

**Project Title:** Locus Ag industry trial in spring wheat

**Objective:** To test different Locus Ag treatments for quality and yield for spring wheat.

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**Summary:** WB9668 (Westbred) hard spring wheat was planted with the three Locus treatments and a grower practice as a check on two different locations: 1) rainfed silt-loam soil with subsurface recharge and 2) rainfed fine sandy loam soil. The management is shown in Table 1.

All the parameters observed were not significant for both studies. In study 1 with subsurface recharge (Table 3), yield and protein were low compared with the drier environment in Study 2 (Table 4). Study 1, with subsurface recharge, was flooded during the vegetative stage from runoff. We anticipated that there was significant nitrogen loss in this location, thus, with also low protein.

**Table 1.** Management Table

<b>Seeding date:</b>	April 25th, 2022	<b>Field Location:</b>	Y8
<b>Julian date:</b>	115	<b>Harvest date:</b>	8/30/2022
<b>Seeding rate:</b>	Standard	<b>Julian date:</b>	242
<b>Previous crop:</b>	Canola	<b>Soil type:</b>	Creston silt loam
<b>Herbicide:</b>	Axial Bold, CleansweepM 6/1/2022	<b>Tillage:</b>	conventional
<b>Insecticide:</b>		<b>Soil residual nutrient (NO<sub>3</sub><sup>-</sup>, P, K lb/A):</b>	71-40-342
<b>Fungicide:</b>		<b>Nutrient fertilizer applied (N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O lb/A):</b>	80-20-25-10s (4/18/22)

**Table 2.** Management Table

<b>Seeding date:</b>	April 21st, 2022	<b>Field Location:</b>	R6
<b>Julian date:</b>	111	<b>Harvest date:</b>	8/29/2022
<b>Seeding rate:</b>	Standard	<b>Julian date:</b>	241
<b>Previous crop:</b>	Alfalfa	<b>Soil type:</b>	fine sandy loam
<b>Herbicide:</b>	Axial Bold, CleansweepM 6/1/2022	<b>Tillage:</b>	conventional
<b>Insecticide:</b>		<b>Soil residual nutrient (NO<sub>3</sub><sup>-</sup>, P, K lb/A):</b>	78-6-122
<b>Fungicide:</b>		<b>Nutrient fertilizer applied (N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O lb/A):</b>	80-50-60-10s (4/6/2022)

**Table 3.** Spring wheat performance under silt loam soil with subsurface recharge (Study 1)

TRT No.	TREATMENT	Plant count/ft <sup>2</sup>		HT	YLD <sup>1</sup>	PRO <sup>2</sup>	TWT <sup>1</sup>	TKW	FN
		May 25	Harvest	in.	bu/Ac	%	lb/bu	g	seconds
1	Grower's Practice	25	24	27.1	56.7	10.5	63.7	34.5	414
2	Pantego® BA	21	24	26.5	51.1	10.5	63.7	34.7	395
3	Rhizolizer Duo BA®	26	29	26.1	55.2	10.6	63.5	34.8	422
4	LASTW21	19	27	27.7	56.2	10.5	63.8	34.2	416
<b>Mean</b>		21.5	25.6	26.8	54.8	10.5	63.7	34.5	417.6
<b>CV</b>		23.1	21.3	4.3	14.0	2.6	0.3	2.1	4.8
<b>LSD</b>		ns	ns	ns	ns	ns	ns	ns	ns
<b>Pr&lt;F</b>		0.253	0.5456	0.318	0.734	0.925	0.201	0.726	0.836

HT = plant height at harvest, FN=falling number; PRO=protein, TWT = test weight, TKW = thousand kernel weight, YLD=yield, ns=nonsignificant, <sup>1</sup>adjusted to 13% moisture, <sup>2</sup>adjusted to 12% moisture

**Table 4.** Spring wheat performance under Flathead fine sandy loam soil (Study 2)

TRT No.	TREATMENT	Plant count/ft <sup>2</sup>		HT	YLD <sup>1</sup>	PRO <sup>2</sup>	TWT <sup>1</sup>	TKW	FN
		May 25	Harvest	in.	bu/Ac	%	lb/bu	g	seconds
1	Grower's Practice	21	26	28.2	76.7	14.6	59.6	29.7	457
2	Pantego® BA	24	25	27.7	72.4	14.9	59.5	29.5	443
3	Rhizolizer Duo BA®	22	27	27.5	75.6	14.7	59.6	29.6	457
4	LASTW21	20	26	27.5	74.4	14.7	59.8	30.4	453
<b>Mean</b>		21.7	26.1	27.7	74.8	14.7	59.6	29.8	452.8
<b>CV</b>		18.0	23.3	4.2	7.4	1.7	0.9	3.8	2.3
<b>LSD</b>		ns	ns	ns	ns	ns	ns	ns	ns
<b>Pr&lt;F</b>		0.468	0.989	0.802	0.726	0.688	0.886	0.711	0.234

HT = plant height at harvest, FN=falling number; PRO=protein, TWT = test weight, TKW = thousand kernel weight, YLD=yield, ns=nonsignificant, <sup>1</sup>adjusted to 13% moisture, <sup>2</sup>adjusted to 12% moisture