

Project Title: Locus Ag Industry Trial in Spring Canola

Objective: To test different Locus Ag treatments for quality and yield for canola.

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Summary:

Invigor canola was planted with the four Locus seed treatments and a grower practice as a check on April 29, 2022 (see respective management Tables 1 and 2 for details). The seeding rate was 4.5 lbs/Ac targeting 10 seeds/ft² at a 0.99% germination rate based on the germination test. The trial was under a randomized complete block design with four replications. Each plot was separated by a buffer plot to ensure spatial separation between individual treatment plots.

Two environments were tested under Creston Silt Loam with subsurface recharge (Study 1, high moisture) and Creston silt loam without subsurface recharge (Study 2, low moisture). Subsurface recharge is evident in Study 1 location with historical yield and soil moisture sensor data over the years. The management table is shown in Table 1.

In study 1 (Table 3), only the thousand kernel weights were significant where ‘Code T T’ treatment had a smaller seed size than the other treatments. ‘Code B T T’ had the largest seed size. All of the treatments had the same yield as well as the rest of the agronomic performance. In study 2 (Table 4), no significant differences were observed in all parameters gathered.

Table 1. Management information

Seeding date:	4/29/2022	Field Location:	X1
Julian date:	119	Harvest date:	9/2/2022
Seeding rate:	10 seeds/ft ²	Julian date:	252
Previous crop:	Spring Wheat	Soil type:	Creston silt loam
Herbicide:	Liberty 6/1/2022	Tillage:	conventional
Insecticide:	Lambda-CY AG 6/2/2022	Soil residual nutrient (NO₃-, P, K lb/A):	129-32-254
Fungicide:		Nutrient fertilizer applied (N, P₂O₅, K₂O lb/A):	50-25-40 (4/20/2022)

Table 2. Management information

Seeding date:	4/29/2022	Field Location:	D3
Julian date:	119	Harvest date:	9/2/2022
Seeding rate:	10 seeds/ ft2	Julian date:	252
Previous crop:	Spring Wheat	Soil type:	Creston Silt Loam
Herbicide:	Liberty 6/1/2022	Tillage:	Conventional
Insecticide:	Lambda-CY AG 6/2/2022	Soil residual nutrient (NO3-, P, K lb/A):	53-38-414
Fungicide:		Nutrient fertilizer applied (N, P₂O₅, K₂O lb/A):	80-20-25-10s (4/18/2022)

Table 3. Performance of canola under silt loam soil with subsurface recharge (Study 1)

TRT No.	TREATMENT	Plant Count/ft ²		HT	YLD ¹	Oil	Moisture	TWT ¹	TKW
		May 23	Harvest	in	bu/Ac	-----%-----	lb/bu	g	
1	Grower's Practice	13	14	57.7	79.7	47.0	5.7	51.5	4.4
2	Code T T	14	12	58.6	81.3	47.2	5.7	51.5	4.2
3	Rhizolier Duo	10	13	56.4	79.3	47.4	5.7	51.5	4.4
4	Code B T T	13	12	57.6	81.0	47.1	5.7	51.6	4.5
5	LASRY22	11	10	57.5	74.9	47.5	5.7	51.5	4.4
	Mean	12.0	12.1	57.6	79.2	47.2	5.7	51.5	4.4
	CV	31.1	32.2	4.1	8.8	0.9	3.6	0.3	2.2
	LSD	ns	ns	ns	ns	ns	ns	ns	0.146
	PR>F	0.474	0.598	0.761	0.704	0.430	0.992	0.940	0.049

HT = plant height at harvest, TWT = test weight, TKW = thousand kernel weight, YLD=yield, ns=nonsignificant, ¹adjusted to 8.5% moisture

Table 4. Performance of canola under silt loam soil without subsurface recharge (Study 2)

TRT No.	TREATMENT	Plant Count/ft ²		HT	YLD ¹	Oil	Moisture	TWT ¹	TKW
		May 23	Harvest	in	Bu/Ac	-----%-----	lb/bu	g	
1	Grower's Practice	12	14	57.5	46.9	48.9	5.3	52.5	4.2
2	Code TT	9	14	58.3	47.8	48.8	5.3	52.5	4.2
3	Rhizolier Duo	11	12	57.6	40.7	49.3	5.3	52.3	4.2
4	Code B T T	12	11	54.2	40.9	49.1	5.2	52.3	4.2
5	LASRY22	11	12	55.6	38.8	49.2	5.3	52.3	4.2
	Mean	10.9	12.5	56.4	43.0	49.1	5.3	52.4	4.2
	CV	23.3	27.6	6.6	15.5	1.5	4.1	0.6	1.8
	LSD	ns	ns	ns	ns	ns	ns	ns	ns
	PR>F	0.414	0.794	0.446	0.273	0.892	0.735	0.599	0.984

HT = plant height at harvest, TWT = test weight, TKW = thousand kernel weight, YLD=yield, ns=nonsignificant, ¹adjusted to 8.5% moisture