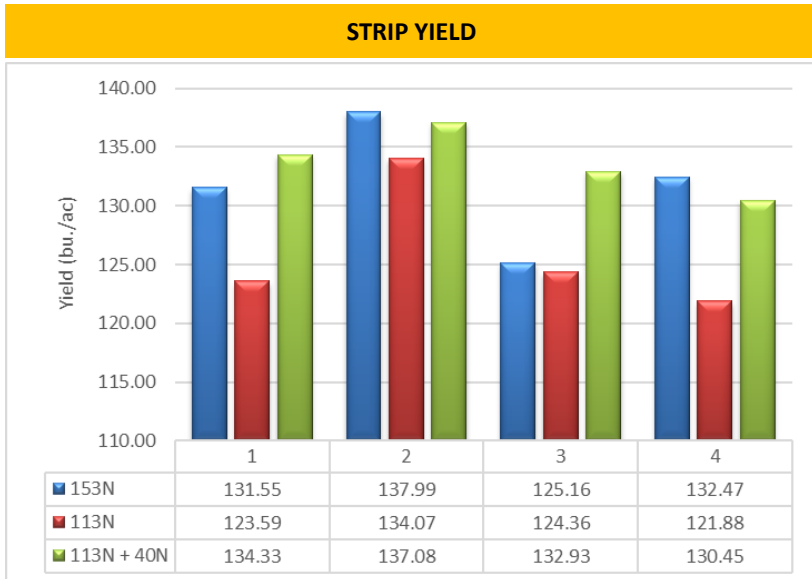
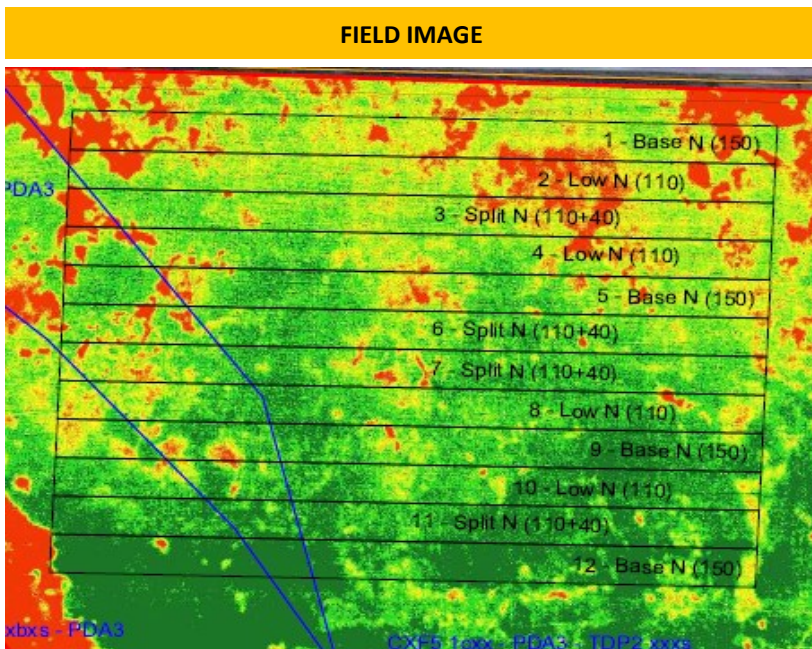
Trial ID: 2018-CRN05 — R.M. of Wallace-Woodworth

TRIAL INFORMATION	
Location	Virden
Previous Crop	Canola
Soil Description	Loam
Tillage	Heavy Harrow 2x (Fall)
Planting Date	May 10, 2018
Variety	P7211HR
Row Spacing	30"
Seeding Rate	30,000 seeds/ac
Plant Stand @ V2	31,000 plants/ac
N Rate	153 vs. 113 vs. 113 + 40 @ SD
N Type and Method of Application	
Spring	Urea, MAP & Potash (B+I)
Sidedress	UAN (Dribbled) V4
Harvest Date	October 31, 2018

SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
40	9	180	3.4

PRECIPITATION (mm)						
	May	June	July	Aug	Total	87% of Normal
Rainfall	13.0	127.8	71.1	19.3	231.2	
Normal	54.1	82.2	66.7	62.1	265.1	

OVERALL YIELD			
	Base N	-40N	Split Application
bu./ac	131.8	126.0	133.7



Summary: There was a significant yield difference between the split application (113+40N) compared with the low rate (113N).



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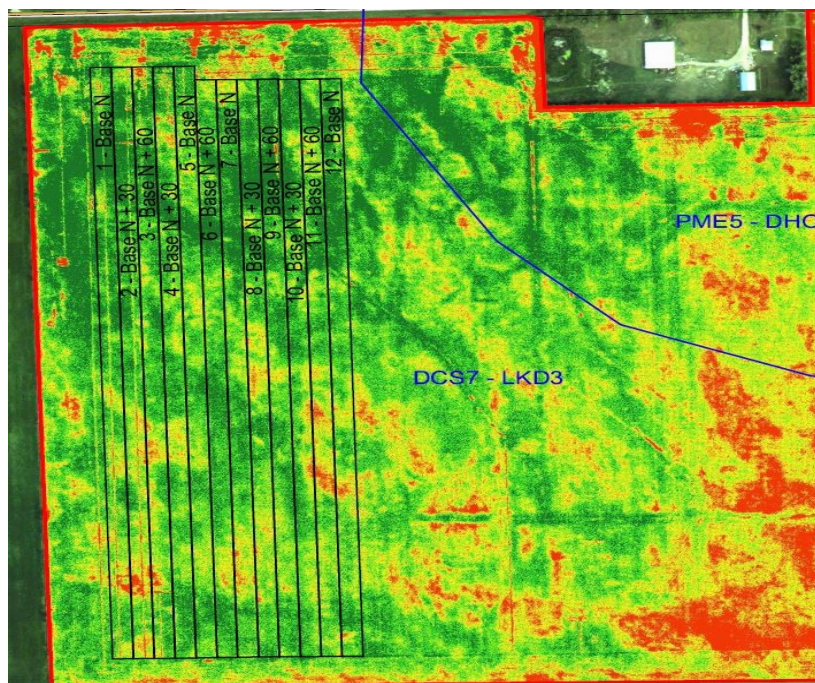
Corn Trial—Nitrogen Rate

Base N vs. Base N + 30N vs. Base N + 60N

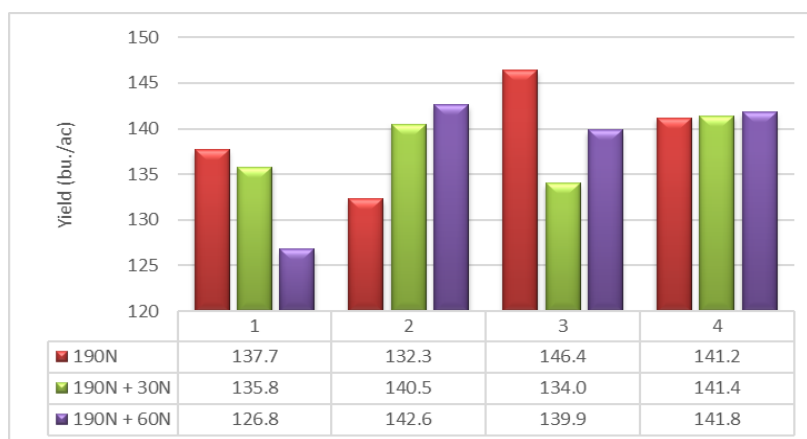
Objective: The purpose of this project is to quantify the agronomic and economic impacts of additional nitrogen application to corn on fall-applied manured ground in alternating randomized strips across the field.

Trial ID: 2018-CRN10 — R.M. of Montcalm

FIELD IMAGE



STRIP YIELD



Summary: There was no statistical difference in yield between the three treatments.

TRIAL INFORMATION	
Location	Altona
Previous Crop	Canola
Soil Description	Clay
Tillage	Cultivate 3x (Fall)
Planting Date	May 01, 2018
Variety	TH 7578 VT2P
Row Spacing	30"
Seeding Rate	35,000 seeds/ac
Plant Stand @ V3	34,000 plants/ac
N Rate	190N vs. 220N vs. 250N
N Type and Method of Application	
Fall	Liquid Swine Manure (Injected)
In-season	UAN (Y-drop) V6
Harvest Date	October 18, 2018

SOIL PROPERTIES (prior to spring application)

N 0-24"	P (ppm)	K (ppm)	% O.M.
190	91	482	6.0

PRECIPITATION (mm)

	May	June	July	Aug	Total	50% of Normal
Rainfall	34.8	57.7	52.1	26.9	171.5	
Normal	68.6	101.8	85.6	83.9	339.9	

OVERALL YIELD

	Base N (190N)	+30N (220N)	+60N (250N)
bu./ac	139.4	137.9	137.8



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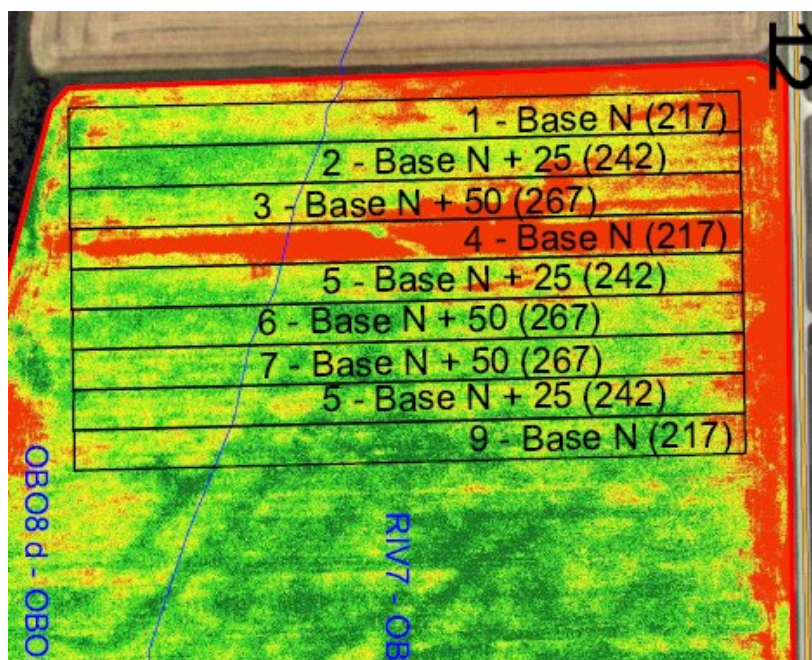
Corn Trial—Nitrogen Rate

Base N vs. Base N + 25N @ Sidedress vs. Base N + 50N @ Sidedress

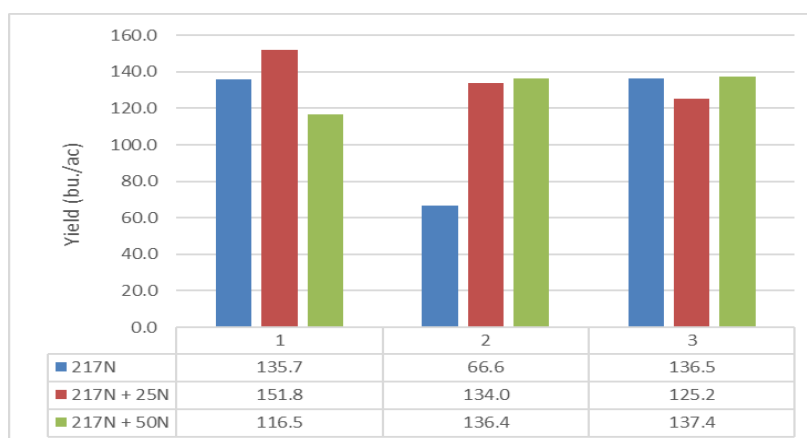
Objective: The purpose of this project is to quantify the agronomic and economic impacts of additional in-season nitrogen application to corn on fall-applied manured ground in alternating randomized strips across the field.

Trial ID: 2018-CRN12 — R.M. of Tache

FIELD IMAGE



STRIP YIELD



Summary: There were no statistical differences between the three treatments.

TRIAL INFORMATION			
Location	Landmark		
Previous Crop	Spring Wheat		
Soil Description	Clay		
Tillage	Chisel Plow 1x (Fall) Harrow 1x (Spring)		
Planting Date	May 04, 2018		
Variety	DKC33-78RIB		
Row Spacing	30"		
Seeding Rate	34,000 seeds/ac		
Plant Stand @ V3	32,000 plants/ac		
N Rate	217N vs. 242N vs. 267N		
N Type and Method of Application			
Fall	Liquid Poultry Manure (B+)		
Sidedress	UAN (Y-drop) V5		
Harvest Date	September 29, 2018		
SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
217	32	528	7.4

PRECIPITATION (mm)						
	May	June	July	Aug	Total	55% of Normal
Rainfall	34.3	68.1	54.6	28.2	185.2	
Normal	69.2	100.1	93.2	73.8	336.3	

OVERALL YIELD			
	Base N (217N)	+25N (242N)	+50N (267N)
bu./ac	112.9	137.0	130.1



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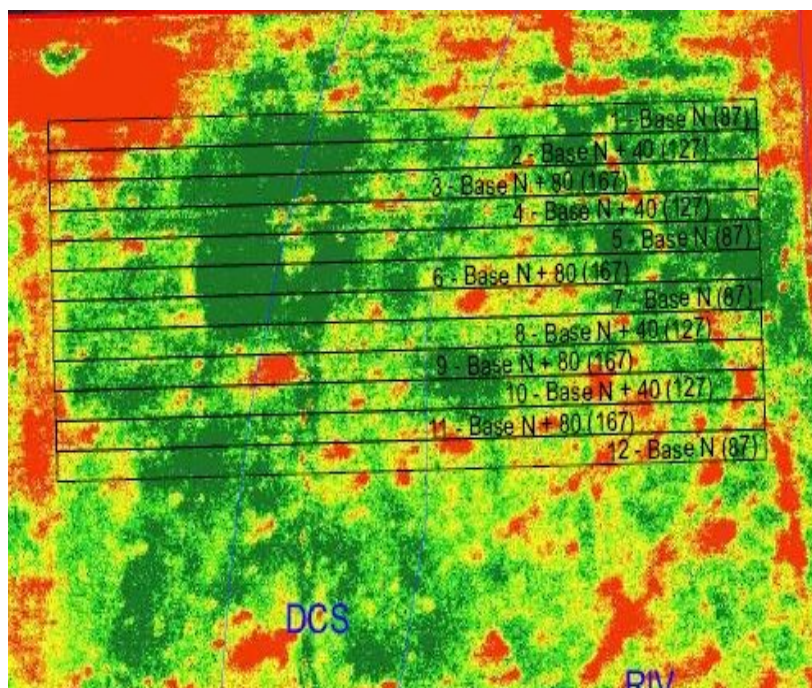
Corn Trial—Nitrogen Rate

Base N vs. Base N + 40N vs. Base N + 80N

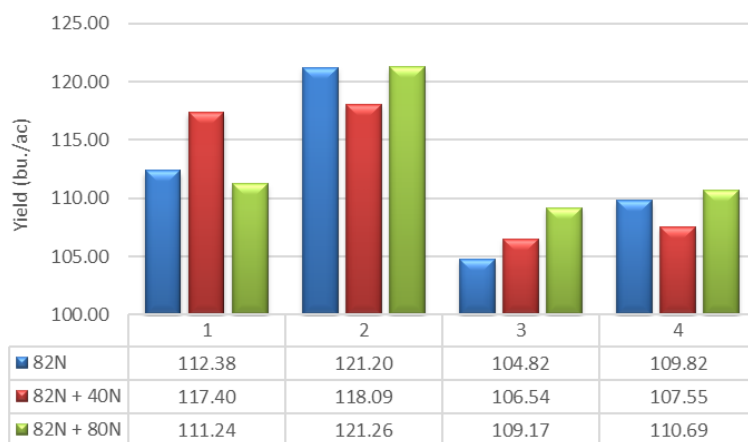
Objective: The purpose of this project is to quantify the agronomic and economic impacts of additional nitrogen application to corn on fall-applied manured ground in alternating randomized strips across the field.

Trial ID: 2018-CRN07 — R.M. of Hanover

FIELD IMAGE



STRIP YIELD



Summary: There were no statistical differences between the three treatments.

TRIAL INFORMATION	
Location	New Bothwell
Previous Crop	Soybeans
Soil Description	Clay
Tillage	Cultivate 2x (Fall) Harrow 1x (Spring)
Planting Date	May 08, 2018
Variety	P8210HR
Row Spacing	22"
Seeding Rate	29,500 seeds/ac
Plant Stand @ V3	28,900 plants/ac
N Rate	82N vs. 122N vs. 162N
N Type and Method of Application	
Fall	Liquid Poultry Manure (l)
Spring	Urea (Broadcast) VE
Harvest Date	October 02, 2018
SOIL PROPERTIES (prior to spring application)	
N 0-24"	P (ppm)
82	25
K (ppm)	% O.M.
312	4.6

PRECIPITATION (mm)						
	May	June	July	Aug	Total	
Rainfall	36.8	46.5	62.7	36.6	182.6	54% of Normal
Normal	69.2	100.1	93.2	73.8	336.3	

OVERALL YIELD			
	Base N (82N)	+40N (122N)	+80N (162N)
bu./ac	112.1	112.4	113.1



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Corn Trial—Nitrogen Rate

Base N vs. Base N + 40N vs. Base N + 80N

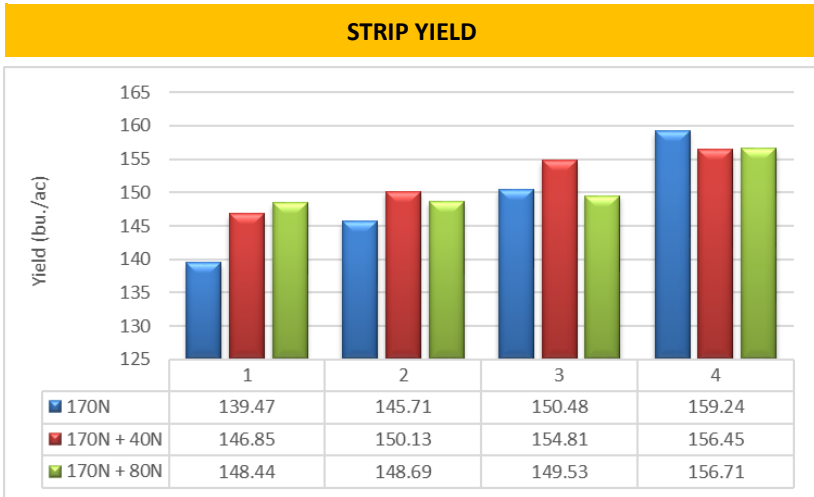
Objective: The purpose of this project is to quantify the agronomic and economic impacts of additional nitrogen application to corn on fall-applied manured ground in alternating randomized strips across the field.

Trial ID: 2018-CRN08 — R.M. of De Salaberry

TRIAL INFORMATION			
Location	St. Pierre		
Previous Crop	Soybeans		
Soil Description	Clay		
Tillage	Cultivate 1x, Harrow 1x (Fall)		
Planting Date	April 28, 2018		
Variety	P7527AM		
Row Spacing	22"		
Seeding Rate	34,000 seeds/ac		
Plant Stand @ V3	30,600 plants/ac		
N Rate	170N vs. 210N vs. 250N		
N Type and Method of Application			
Fall	Liquid Swine Manure (Injected)		
Spring	UAN (Broadcast) VE		
Harvest Date	September 25, 2018		
SOIL PROPERTIES (prior to spring application)			
N 0-24"	P (ppm)	K (ppm)	% O.M.
170	35	555	6.3

PRECIPITATION (mm)						
	May	June	July	Aug	Total	
Rainfall	36.8	46.5	62.7	36.6	182.6	54% of Normal
Normal	69.2	100.1	93.2	73.8	336.3	

OVERALL YIELD			
	Base N (170N)	+40N (210N)	+80N (250N)
bu./ac	148.7	152.1	150.8



Summary: There were no statistical differences between the three treatments.



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