Northwestern Agricultural Research Center Field Day
Thursday, July 14, 2022

11:00 am Registration & Introductions

11:30 Ken McAlpin – NWARC Farmer Advisory Chair
11:35 Dr. Darrin Boss – MSU Research Center Department Head
11:45 Dr. Jessica A. Torrion – MSU NWARC Superintendent

12:00 pm Lunch

12:30 Dr. Mary Burrows – Director, Montana Agricultural Experiment Station, MSU
12:40 Andy Lybeck – CHS General Update

1:00 pm Field Tours — Pages

Northwestern Ag Research Center Faculty and Staff

Left to right: (Top) Jordan Penney, Dr. Clint Beiermann, Dave Davis, Dan Porter, Ben Cluka, Ray Volin
(Bottom) Natalie Bruno, Ashley Goodman, Natalie Gifford, Reese Whitehead, Dr. Jessica Torrion, Charlene Kazmier, Jessica Pavelka

Advisory Committee

Flathead County: Toby Hook, Andy Lybeck, Dr. Pat McGlynn
Lake County: Bridgett Lake-Cheff, Ken McAlpin, Jack Stivers
Sanders County: Chuck Stephens, Terry Stephens

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2022 Statewide Spring Canola

Clint Beiermann & Jessica Pavelka – MSU NWARC

Introduction:

The Montana Statewide Canola Hybrid/Variety Testing Program is an ongoing collaboration between MSU and the canola seed industry. Field sites are present at five participating agricultural research centers across the state of Montana, for the 2022 season. There are 29 entries from eight contributing companies distributed throughout the research centers. All entries are offered or likely to be offered soon for commercial sale in Montana. Trial management is consistent with typical cropping practices in specific geographic regions. Data is available for yield and oil content for previous years trials.

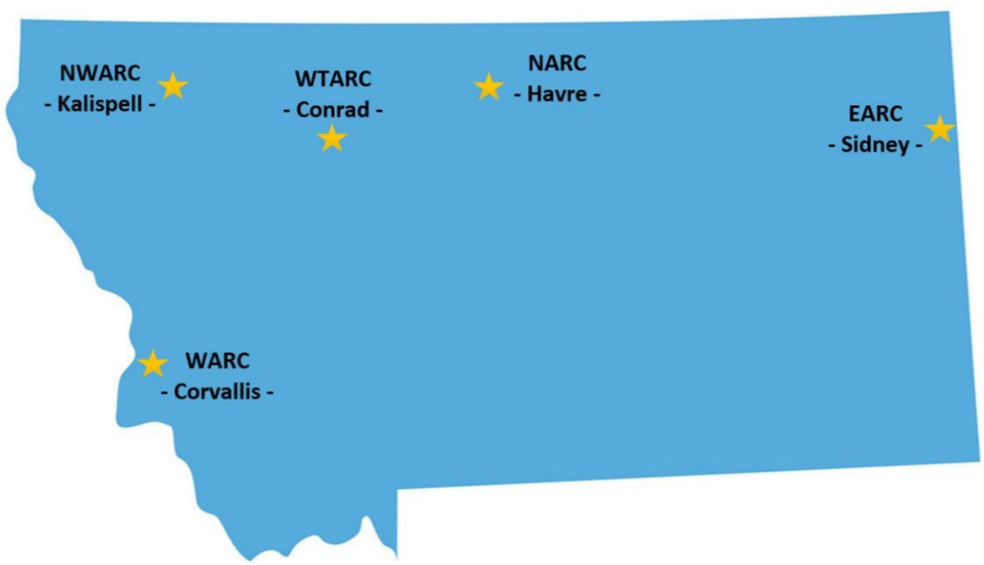

Figure 1. 2022 Statewide Canola Entry Locations

Table 1. Entry List

Entry	Company	Variety	Rep 1	Herbicide Resistance	Disease Resistance
1	WinField	CP9978TF	101	TruFlexx	Blackleg
2	WinField	CP7130LL	102	Liberty	Blackleg, Clubroot
3	WinField	CP7144LL	103	Liberty	Blackleg, Clubroot
4	WinField	CP930RR	104	Roundup	Blackleg
5	WinField	CP9919RR	105	Roundup	Blackleg
6	BrettYoung	BY 6211TF	106	TF	BL -R, CR- Next Gen
7	BrettYoung	BY 6217TF	107	TF	BL - R
8	BrettYoung	BY 5125CL	108	TF	BL-R, CR- 1st gen
9	Photosyntech	NCC101S	109	N/A	Blackleg MR
10	Photosyntech	NCC1825/8-S	110	N/A	Blackleg R
11	BASF	InVigor L233P	111	LL	Blackleg
12	BASF	InVigor L340PC	112	LL	Blackleg, Clubroot
13	BASF	InVigor LR344PC	113	LL/RR TruFlex	Blackleg, Clubroot
14	BASF	InVigor L343PC	114	LL	Blackleg, Clubroot
15	BASF	InVigor L345PC	115	LL	Blackleg, Clubroot
16	BASF	InVigor L356PC	116	LL	Blackleg, Clubroot
17	Meridian Seeds	CS4000 LL	117	LibertyLink	Blackleg, Clubroot
18	Meridian Seeds	CS2600 CR-T	118	TruFlex	Blackleg, Clubroot
19	Meridian Seeds	CS3000 TF	119	TruFlex	Blackleg, Clubroot
20	Nutrien	DG280CLC	120	Clearfield	Multigenic Clubroot, R BL
21	Nutrien	DG660LCM	121	Liberty Link	Clubroot, R BL
22	Nutrien	DG760TM	122	TruFlex	R BL
23	Nutrien	DG781TCM	123	TruFlex	Clubroot, R BL
24	Nuseed	NC155 TF	124	TruFlex	Blackleg: MR
25	Nuseed	NC471 TF	125	TruFlex	Blackleg: R
26	Nuseed	NC527CR TF	126	TruFlex	Blackled: MR, Clubroot R

Hard Reds and Soft Whites Winter Wheat Irrigation

Jessica A. Torrion

Winter wheat, typically, has the advantage of utilizing early spring moisture when it is actively growing. Also, it could have a better root establishment early in the season. As the season moves along, we need to determine the best practice in providing supplemental irrigation to achieve its yield potential. This way, we could reduce water and energy utilization on the farm. Our goal is not to overwater. Our experience in spring wheat is that there are irrigation strategies that do not provide extra yield or quality boosts quality. Available moisture late in the season in the form of irrigation or rainfall is detrimental, like lowering falling number values, which results in price discounts at the elevator.

Water Regimes	Inches rain (4/20-7/14)	Inches irrigation to date
Rainfed	7.58	N/A
deficit irrigation (66ET*)	7.58	2.5
full irrigation (100ET)	7.58	3.8
Modified 100ET (final irrigation applied at full flower)	7.58	1.8
modified 100ET (final irrigation med-milk stage)	7.58	2.8

*ET (evapotranspiration)

Hard Reds	Soft Whites
FourOSix	Mary
Flathead	Sockeye
Northern	Bobtail
Bobcat	Puma

Management information:

Seeding date:	9/23/2021	**Field Location:**	R5
Julian date:	266	**Harvest date:**	
Seeding rate:	30 live seeds/ft2	**Julian date:**	
Previous crop:	Peas	**Soil type:**	fine sandy loam
Herbicide:	Clean SweepM & Axial Bold	**Tillage:**	Conventional
Insecticide:	n/a	**Soil residual nutrient (NO3-, P, K lb/A):**	106-18-250
Fungicide:	Headline	**Nutrient fertilizer applied (N, P_2O_5, K_2O lb/A):**	80-0-0 spring broadcast

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Spring Wheat and Seeding Density

Jason Cook, Jessica Torrion, Justin Vetch, and Clint Beiermann

The occurrence of drought makes us revisit farming decisions such as reducing farming input, primarily nitrogen but also the seeding rate. These two inputs are expensive and are hard to recover under drought. We test five elite spring wheat cultivars, three nitrogen levels, and three seeding rates over two environments (Creston and Conrad, MT). NWARC multi-year research found 24 seeds/ft2 as optimal for spring wheat. We wanted to examine how 75% and 50% seeding density reduction from optimal impacts yield and quality of these elite varieties at various N levels under rainfed conditions of Montana.

Nitrogen levels: 1) 75 lbs N/A (No added N), 2) N150 lbs total N/A (residual + applied), and 3) 200 lbs total N/A (residual + applied)

Planting density:

Varieties	1000 Seeds (g)	lbs/acre		
		24 seeds/ft2	18 seeds/ft2	12 seeds/ft2
Dagmar	39.4	92	69	46
MT Sidney	17.8	41	31	21
Egan	31.8	74	56	37
Vida	32.2	76	57	38
SY Ingmar	30.5	70	53	35

Management information:

Seeding date:	4/20/2022	**Field Location:**	R6
Julian date:	110	**Harvest date:**	
Seeding rate:	Various	**Julian date:**	
Previous crop:	Alfalfa	**Soil type:**	fine sandy loam
Herbicide:	Axial Bold, CleansweepM	**Tillage:**	conventional
		Soil residual nutrient (NO3-, P, K lb/A):	79-4-84
Insecticide:	n/a		
Fungicide:	Headline	**Nutrient fertilizer applied (N, P_2O_5, K_2O lb/A):**	TRT-45-100

2022 Spring Wheat Herbicide Program

Clint Beiermann – MSU NWARC
Lovreet Shergill – MSU SARC

Introduction:

This study is focused on herbicide combinations to control kochia and wild oat in spring wheat. Treatments contain herbicides with multiple MOA's as well as combinations for PRE followed by POST application.

Table 1. Management information			
Seeding date:	4/27/22	Field:	R6
Julian date:	117	Soil type:	Creston Silt Loam
Seeding rate:	24 plants/ft^2	Tillage:	Conventional
Previous crop:	Alfalfa	Soil residual nutrient (NO_3^-, P, K lb/A):	79-6-122-26S
		Nutrient fertilizer applied (N, P_2O_5, K_20 lb/A):	80-50-60-10S

Table 2. Spring Wheat Pre & Post Combinations - Treatments & Weed Control

					29-Jun-22	
Trt No.	Treatment Name	Rate	Rate Unit	Appl Timing	Wild Oat Control %	Lambsquarters Control %
1	Non-trt				0.0 c*	0.0 d
2	Axial Bold	15	fl oz/a	POST	99.0 a	9.4 c
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
3	Prowl H2O	2	pt/a	Early POST	16.3 b	99.0 a
4	Zidua SC	2.5	fl oz/a	PRE	18.8 b	89.2 a
5	Anthem Flex	3	fl oz/a	PRE	22.5 b	62.9 a
6	Prowl H2O	2	pt/a	Early POST	99.0 a	99.0 a
	Axial Bold	15	fl oz/a	POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
7	Zidua SC	2.5	fl oz/a	PRE	99.0 a	89.2 a
	Axial Bold	15	fl oz/a	POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
8	Anthem Flex	3	fl oz/a	PRE	99.0 a	87.9 a
	Axial Bold	15	fl oz/a	POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
9	Prowl H2O	2	pt/a	Early POST	99.0 a	99.0 a
	Axial Bold	15	fl oz/a	Early POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
10	Zidua SC	2.5	fl oz/a	Early POST	96.8 a	31.2 b
	Axial Bold	15	fl oz/a	Early POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			
11	Anthem Flex	3	fl oz/a	Early POST	99.0 a	99.0 a
	Axial Bold	15	fl oz/a	Early POST		
	AMS	17	lb/100 gal			
	NIS	0.25	% v/v			

*Weed control with different letters are significantly different α=0.05

Table 3. Spring Wheat Wild Oat & Kochia Herbicide – Treatments & Weed Control

Trt No.	Treatment Name	Rate	Rate Unit	Appl Timing	29-Jun-22 Wild Oat Control %	29-Jun-22 Lambsquarters Control %	29-Jun-22 Spring Wheat Injury %
1	Non-treated				0.0 c*	0.0 b	0.0 c
2	Roundup*	32	fl oz/a	PRE PLANT	99.0 a	78.3 a	0.0 c
	Sharpen	4	fl oz/a	PRE PLANT			
	Axial Star	16.4	fl oz/a	POST			
3	Roundup	32	fl oz/a	PRE	43.8 b	62.3	0.6 c
	Zidua	1.5	oz wt/a	PRE			
4	Roundup	32	fl oz/a	PRE	92.0 a	77.3 a	0.0 c
	Zidua	1.5	oz wt/a	PRE			
	Axial Star	1.75	fl oz/a	POST			
5	Anthem Flex	2.75	fl oz/a	PRE	99.0 a	89.5 a	0.4 c
	Axial Star	16.4	fl oz/a	POST			
6	Prowl	1.5	pt/a	Early POST	99.0 a	99.0 a	0.0 c
	Axial Star	16.4	fl oz/a	POST			
7	Axial Star	16.4	fl oz/a	POST	96.8 a	67.5 a	0.0 c
8	Axial Star	16.4	fl oz/a	POST	99.0 a	99.0 a	0.0 c
	Affinity TankMix	1	oz wt/a	POST			
9	Axial XL	16.4	fl oz/a	POST	99.0 a	99.0 a	2.8 b
	Talinor	13.7	fl oz/a	POST			
	CoAct+	2.75	fl oz/a				
10	Huskie	11	fl oz/a	POST	99.0 a	99.0 a	0.0 c
	Axial XL	16.4	fl oz/a	POST			
11	Opensky	1	pt/a	POST	99.0 a	99.0 a	11.1 a
12	Opensky	1	pt/a	POST	99.0 a	99.0 a	12.3 a
	2,4-Dester LV6	7	fl oz/a	POST			
13	Varro	6.85	fl oz/a	POST	99.0 a	94.3 a	0.6 c
	Fluroxypyr	0.3	pt/a	POST			
14	WideMatch	1	pt/a	POST	39.8 b	99.0 a	0.0 c
	Affinity TankMix	1	oz wt/a	POST			
*Included in each POST application							
	AMS	17	lb/100 gal				
	NIS	0.25	% v/v				
*Weed control and injury with different letters are significantly different α=0.05							

Downy brome and fusarium competitive interactions with winter wheat

Clint Beiermann, Lovreet Shergill, Alan Dyer, Tim Seipel,
Jed Eberly, Kate Fuller, Fabian Menalled

Introduction:

Fusarium crown rot is a disease encountered in winter wheat production across Montana. Downy brome is competitive winter annual weed species in winter wheat production and may serve as an alternate host to fusarium. The objective of this study is to better understand the competitive interactions between winter wheat, downy brome, and fusarium. Treatment factors of seeding density, fungicide treatment, and nitrogen level are designed to show how these agronomic management factors affect crop weed competition, in the presence of fusarium.

Treatment Factors	
Seeding Density	30 plants/ft^2
	20 plants/ft^2
Fungicide	No fungicide
	Vibrance Extreme
Nitrogen Fertility	70 lbs N/acre
	220 lbs N/acre
Downy brome	None
	Downy brome Seeded

2022 Winter Wheat Intrastate

Dr. Suchismita Mondal - Plant Science and Plant Pathology

Entry		Cultivar/Line + = new for 2022	Pedigree	Plot Numbers Rep 1	 Rep 2	 Rep 3
13		SY Wolverine	Syngenta 2019	101	229	338
44	+	MTCL2010	MT0871/(06X445B1-2, SY Clearstone sib)	102	206	312
14		AP18 AX	Syngenta 2020	103	215	318
21		LCS Julep	Limagrain Cereal Seeds, 2020	104	223	302
32	+	MS Maverick	Meridian, 2021	105	208	324
10		Flathead	Montana, 2019	106	249	330
33	+	MS Iceman	Meridian, 2020	107	237	347
45	+	MT2019	MT10114/MT10128//MTW1251	108	205	334
12		StandClear CLP	Nutrien, 2020	109	246	344
8		SY Clearstone 2CL	Montana/Syngenta, 2012	110	213	310
22		Fortify SF	Plainsgold/Colorado Wheat Res Fdn, 2019	111	236	304
43	+	MT19159	Northern//02X22cE38/MT10121	112	217	341
4		Judee	Montana, 2011	113	224	319
24		CP7909	Winfield United (Croplan), 2018	114	232	328
37		MTS18149	Loma*2/AAC Gateway	115	226	343
39		MTS1908	(Judee sib, MTS0819)//08X350-A6/Warhorse	116	245	313
9		FourOsix	Montana, 2018	117	209	339
31		Ramsay	Nutrien, 2021	118	218	306
15		AP Solid	Syngenta 2021	119	240	333
46	+	MTS2068	(Judee sib, MTS0819)//08X350-A6/Warhorse	120	203	327
6		Loma	Montana, 2016	121	234	316
7		Northern	Montana, 2015	122	222	311
48	+	MTFH20166	DecadeFhb1-DH11/Overland FHB-1	123	244	342
25		CP7017AX	Winfield United (Croplan), 2020	124	212	303
47	+	MTCS20156	Bobcat//(Bobcat sib, MTS1589)/StandClear CLP	125	220	332
18	+	WB4619	WestBred, 2021	126	242	326
28		AAC Wildfire	Alberta/SECAN, 2015	127	201	315
35	+	20Nord148	CM82036/Jerry//WB Matlock	128	235	349
23		Whistler	Plainsgold/Colorado Wheat Res Fdn, 2018	129	228	322
2		Yellowstone	Montana 2005	130	247	321
36		MT1745	Decade*2/NI06732	131	214	345
20		LCS Steel AX	Limagrain Cereal Seeds, 2021	132	221	314
26		CP7050AX	Winfield United (Croplan), 2020	133	239	340
40		MTFH19132	MT1078//Colter/Emerson	134	204	301
29		Milestone	Nutrien, 2020	135	233	335
19		LCS Helix AX	Limagrain Cereal Seeds, 2020	136	227	329
16	+	AP Bigfoot	Syngenta 2021	137	248	323
27		Battle AX	Colorado Wheat Fdn/Montech, 2019	138	210	317
30		Balance	Nutrien, 2020	139	216	346
5		Brawl CL Plus	Plainsgold/Colorado Wheat Res Fdn, 2011	140	238	308
34	+	MS 1022	Meridian experimental line	141	207	336
49	+	MTF20189	MT10121*2/MV11-04	142	230	305
42		MT19175	SD08198/Northern	143	225	337
17	+	WB4510 CLP	WestBred, 2021	144	243	307
11		Bobcat	Montana, 2019	145	211	331
3		Keldin	WestBred, 2011	146	219	325
41		MTCL19151	MT0871/(06X445B1-2, SY Clearstone sib)	147	241	320
38		MTS1903	(Judee sib, MTS0819)//08X350-A6/Warhorse	148	202	348
1		Warhorse	Montana, 2013	149	231	309

Winter Wheat Classes, Nitrogen, and Seeding Density

Drs. Clint Beiermann &
Jessica Torrion – MSU NWARC

Introduction:

Hard red and soft white winter wheat have altering yield and protein potential, potentially varying return for nitrogen inputs. This study was designed to identify optimum input levels of seed and nitrogen fertilizer in high yielding hard red and soft white winter wheat production.

Treatment Factors		
Nitrogen Level	120 lbs N/acre	
	180 lbs N/acre	
	250 lbs N/acre	
Winter Wheat Market Class	Hard Red	LCS Jet
		WB Keldin
	Soft White	WB 1783
		WB 1720
Winter Wheat Population	16 plants/ft^2	
	24 plants/ft^2	
	32 plants/ft^2	
	40 plants/ft^2	

Montana Fertilizer Tax Advisory Committee

Table 1. WW Nitrogen and Seeding Density Treatments

Treatment	Nitrogen lbs/acre	Variety	Population (plants/ft2)
1	125	Keldin	16
2	125	Keldin	24
3	125	Keldin	32
4	125	Keldin	40
5	125	Jet	16
6	125	Jet	24
7	125	Jet	32
8	125	Jet	40
9	125	WB 1783	16
10	125	WB 1783	24
11	125	WB 1783	32
12	125	WB 1783	40
13	125	WB 1720	16
14	125	WB 1720	24
15	125	WB 1720	32
16	125	WB 1720	40
17	180	Keldin	16
18	180	Keldin	24
19	180	Keldin	32
20	180	Keldin	40
21	180	Jet	16
22	180	Jet	24
23	180	Jet	32
24	180	Jet	40
25	180	WB 1783	16
26	180	WB 1783	24
27	180	WB 1783	32
28	180	WB 1783	40
29	180	WB 1720	16
30	180	WB 1720	24
31	180	WB 1720	32
32	180	WB 1720	40
33	250	Keldin	16
34	250	Keldin	24
35	250	Keldin	32
36	250	Keldin	40
37	250	Jet	16
38	250	Jet	24
39	250	Jet	32
40	250	Jet	40
41	250	WB 1783	16
42	250	WB 1783	24
43	250	WB 1783	32
44	250	WB 1783	40
45	250	WB 1720	16
46	250	WB 1720	24
47	250	WB 1720	32
48	250	WB 1720	40

Perennial Grass Forages and Nitrogen

Hayes Goosey, Jessica Torrion, and Peggy Lamb

We test four perennial types of grass that were top-yielders based on the previous cool-season varietal screening in Creston, MT (see table 1). Our goal is to determine an alternative to mining high soil residual nitrogen coming off of a drought year, particularly with the current high N price. Forage grasses have relatively lower nitrogen requirements and their persistence saves seed technology costs. We aim to determine what is the critical nitrogen requirement for these species by utilizing the residual N and also applying fertilizer N only during the first year of establishment over three locations: Creston, Bozeman, and Have, MT.

Table 1. Grass entries (Barenbrug™)

Dryland mix	Barricade with yellow jacket coating: Barricade is a drought-tolerant variety of meadow and smooth brome, tall fescue, and intermediate wheatgrass
Meadow brome	Arsenal: drought tolerant, early spring growth, winter hardy
Smooth brome	Artillery: exceptional drought resistant, high stress-tolerant, perform well in colder US temperatures, rhizomatous
Tall fescue	STF-43. Adaptable to either wet or dry conditions. A blend of late-maturing, soft-leaved tall fescues.

Nitrogen levels: 1) Control (No added N), 2) 50 lbs N/A at planting, 3) 25 lbs N/A at tiller + 25 lbs N/A after first cut, 4) 50 lbs N/A at tiller + 50 lbs N/A after first cut.

Management:

Seeding date:	April 21st, 2022	**Field Location:**	R3
Julian date:	111	**Harvest dates:**	
Seeding rate:	variety dependent	**Julian dates:**	
Previous crop:	Canola	**Soil type:**	fine sandy loam
Herbicide:	Detonate, Cleaver (6/7/2022)	**Tillage:**	Conventional
Insecticide:	n/a	**Soil residual nutrient: (NO3-, P, K lb/A):**	49-14-260
Fungicide:	n/a	**Nutrient fertilizer applied: (N, P2O5, K20 lb/A):**	TRT-31-50

Forage Barley Program

Dr. Jamie Sherman – MSU Plant Science and Plant Pathology
Bridgett Chef – Producer

Barley Forage EYT

Plot	Entry	Name	Pedigree
101	12	MT20_F098_24	Lavina/Totem
102	6	MT20_F097_07	Lavina/Atlas
103	31	MT20_F110_17	Lavina/PI274630
104	21	MT20_F108_24	Lavina/clho7086
105	8	MT20_F098_01	Lavina/Totem
106	22	MT20_F109_04	Lavina/PI467809
107	9	MT20_F098_03	Lavina/Totem
108	24	MT20_F109_10	Lavina/PI467814
109	34	MT20_F111_15	Lavina/PI5799625
110	10	MT20_F098_05	Lavina/Totem
111	33	MT20_F111_10	Lavina/PI5799622
112	5	MT20_F097_01	Lavina/Atlas
113	14	MT20_F099_02	Lavina/PI548108
114	18	MT20_F099_14	Lavina/PI548115
115	17	MT20_F099_10	Lavina/PI548113
116	26	MT20_F109_22	Lavina/PI467821
117	1	MT16F02902	COWBOY/LAVINA
118	23	MT20_F109_08	Lavina/PI467813
119	19	MT20_F108_12	Lavina/clho7079
120	15	MT20_F099_04	Lavina/PI548109
121	7	MT20_F097_20	Lavina/Atlas
122	30	MT20_F110_12	Lavina/PI274629
123	3	Haymaker	
124	29	MT20_F110_10	Lavina/PI274627
125	2	Lavina	
126	27	MT20_F110_04	Lavina/PI274620
127	13	MT20_F098_28	Lavina/Totem
128	28	MT20_F110_07	Lavina/PI274623
129	36	MT20_F111_25	Lavina/PI5799630
130	32	MT20_F110_19	Lavina/PI274631
131	25	MT20_F109_18	Lavina/PI467819
132	35	MT20_F111_21	Lavina/PI5799627
133	20	MT20_F108_13	Lavina/clho7080
134	16	MT20_F099_05	Lavina/PI548110
135	4	Hays	
136	11	MT20_F098_08	Lavina/Totem

Barley Forage AYT Intrastate

Plot	Entry	Name	Pedigree
101	25	MT19_F07_04	MT103038.4/ND24388
102	13	MT18F00607	LAVINA/PI264251
103	5	MT16F02401	LAVINA/ND24388
104	11	MT18F00503	LAVINA//Hays/WCC100
105	23	MT19_F05_03	LAVINA/ND24388
106	20	MT19_F03_01	LAVINA/ND24260
107	24	MT19_F06_02	MT103038.4/LAVINA
108	16	MT18F00812	MT110009/OR15_5
109	19	MT19_F01_03	HAYBET/ND19119
110	1	MT16F02902	COWBOY/LAVINA
111	2	Lavina	
112	15	MT18F00803	Hays/WCC100//LAVINA
113	17	MT18F00908	MT110061/OR15_5
114	3	Haymaker	
115	4	MT16F01601	Lavina/ND24260
116	14	MT18F00714	MT103038.4/ND24388
117	9	MT16F02406	LAVINA/ND24388
118	21	MT19_F04_01	LAVINA/ND24260_3
119	6	MT16F02405	LAVINA/ND24388
120	10	MT17F02410	LAVINA/ND24388
121	18	MT19_F01_01	HAYBET/ND19119
122	22	MT19_F04_02	LAVINA/ND24260_3
123	12	MT18F00507	LAVINA//Hays/WCC100
124	8	MT17F01612	LAVINA/ND24260
125	7	MT16F02903	COWBOY/LAVINA

2022 Winter Canola Planting Date

Clint Beiermann – MSU NWARC

Introduction:

Adoption of winter canola has been limited in Montana and other northern regions of the great plains compared to spring canola. A perceived disadvantage of winter canola is poor winter survival. The objective of this project is to determine if planting timing and variety affects winter survival, yield, and other agronomic characteristics of winter canola.

Table 1. Management information			
Seeding date:		Field:	Y7
Julian date:	232, 246, 264	Soil type:	Silty Clay Loam
Seeding rate:	800,000 plants/A	Tillage:	Conventional
Previous crop:	Fallow	Soil residual nutrient (N, P, K lb/A):	167-12-143-72S
Herbicide:	None	Nutrient fertilizer applied (N, P, K lb/A):	Applied Spring 2022 100-42-37-20S

Table 2. Planting Date
August 15
September 1
September 15

Table 3. Varieties
Croplan 1022WC
Croplan 225RR
Croplan 320RR
Rubisco Mercedes
Rubisco PluraxCL
Photosyntech Quartz

Table 4. 2021 Canola Stand and Overwinter Stand Reduction			
Treatment	Fall Stand Plants/Acre	Spring Stand Plants/Acre	% Stand Reduction
August 15	626,470 b*	471,093 ab	23 a
September 1	651,787 b	518,749 a	18 a
September 15	745,608 a	427,409 b	42 b
*Treatments denoted by different letters are significantly different at α=0.05			

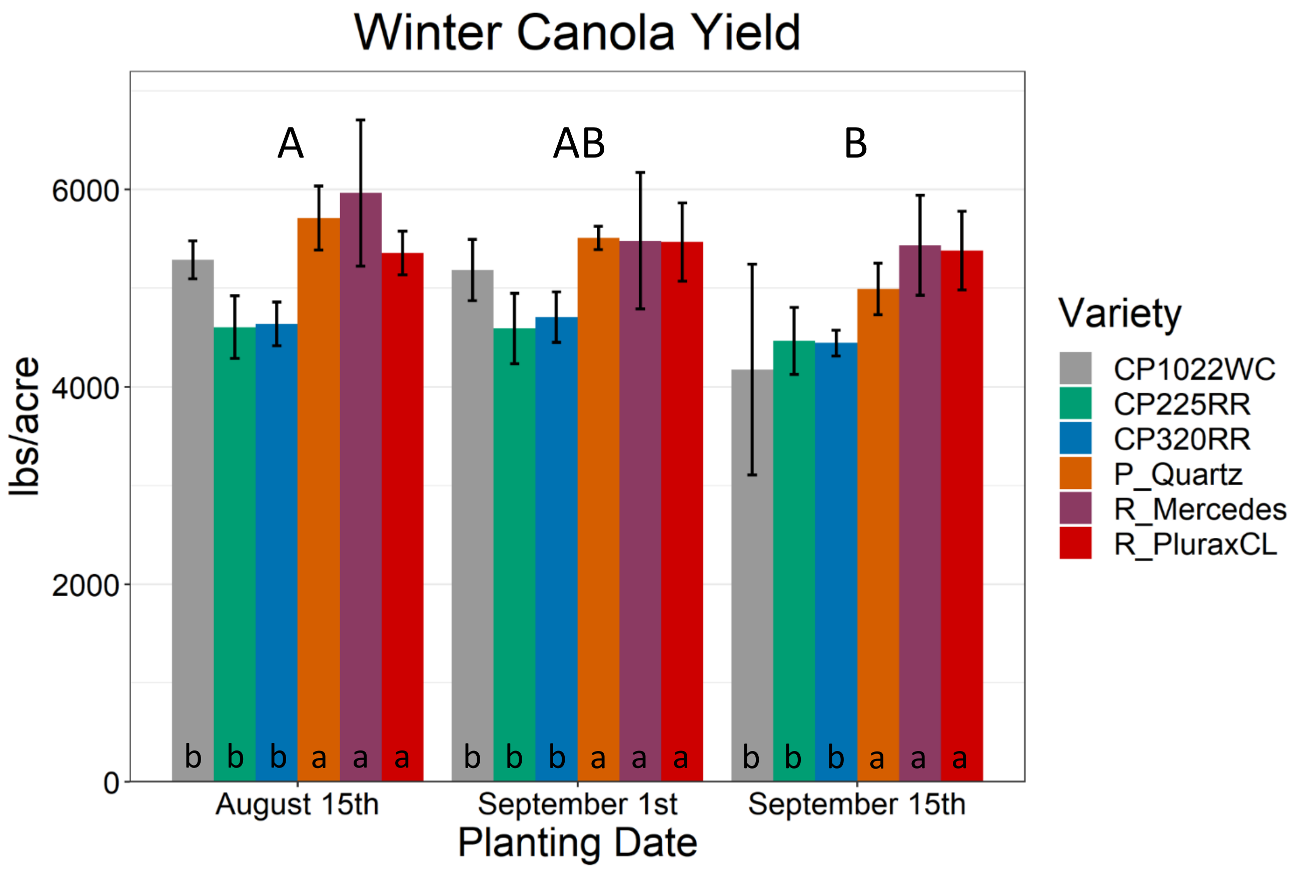

Table 5. 2022 Canola Stand and Overwinter Stand Reduction			
Treatment	Fall Stand Plants/Acre	Spring Stand Plants/Acre	% Stand Reduction
August 15	536,616 ab	420,442 a	20 b
September 1	581,242 a	390,568 a	31 b
September 15	503,055 b	105,479 b	79 a
*Treatments denoted by different letters are significantly different at α=0.05