

Minnesota Canola Symposium CPC Project Summary

**December 5, 2024
Roseau, MN**



UNIVERSITY OF MINNESOTA

MN Canola Research Overview - 2024

- **Wet spring delayed canola planting**
- **Warm, wet and humid summer**
- **CPC Site - Northern Resources 1 mile west of Roseau**
- **Marble sized hail - June 13**
- **CPC Field Day - July 17**
- **Heavy white mold pressure**
- **Limited spring and late summer flea beetle populations**

Canola Research Projects - 2024

- **Variety trial 30 entries: 19 LL & 11 RR**
- **Canola harvest comparison - Swath vs direct harvest**
- **Flea beetle trial (Cooperation with Knodel)**
- **White mold (Cooperation with McCaghey)**
- **No-till Burndown Trial**
- **Desiccation trial**
- **Late season flea beetle**
- **Insect monitoring (Cooperation with Knodel)**



Presentation Today

- **Variety trial including swath and direct harvest**
- **Brief summary of flea beetle and white mold trials as Knodel and McCaghey will provide more details**
- **NDAWN sclerotinia risk maps**
- **Desiccation trial**
- **No-till Burndown Trial**
- **Late season flea beetle**
- **Insect survey**
- **Annual Report posted on web: www.mncanola.org**

2024 Growing Season - Recap

- **Wet spring with above normal rainfall**
- **Above average temperatures spring and fall**
- **Marble sized hail on June 13**
- **Low flea beetle pressure**
- **Warm and wet summer**
- **Heavy white mold pressure**
- **Limited late season flea beetle feeding**
- **Average canola yields**



Pea to Marble Sized Hail - June 13



Hail Damage at CPC - June 13

CPC June 12

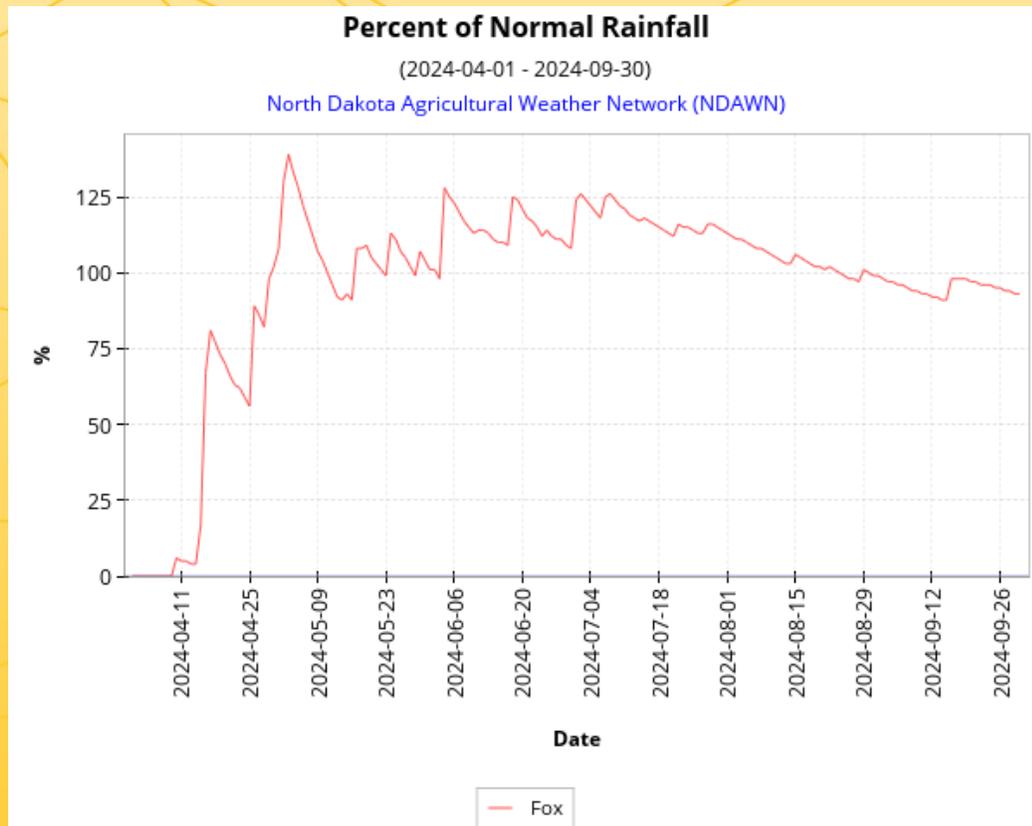


Hail Damage June 13

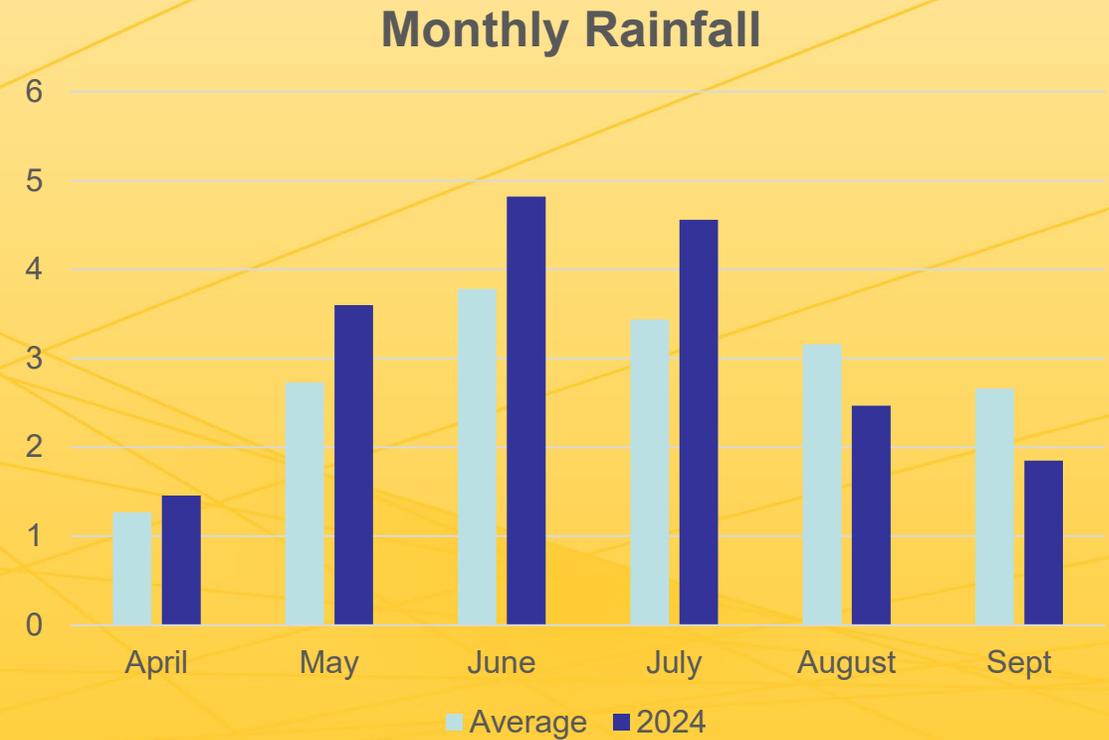


Percent of Normal Rainfall and Monthly Totals at UMN- Mag Farm

Percent of Normal Rainfall

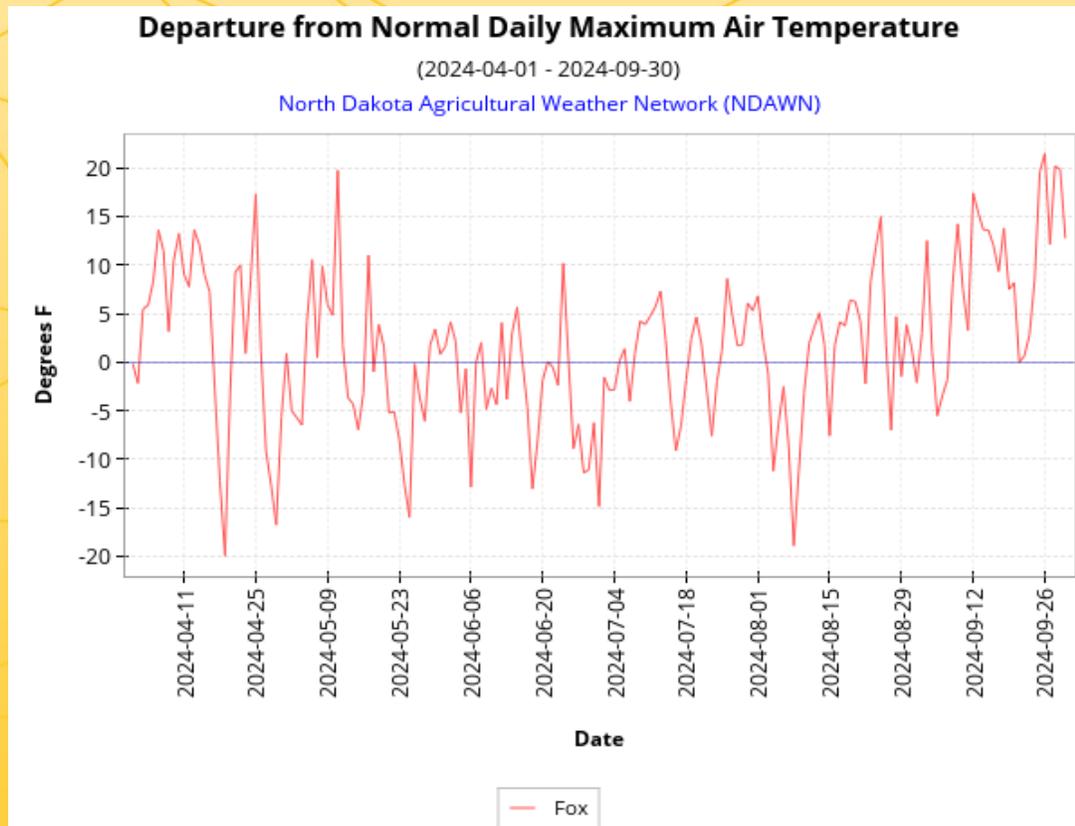


Monthly Rainfall at MN CPC

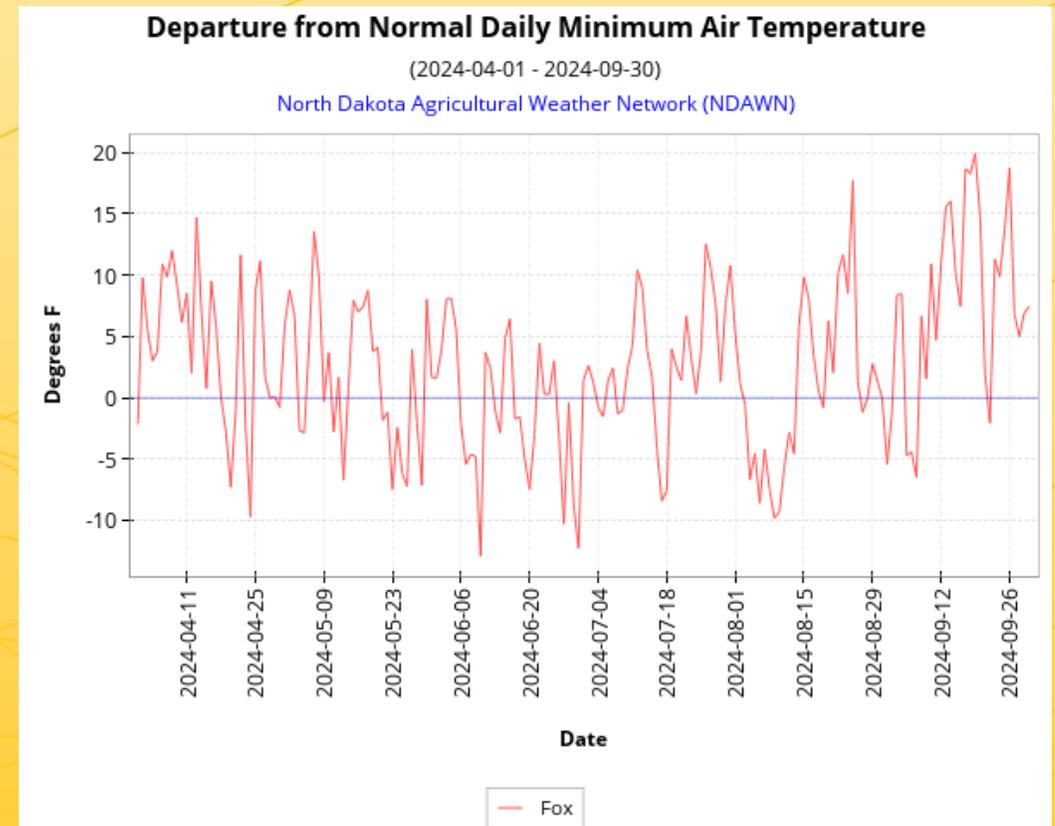


Daily Departure From Normal Max and Min Temperature at UMN Mag Farm

Departure from Max Temp



Departure from Min Temp



Canola Variety Trial - Methods

- **Fertilizer applied PPI (5/22) - 140-30-20-20s**
- **Seeding rate: 10-12 PLS/ft² (PLS from seed companies)**
- **Seeding date: 5/29**
- **Priaxor applied 6/15 after hail event on 6/13**
- **Warrior at 1.5 oz/ac applied on 6/15**
- **Proline at 5.7 oz/ac applied at 30-40% bloom**
- **Swathing date: 9/3**
- **Harvest date: September 12 & 13**



**2024 Canola Swath and Direct Harvest Variety Trial
Northern Resources Cooperative- Roseau, Mn**

Ent#	Company	Variety	Herbicide Tolerance*	#/acre Swath + combine	Protein	Oil	Test wt./bu.	Lodging	Harvest Height (in)	White Mold	ESV-21DAP	Begin Bloom Date	End Bloom Date	Days of bloom	
Swath+Combine plots															
1	BASF	InVigor LR354PC	RR/LL	2336	21.5	44.2	52.1	5.0	58.3	0.3	8.0	12-Jul	30-Jul	18	
2	BASF	InVigor L340PC	LL	2740	22.1	42.5	51.9	4.0	58.3	1.0	8.0	8-Jul	26-Jul	18	
3	BASF	InVigor L343PC	LL	2528	22.1	43.2	52.2	4.5	56.3	1.3	7.8	8-Jul	26-Jul	18	
4	BASF	InVigor L345PC	LL	2571	22.3	42.3	52.2	2.5	58.0	1.8	8.0	9-Jul	28-Jul	19	
5	BASF	InVigor L350PC	LL	2506	22.1	44.5	52.6	3.5	62.5	0.0	8.3	12-Jul	30-Jul	18	
6	BASF	XP1	LL	2833	21.1	43.4	53.1	6.0	59.8	0.3	8.3	9-Jul	26-Jul	17	
7	CROPLAN	CP7250LL	LL	1765	23.4	43.3	52.4	6.5	55.3	0.8	8.3	10-Jul	30-Jul	19	
8	CROPLAN	CP7130LL	LL	1937	22.1	43.6	51.4	2.5	57.8	1.3	8.3	9-Jul	27-Jul	18	
9	Dekalb	DK800LL	LL	2384	21.5	45.1	52.5	2.0	54.5	3.8	8.3	7-Jul	27-Jul	20	
10	Dekalb	DK801LL	LL	2642	22.1	44.6	53.2	2.0	55.0	3.0	8.8	5-Jul	27-Jul	21	
11	Dekalb	DK401TL	TF/LL	2488	21.8	44.8	53.3	3.0	55.5	3.5	8.5	7-Jul	27-Jul	19	
12	Dekalb	DK400TL	TF/LL	2376	22.1	44.5	52.6	3.0	53.5	5.0	9.0	5-Jul	25-Jul	20	
13	Pioneer	P612L	LL	2031	23.1	44.3	52.6	3.0	59.8	0.0	7.8	10-Jul	29-Jul	19	
14	Pioneer	P505MSL	LL	2173	21.5	43.7	52.7	6.0	63.5	0.3	9.0	9-Jul	28-Jul	20	
15	BrettYoung	BY7204LL	LL	2231	21.4	45.3	52.7	3.5	57.8	1.8	8.3	9-Jul	29-Jul	20	
Straight combine plots⁶															
16	BrettYoung	BY7204LL	LL	2147	22.2	44.4	52.7	3.5	62.0	2.0	8.3	9-Jul	29-Jul	20	
17	Dekalb	DK800LL	LL	2486	22.1	44.6	52.8	3.0	62.0	3.0	8.8	7-Jul	28-Jul	20	
18	BASF	InVigor L340PC	LL	2859	22.1	42.1	52.8	5.0	62.3	0.5	7.3	8-Jul	28-Jul	20	
19	BASF	InVigor L343PC	LL	2586	22.4	42.4	52.9	3.5	55.0	1.5	8.3	8-Jul	27-Jul	19	
Swath+Combine plots															
20	BASF	InVigor LR354PC	RR/LL	2324	21.9	44.1	52.8	8.0	57.8	0.0	7.3	11-Jul	31-Jul	19.5	
21	CROPLAN	CP9978TF	TF	2138	22.2	45.2	53.5	4.5	52.0	0.0	7.5	7-Jul	31-Jul	23.3	
22	CROPLAN	CP9221TF	TF	2039	22.8	42.3	52.3	5.5	53.0	1.8	9.0	6-Jul	29-Jul	23.0	
23	Pioneer	P515G	Optimum Gly	2140	20.7	46.5	51.9	6.5	51.3	3.0	7.5	7-Jul	26-Jul	19.3	
24	Nuseed	NC527CR TF	TF	2130	23.5	43.5	52.5	6.0	55.3	0.5	9.0	6-Jul	1-Aug	25.8	
25	Star Specialty	StarFlex	TF	2449	22.1	45.6	52.9	5.0	53.8	0.5	7.5	7-Jul	29-Jul	22.3	
26	Proseed	TR23127	TF	2331	22.9	44.3	52.5	3.5	50.3	3.0	6.3	7-Jul	27-Jul	19.5	
Straight combine plots															
27	Star Specialty Seed	StarFlex	TF	1931	20.4	47.1	52.7	5.5	53.3	0.3	7.0	6-Jul	29-Jul	23.0	
28	Nuseed	NC527CR TF	TF	1302	23.1	43.8	51.8	6.0	51.5	0.0	8.3	7-Jul	1-Aug	25.5	
29	Proseed	TR23127	TF	1566	20.5	46.3	52.6	2.5	53.8	3.0	6.3	6-Jul	27-Jul	20.3	
30	CROPLAN	CP9978TF	TF	1854	21.0	46.3	52.3	5.5	50.3	0.3	7.3	7-Jul	30-Jul	23.0	
All canola varieties				LSD @ 5% level	388	1.3	1.4	1.0	2.0	3.6	1.1	1.1	1	1	1
				LSD @ 10% level	325	1.0	1.1	0.8	1.7	3	1	0.9	1	1	1
				CV(%)	12.2	4.2	2.2	1.3	33.3	4.6	56.4	10.2	6.7	2.4	4.1

Canola VT Yields - Swath and Direct Harvest in 2024

Variety #	Company	Variety	Herb Tolerant*	Swath Yield	Direct Yield
1	BASF	InVigor LR354PC	RR/LL	2336	
2	BASF	InVigor L340PC	LL	2739	2859
3	BASF	InVigor L343PC	LL	2528	2585
4	BASF	InVigor L345PC	LL	2571	
5	BASF	InVigor L350PC	LL	2505	
6	BASF	XP1	LL	2833	
7	CROPLAN	CP7250LL	LL	1765	
8	CROPLAN	CP7130LL	LL	1937	
9	Dekalb	DK800LL	LL	2383	2486
10	Dekalb	DK801LL	LL	2642	
11	Dekalb	DK401TL	TF/LL	2488	
12	Dekalb	DK400TL	TF/LL	2376	
13	Pioneer	P612L	LL	2031	
14	Pioneer	P505MSL	LL	2173	
15	BrettYoung	BY7204LL	LL	2231	2146
20	BASF	InVigor LR354PC	RR/LL	2324	
21	CROPLAN	CP9978TF	TF	2137	1854
22	CROPLAN	CP9221TF	TF	2039	
23	Pioneer	P515G	Optimum Gly	2140	
24	Nuseed	NC527CR TF	TF	2130	1302
25	Star Specialty	StarFlex	TF	2450	1931
26	Proseed	TR23127	TF	2331	1566
			LSD @ 5% level	389	
			LSD @ 10% level	335	
			CV(%)	12.2	

- Canola trial means (#/acre) at 8.5% moisture
- RR/TF = 2,019
- LL = 2,401
- RR/TF Swath = 2,262
- RR/TF Direct = 1,663
- LL Swath = 2,491
- LL Direct = 2,520



Canola Variety Trial - Results

- **Canola yields ranged from 1,302 - 2,859 #/ac**
- **Trial average yield = 2,261; RR = 2,019; LL = 2,401**
- **LSD (0.05) for yield = 514 RR and 320 LL**
- **CV (%) for yield: 17.6 RR and 9.4 LL**
- **Protein ranged from 20.4 - 23.5; Oil ranged from 42.1 - 46.3**
- **Average days of bloom for RR varieties = 22.3; LL = 19.1**
- **Lodging ratings ranged from 2.5 to 6.5. Rating scale 1= flat and 9 = upright.**

Flea Beetle Population is a Blend of Striped and Crucifer Species



Canola Seed Treatment Trial - Methods

- **Canola variety: DK400TL 1-14 and LL 350PC 15&16**
- **Cooperative trial with NDSU**
- **Trial design RCDB with 4 reps**
- **Seeding rate 12 pls/ft²**
- **Trials seeded 5/29 and harvested 9/20**
- **Pea to marble sized hail on 6/13 confounded flea beetle ratings**
- **Flea beetle pressure light to moderate**



2024 Canola Flea Beetle Control-Seed Treatment

Northern Resources-Roseau,Mn

Varieties=DK400TL (trt#1-14) L350 (trt#15-16)

Trt# Seed Treatment and Rate@oz./100# (except Brigade applied post emergent)	#/Ac ¹	Protein ²	Oil ²	#/bu	ht	lod ³	ESV ⁴	Beetle Injury ⁶	10% bloom	End bloom	
1 Fungicide Check	1880	21.3	46.2	52.1	53	3.0	6.5	2.1	7-Jul	25-Jul	
2 Helix Vibrance @ 23	2203	21.0	46.3	52.2	54	3.5	6.3	2.0	7-Jul	25-Jul	
3 Helix Vibrance @ 23 + Fortenza @ 10.2	2385	21.8	45.9	52.2	55	4.0	8.3	1.2	7-Jul	25-Jul	
4 Helix Vibrance @ 23 + Fortenza @ 15.4+Brigade 2EC @2.6	2214	21.4	45.9	52.3	54	3.5	8.0	1.2	7-Jul	25-Jul	
5 Prosper Evergol @ 21.5	2294	21.1	45.9	52.3	55	3.0	7.5	1.9	6-Jul	25-Jul	
6 Prosper Evergol @ 21.5 + Lumiderm @ 9.8	2343	21.3	45.9	52.1	53	4.0	8.0	1.4	7-Jul	25-Jul	
7 Prosper Evergol @ 21.5 + Lumiderm @ 9.8 + Brigade 2EC @ 2.6	2428	21.5	45.6	52.3	54	4.5	8.3	1.3	7-Jul	25-Jul	
8 Prosper Evergol @ 21.5 + Buteo Start @ 9.6	2426	21.4	45.7	52.3	55	3.5	7.3	1.2	7-Jul	25-Jul	
9 Prosper Evergol @ 21.5 + Buteo Start @ 9.6 + Brigade @ 2.6	2305	21.4	45.8	52.2	56	4.0	8.0	1.1	7-Jul	25-Jul	
10 Prosper Evergol @ 21.5 + Buteo Start @ 16	2348	20.7	46.7	52.2	56	4.0	7.5	0.9	6-Jul	25-Jul	
11 Prosper Evergol @ 21.5 + Buteo Start @ 16 + Brigade @2.6	2426	21.2	46.1	52.3	56	4.5	7.8	1.0	7-Jul	25-Jul	
12 Prosper Evergol @ 21.5 +Buteo Start@9.6+ Lumiderm @ 9.8	2349	21.5	45.7	52.3	54	4.5	7.3	1.2	7-Jul	25-Jul	
13 Prosper Evergol @ 21.5 + Buteo Start@9.6+Lumiderm @ 9.8+Brigade2EC@2.6	2669	21.3	46.2	52.1	55	4.0	7.3	1.0	7-Jul	25-Jul	
14 Brigade 2EC@2.6 + Brigade 2EC @2.6	2478	21.4	46.0	52.4	53	3.5	6.8	2.1	7-Jul	25-Jul	
15 Helix Vibrance @ 23+Lumiderm@9.8(variety=L350)	2720	22.3	44.9	52.6	62	5.0	8.8	0.7	12-Jul	31-Jul	
16 Helix Vibrance @ 23+Lumiderm@9.8+Brigade2EC@2.6(variety=L350)	2478	21.9	45.3	52.5	62	5.5	6.8	0.8	12-Jul	31-Jul	
	LSD @5% level	391	0.7	0.7	1.0	2	1.6	1.4	0.5	1	1
	CV(%)	11.6	2.2	1.0	0.4	3	27.6	13.4	27.8	6	1

Experimental Design: RCB w/4reps

Seeding rate=12PLS/Ft.²

Planting Date- 5/29/2024

*Treatments 4,7,9,11,13,14,&16 had a post emergent treatment of Brigade on 6/17

trt#14 had a second Brigade application on 6/23

¹Clean Seed Yields corrected to 8.5% moisture.

1st Brigade app-6/17/2024

2nd Brigade app-6/23/2024

² Protein and oil reported on dry matter basis.

canola 1-2lf,67F 51%RH

canola-Early rosette stage

³-Lodging-1=upright;9=flat.

wind NE5-7

72F ,60%RH wind 5 ssw

⁴ ESV(early season vigor) 6/24 9= best;1=least.

⁵Pea-marble size hail 6/13- Priaxor at 6oz. + Section 3 was applied on 6/17/2024

⁶Flea beetle damage 6/13--shot holes(pits/plant)



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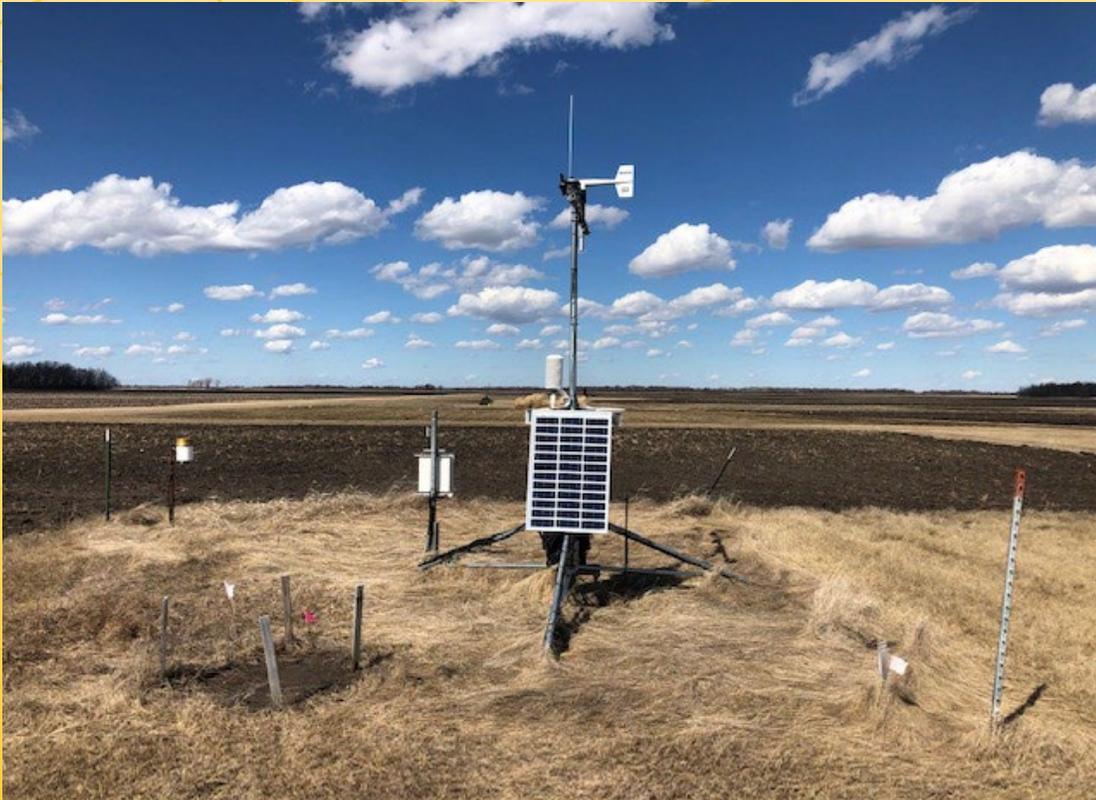
Canola Seed Treatment Trial - Results

- **DK 400 TL canola yields ranged from 1,880 to 2,478 #/ac**
- **LSD (0.05) for yield = 391 with a CV of 11.6**
- **Generally, all seed treatments increased seed yield compared to the fungicide alone check**
- **No treatment differences in canola seed yield for DK 400 TL**
- **LL350 higher yield potential than DK400 TL in this trial**

- **Jan Knodel will present the results from this trial and two in North Dakota in more detail in her presentation**

North Dakota Agricultural Weather Network - NDAWN

NDAWN Site - UMN Mag Farm

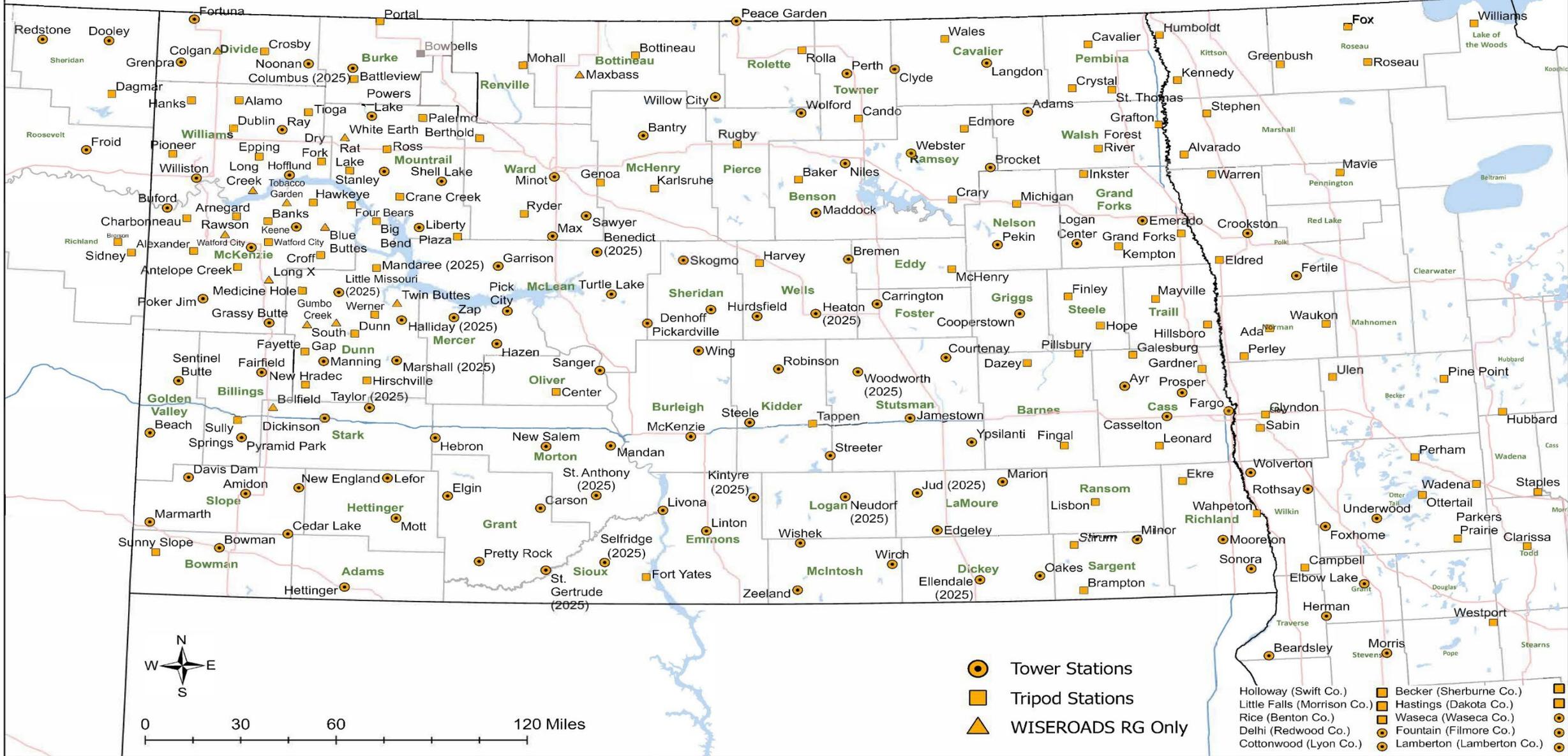


Automated Weather Stations

- Collect 24 hour/day weather data
- Air temperatures
- Soil temps (bare soil and sod)
- Relative Humidity
- Wind speed and direction
- Rainfall
- Solar Radiation
- Dew Point
- Barometric Pressure

NDAWN

NORTH DAKOTA AGRICULTURAL WEATHER NETWORK



Agricultural Applications - NDAWN

- **Growing Degree Days (GDD) for Several Crops**
 - Barley, Canola, Corn, Soybeans, sunflowers and wheat
- **Sclerotinia in canola**
- **Early and late blight in potatoes**
- **Fusarium head blight (scab) and leaf rust in wheat**
- **Cercospora in sugarbeets**
- **Sugarbeet root maggot**

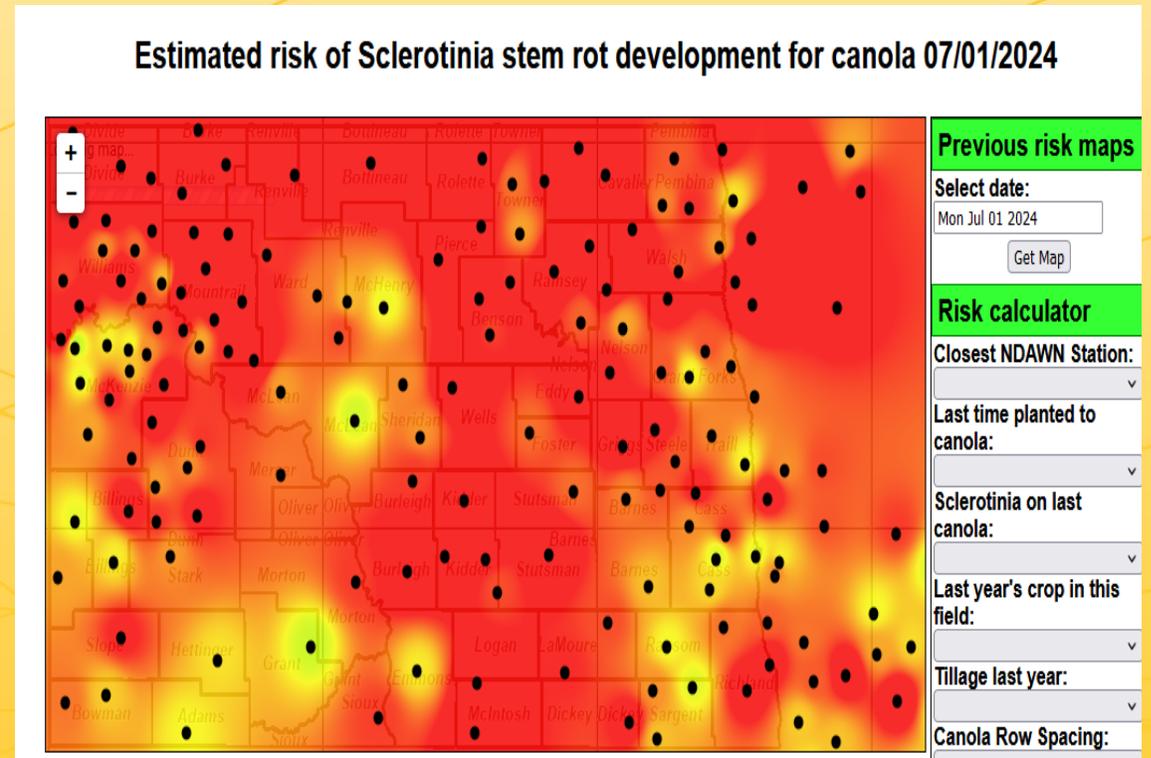
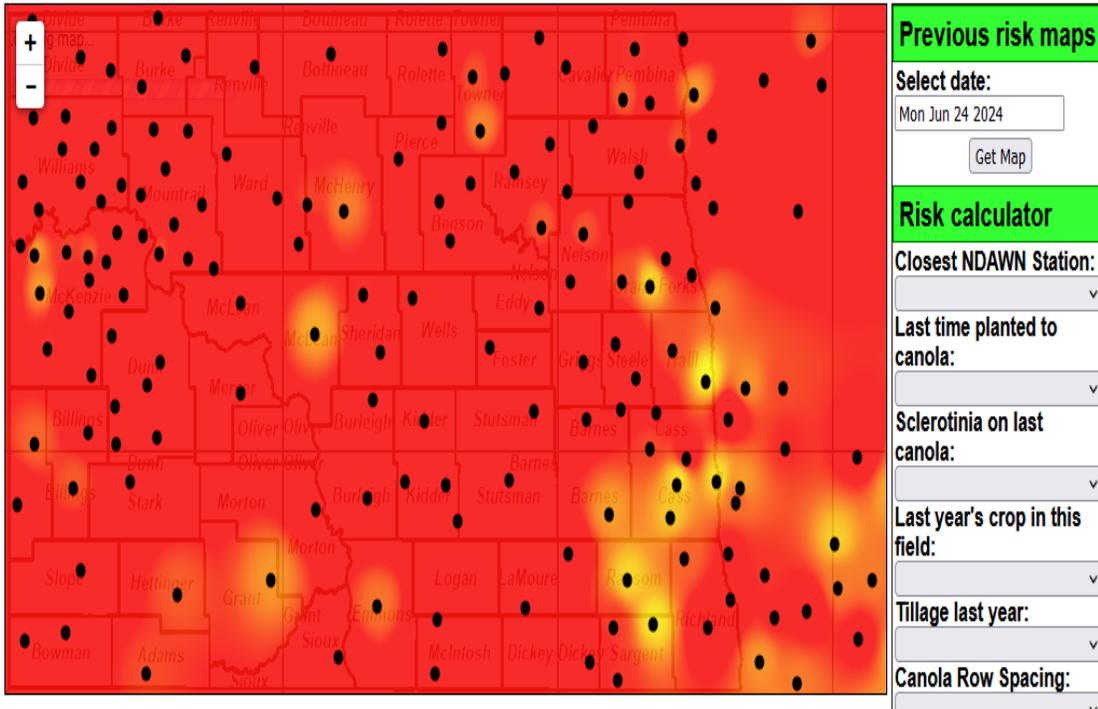
NDAWN - Sclerotinia Predictive Model

June 24, 2024

July 1, 2024

Estimated risk of Sclerotinia stem rot development for canola 06/24/2024

Estimated risk of Sclerotinia stem rot development for canola 07/01/2024



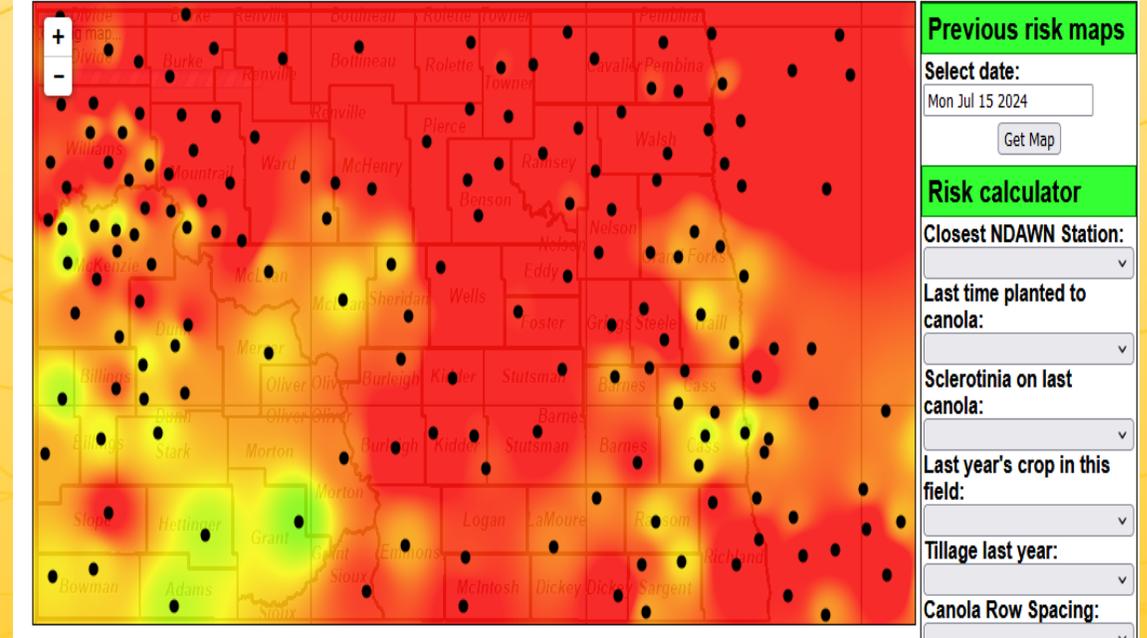
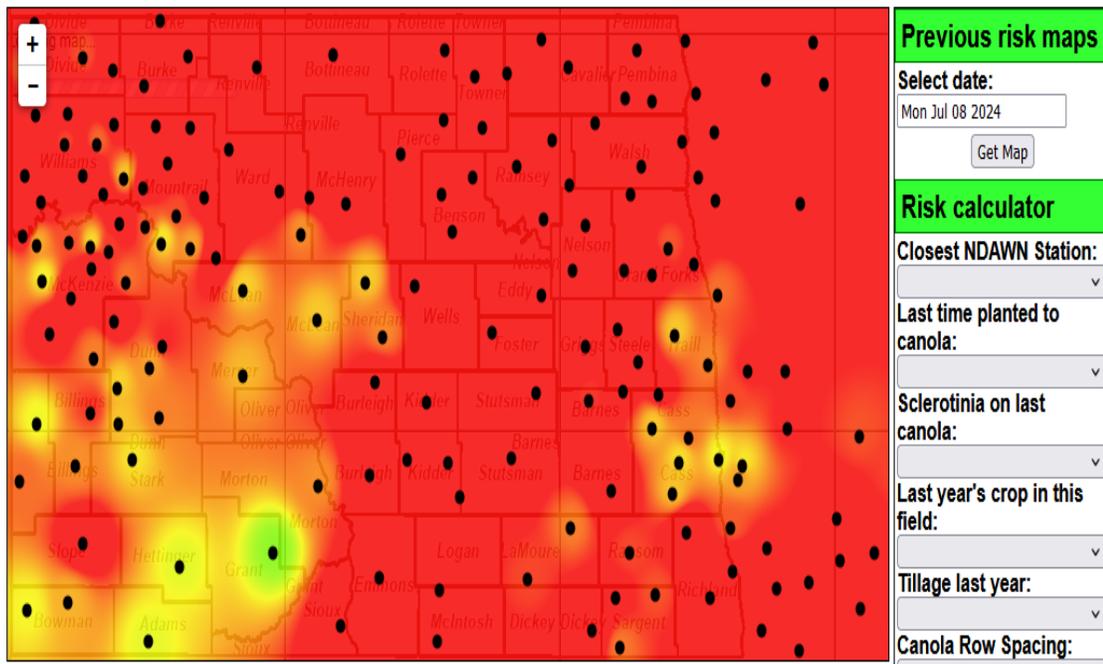
NDAWN - Sclerotinia Predictive Model

July 8, 2024

July 15, 2024

Estimated risk of Sclerotinia stem rot development for canola 07/08/2024

Estimated risk of Sclerotinia stem rot development for canola 07/15/2024



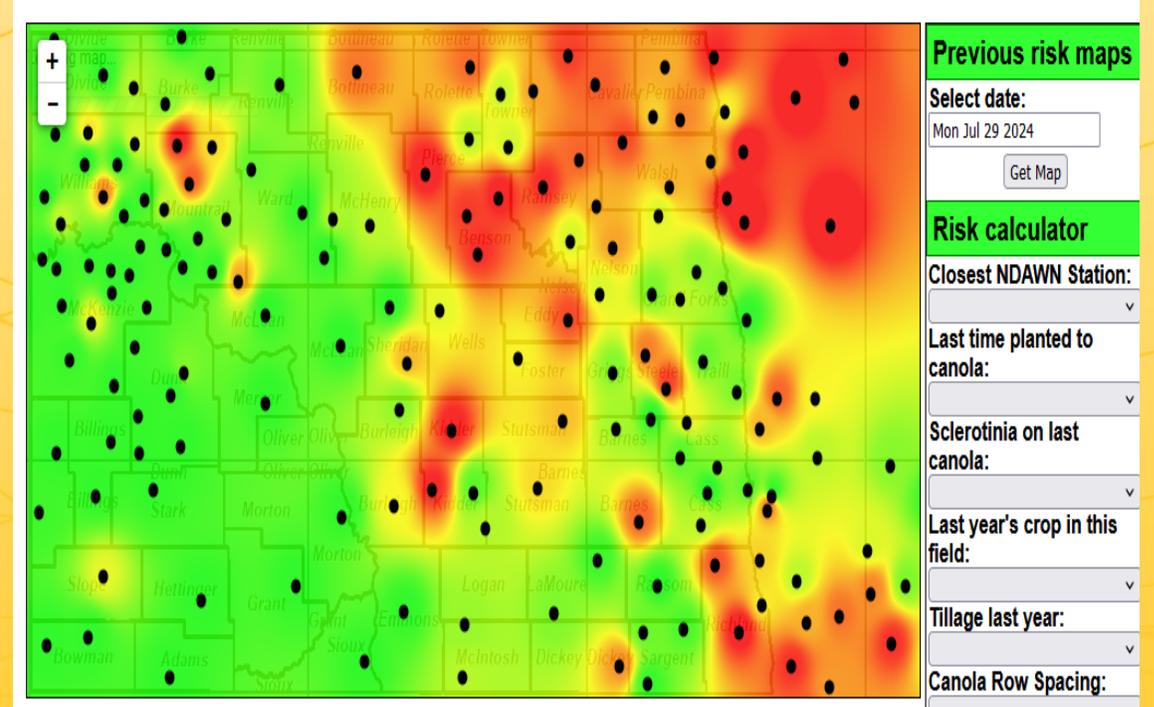
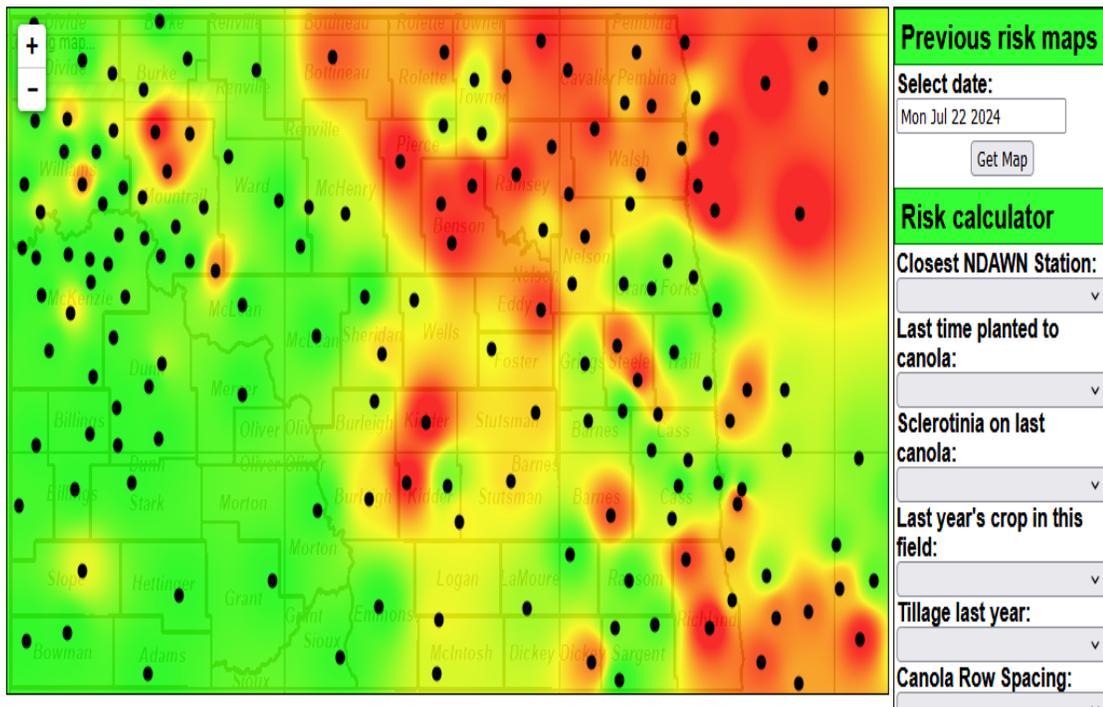
NDAWN - Sclerotinia Predictive Model

July 22, 2024

July 29, 2024

Estimated risk of Sclerotinia stem rot development for canola 07/22/2024

Estimated risk of Sclerotinia stem rot development for canola 07/29/2024



Canola Sclerotinia and Biologics Trial

- **Canola variety: LL345PC**
- **Cooperative trial with Megan McCagney**
- **Trial design RCDB with 4 reps**
- **Seeding rate 12 pls/ft²**
- **Trial seeded 5/29 and harvested 9/20**
- **Pea to marble sized hail on 6/13**
- **Fungicide treatments applied 7/15 and 7/22**
- **Heavy white mold pressure**

2024 Canola Sclerotinia Control Trial

Roseau Planted 5/29

Variety= InVigor L345PC

Harvest 9/14

Helix Vibrance + Lumiderm seed treatment

TRT#	Product	Application Timing	Yield ¹		Disease ³ test wt			Ht(in.)	
			#/acre	DSI ²	Incidence	#/bushel	Protein		Oil
1	Untreated control	NA	1793	5.70	17.25	54.2	24.5	39.8	62
2	Contans	Pre-plant soil+harrow	1916	9.21	24.25	54.1	25.0	39.5	62
3	Double Nickel LC	20-30% bloom	1932	5.00	17.00	54.0	24.6	40.1	61
4	Double Nickel LC	50-60% bloom	1824	5.51	16.75	53.9	24.7	40.3	62
5	Double Nickel LC	20-30% bloom + 7 days later	1955	7.44	19.25	54.2	24.9	39.6	62
6	Serenade OPTI	20-30% bloom	1900	5.46	16.00	53.9	24.1	40.3	62
7	Serenade OPTI	50-60% bloom	1665	6.04	17.25	54.0	24.9	40.2	63
8	Serenade OPTI	20-30% bloom + 7 days later	2072	6.16	18.00	54.0	24.3	40.1	63
9	Contans + Serenade OPTI	Pre-plant soil+20-30%bloom	1730	4.76	14.25	53.9	24.2	40.3	63
10	Endura	20-30% bloom	1924	1.89	4.50	54.0	24.7	40.3	62
11	Proline, Endura	20-30% bloom + 7 days later	2538	0.91	2.25	53.8	24.3	40.4	63
		LSD @ 5% level:	240	3.70	10.14	0.4	0.8	0.9	2
		CV(%)	8.7	48.0	46.0	0.5	2.3	2.4	2.3

Experimental Design:RCB w/ 4reps

¹Clean Seed Yields corrected to 8.5% moisture.

²Disease Severity Index(DSI) -A weighted disease incidence rating where the severity of disease is taken into account.

5 plants rated for severity (0=clean;6=severe sclerotinia) in each plot.

³Disease Incidence (DI)- number of infected plants in 3' of row.



Sclerotinia White Mold in Canola

Basal Infection



Sclerotia Black Resting Structures



Canola Sclerotinia Trial - Results

- **LL 345PC canola yields ranged from 1,793 to 2,538 #/ac**
- **LSD (0.05) for yield = 240 with a CV of 8.7**
- **Generally, all fungicide treatments gave similar yield as the untreated except, a sequential of proline followed 7 days later by Endura which was 745#/ac more than untreated**
- **Canola white mold predictive model was high risk for the entire canola bloom period in 2024**
- **Megan McCaghey will present the results from this trial and from St. Paul in more detail in her presentation**

Canola No-Till Burndown Trial - Methods

- **Canola variety: LL 345PC**
- **Trial design RCDB with 4 reps**
- **Seeding rate 12 pls/ft²**
- **Light harrow prior to seeding due to soil crusting**
- **Trials seeded 5/29 and harvested 9/19**
- **Herbicide treatments applied 5/15**
- **Pea to marble sized hail on 6/13**
- **Liberty applied 6/26**
- **Light weed pressure in untreated**



2024 Canola Weed Burn Down													
Planted 5/29			Harvest 5/19			Canola Variety L345PC							
						#/Acre ¹	Test		Harvest	Begin	End		
						2024	Protein ²	Oil ²	wt./bu.	Lodging ³	Height (in)	Bloom Date	Bloom Date
No treatment						2687	22.06	43.55	50.43	5.0	56.25	8-Jul	29-Jul
Roundup PowerMaxII 24oz./ac						2990	21.96	43.44	50.13	4.0	54.75	8-Jul	29-Jul
Roundup PowerMaxII 24oz./ac + 2oz. Spartan						2934	22.23	43.26	50.38	5.0	55.25	8-Jul	29-Jul
Roundup PowerMaxII 24oz./ac +.33oz. Aim						3160	22.02	43.32	50.15	6.0	56.25	8-Jul	29-Jul
Roundup PowerMaxII 24oz./ac + .33oz. Aim+ 120z Moxy(Buctril)						3077	22.34	43.17	50.15	4.0	55.75	8-Jul	29-Jul
LSD @5% level						NS	NS	NS	NS	1.6	NS	0	0
CV(%)						11	1.4	0.8	0.6	21.5	3.8	2.8	2.3
RCBD 4 Reps													
¹ Clean Seed Yields corrected to 8.5% moisture.													
² Protein and oil reported on dry matter basis.													
³ Lodging-1=upright;9=flat.													

No-till Canola Burndown Trial - Results

- **Canola yields ranged from 2,687 to 3,160 #/ac**
- **LSD (0.05) for yield = NS with a CV of 11**
- **Limited weeds at time of burndown application**
- **Good weed control in entire trial**
- **Entire plot area was lightly harrowed before seeding due to soil crusting**
- **No differences in canola yield from any treatment**

Canola Desiccation Trial - Methods

- **Canola variety: LL 345PC**
- **Trial design RCDB with 4 reps**
- **Seeding rate 12 pls/ft²**
- **Trials seeded 5/29 and harvested 9/14**
- **Pea to marble sized hail on 6/13**
- **Swathed and Roundup applied 9/3, Reglone & Sharpen 9/9**
- **Light weed pressure in untreated**



2024 Desiccation Applications as a Harvest Aid Evaluation

Variety= L345PC

Planting date-5/24

Harvest date 9/14

Treatment	#/Acre ¹ 2024	Protein ²	Oil ²	Test wt./bu.	Lodging ³	Harvest Height (in)	Begin Bloom Date	End Bloom Date	
1 No treatment-straight combine	2395	22.2	44.5	52.0	4.0	57	11-Jul	29-Jul	
2 Reglone 1.5pt.+0.25%NIS	2258	22.3	44.4	52.3	4.5	57	10-Jul	29-Jul	
3 Sharpen 2 oz.+1%MSO+2%AMS	2242	22.5	44.2	52.3	4.0	56	10-Jul	29-Jul	
4 Roundup PowerMaxIII 1.5pt+1%MSO+2%AMS	2355	22.2	44.5	52.4	3.5	57	11-Jul	29-Jul	
5 Roundup 1.5pt+Sharpen 2 oz.+1%MSO+2%AMS	2593	22.6	44.1	52.4	3.5	55	11-Jul	29-Jul	
6 Swath	2752	22.4	44.4	52.0	4.0	55	10-Jul	29-Jul	
	LSD @5% level	280	NS	NS	0.4	1.6	2	NS	NS
	CV(%)	7.6	0.5	1.2	0.5	26.8	3	0	1.4

Experimental Design:RCB w/ 4reps

¹Clean Seed Yields corrected to 8.5% moisture.

² Protein and oil reported on dry matter basis.

³ Lodging-1=upright;9=flat.



Canola Desiccation Trial - 2024

Canola Stubble - Roundup



Canola Straw after Harvest - Roundup



Canola Desiccation Trial - 2024

Canola Regrowth and Green Stalks



Canola Stalks After Harvest



Canola Desiccation Trial - 2024

Canola Regrowth - Reglone



Limited Canola Regrowth -Roundup



Canola Desiccation Trial - Results

- **Canola yields ranged from 2,242 to 2,752 #/ac**
- **LSD (0.05) for yield = 280 with a CV of 7.6**
- **Good weed control in entire trial**
- **Canola yields from swathed and Roundup sharpen were higher than the straight harvest, Reglone, Sharpen and Roundup alone.**
- **Harvest efficiency was improved from Roundup + Sharpen compared to the other treatments**



Late Season Flea Beetle Feeding

Canola Council of Canada

Flea Beetle Pod Feeding



High Flea Beetle Pressure



Late Season Flea Beetle Trial - Methods

- **Canola variety: LL 345PC**
- **Trial design RCDB with 4 reps**
- **Seeding rate 12 pls/ft²**
- **Trials seeded 5/29 and harvested 9/12**
- **Pea to marble sized hail on 6/13**
- **Light second - generation flea beetle population in 2024**
- **No treatment differences observed in 2024**



2024 Late Season Flea Beetle Pod Feeding Trial

Variety=L340PC

Planted 5/29 Harvested 9/12

Treatment	Yield #/ac	Protein ²	Oil ²	Test wt/#/bu.	lod ³	Ht.(in)	Flea beetle 8/24	10%bloom	end bloom
1 No treatment-straight combine	2581	23.9	41.1	51.4	3.5	63	1.8	8-Jul	27-Jul
2 Brigade-2.6oz. 8/28/2024	2401	24.3	41.0	51.5	5.0	63	2.0	8-Jul	27-Jul
3 Brigade-2.6oz. 9/5/2024	2843	23.7	41.4	51.1	4.0	63	2.0	8-Jul	27-Jul
4 Brigade 2.6oz. 8/24/2024	2603	23.7	41.8	51.5	3.0	60	2.5	8-Jul	27-Jul
LSD @5% level	NS	NS	NS	NS	1.3	1	NS	0	0
CV(%)	11.5	2.3	1.4	0.7	21.5	1.1	60	0	0

Experimental Design: RCB w/4reps. A buffer plot was seeded between treatments and mowed down on 8/24/2024.

¹Clean Seed Yields corrected to 8.5% moisture.

² Protein and oil reported on dry matter basis.

³ Lodging-1=upright;9=flat.



Late Season Flea Beetle Trial - Results

- **Canola yields ranged from 2,401 to 2,843 #/ac**
- **LSD (0.05) for yield = NS with a CV of 11.5**
- **Second generation flea beetle populations were high in 2023, but were light in 2024**
- **No treatment differences for canola yield**

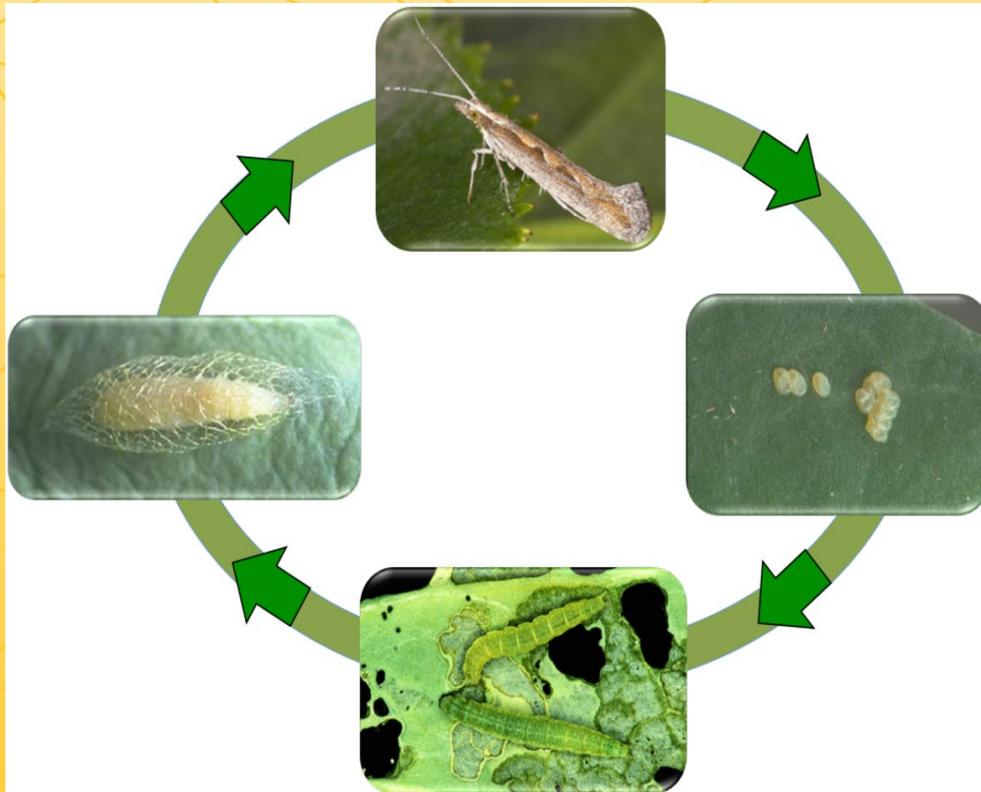
Insect Surveys in 2024

- **Bertha Armyworm**
- **Diamondback Moth**
- **Canola Flower Midge**
- **Swede Midge**

- **Selected field observations of late season flea beetle**

Diamondback Moth and Bertha Armyworm - Lifecycles

Diamondback Moth



Bertha Armyworm

A screenshot of a webpage from the Government of Canada, titled "Predicted Bertha Armyworm Development 2021". The page features four panels (A, B, C, D) showing different stages of the insect's life cycle: A) A cluster of white eggs on a green leaf; B) A young, green caterpillar on a leaf; C) A reddish-brown pupa; D) An adult, dark-colored moth. To the right of the panels is a text box with the heading "Predicted Bertha Armyworm Development 2021" and a date of "May 12, 2021". The text provides information about the insect's development and its impact on crops, mentioning that it is a pest of corn, soybeans, and other crops in Canada. It also notes that the insect is currently in the larval stage in the field and is expected to reach the pupal stage by late May/early June.

Diamondback Moth Survey - 2024

Diamondback Moth Trap



Closeup Diamondback Moth Trap



Diamondback Moth - Pictures Canola Council of Canada

Diamondback Moth - Adult



Diamondback Moth - Pod Feeding



Diamondback Moth Pod Feeding

Missing/Damaged Canola Seeds



Pod Feeding - Aug 1, 2023



Bertha Armyworm Survey - 2024

Bertha Armyworm Trap



Moths Collected in Trap



Bertha Armyworm Larvae

Larvae



Bertha Armyworm - Aug 3



Management Considerations

Bertha Armyworm

- One generation/yr
- Overwinters as a pupae
- Most damage late July into August
- If cumulative moth numbers in pheromone trap exceed 1,000 trigger for extensive larvae scouting
- Economic threshold in canola 15 to 20 larvae/square meter

Diamondback Moth

- Adult moths blown into the area on southern winds in the spring
- Multiple generations/yr
- Egg to adult average 32 days
- If moth capture >100/week is a trigger for extensive larvae scouting
- Economic threshold 10-15 larvae/sq/foot early flower and 20-30 during pod development



Bertha Armyworm and Diamondback Moth Traps at Two Locations in 2024

Rice Farms

<u>Location</u>		Bertha		Diamondback	
		Armyworm	Moth	Growth stage	
Rice Farm	25-Jun	23	4	first bloom	
	2-Jul	17	4	mid-flower-lower pods elongating	
	9-Jul	7	9	lower pods starting to fill	
	16-Jul	1	117	end flowering, seed enlarging in lower pods	
	23-Jul	4	11	seed in lower pods green	
	30-Jul	2	27	seed in lower pods green-yellow	
	6-Aug	1	39	seed in lower pods yellow or brown	
Total insects trapped 6/18-8/6/2024		55	211		

Magnusson Farms

<u>Location</u>		Bertha		Diamondback	
		Armyworm	Moth	Growth stage	
Magnusson Farms	25-Jun	12	5	first bloom	
	2-Jul	10	7	mid-flower-lower pods elongating	
	9-Jul	2	19	lower pods starting to fill	
	16-Jul	1	33	end flowering, seed enlarging in lower pods	
	23-Jul	0	44	seed in lower pods green	
	30-Jul	0	22	seed in lower pods green-yellow	
	6-Aug	0	41	seed in lower pods yellow or brown	
Total insects trapped 6/18-8/6/2024		25	171		



Summary Diamondback Moth and Bertha Armyworm Trapping in 2024

- **Pheromone traps were effective in trapping moths**
- **Bertha armyworms seemed to be more active in late June into early July while, diamondback moths more active in mid-July into early August**
- **Both bertha armyworm and diamondback moths larvae observed in canola fields in northern MN**
- **Both well below economic threshold levels in 2024**

Canola Flower and Swede Midge - 2024

Scentry Wing Trap



Canola Flower and Swede Midge

- June 18 - Traps placed in two fields in Roseau County
- Checked weekly until 8/6
- Pheromone replaced after 4 weeks
- Trap bottoms sent to NSDU for identification
- Swede midge - Negative
- Canola Flower midge - Positive at one location <5/season

Questions



Contact Information

- **Dave Grafstrom**
- **Email - Grafts010@umn.edu**
- **Cell: 320-293-8722**

- **Minnesota canola research reports are posted on the MN Canola web site: mncanola.org**