Project Title:	2022 Winter Wheat Intrastate	

MONTANA
wheat & barley

Objective: To evaluate the performance of selected winter wheat varieties in a production environment in northwestern Montana

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Summary:

The winter wheat intrastate trial was planted on September 24th, 2021 (Table 1) with 49 varieties and managed with supplemental overhead sprinkler irrigation.

The average yield for the study was 126.7 bu/A. The lowest yield was 91.9 bu/A for CP7909 while the highest yield came from LCS Helix AX at 149.0 bu/A which also had one of the lowest protein contents at 11.0%. The average protein was 12.0% and the highest protein content was up to 13.4% for CP7050AX. Winter survival ratings ranged from 99% to 77.3%, forty-two of the varieties were statistically equal to the highest value based on Fischer's LSD($\alpha = 0.05$), while seven of the varieties were statistically different. The average heading date was 160 julian days, with the earliest date being 154 julian days from CP7909 to the latest date at 166 julian days from MT WarCat (Table 2).

Table 1. Management information

Seeding date:	9/24/2021	**Field Location:**	R5
Julian date:	267	**Harvest date:**	8/12/2022
Seeding rate:	NA	**Julian date:**	224
Previous crop:	Peas	**Soil type:**	Creston Silt Loam
Herbicide:	Axial Bold & Cleansweep M 5/11/22	**Tillage:**	Conventional
Insecticide:	None	**Soil residual nutrient (NO3-1, P, K lb/A):**	199-14-188
Fungicide:	None	**Nutrient fertilizer applied (N, P2O5, K20 lb/A):**	9.5-45-90-15S Fall 2021

Table 2. Agronomic performance of winter wheat varieties

Cultivar/Line	HD (Julian)	HT (in)	Winter Survival (%)	YLD (bu/ac)	TWT (lb/bu)	PRO (%)
LCS Helix AX	158	39.0	**98.3**	<u>**149.0**</u>	64.6	11.0
MTCS20156	163	32.6	**96.3**	**148.6**	64.3	12.6
Keldin	161	35.9	**94.0**	**147.1**	63.9	12.0
MT19175	164	33.8	**91.3**	**144.8**	62.7	11.1
SY Clearstone 2CL	161	39.9	**97.7**	**144.4**	63.6	12.0
Milestone	159	33.0	**97.0**	**144.4**	62.7	12.0
SY Wolverine	158	34.8	<u>**99.0**</u>	**142.6**	64.6	11.7
Whistler	161	40.4	**97.7**	**141.1**	64.7	11.0
AP Bigfoot	160	37.0	**97.7**	**141.0**	**64.9**	11.5
MT1745	162	35.4	**93.3**	**136.1**	64.2	11.3
AAC Wildfire	166	35.5	**96.0**	**135.8**	64.2	11.5
Ramsay	160	33.2	**94.7**	**134.2**	63.7	12.1
Bobcat	163	32.7	**93.3**	**134.2**	64.7	11.7
MT2019	160	31.3	**96.3**	**132.7**	63.6	11.6
Flathead	156	36.6	**98.3**	**130.5**	64.1	11.7
LCS Steel AX	163	35.8	**92.3**	**130.5**	63.3	11.3
Balance	160	37.8	**90.0**	**129.7**	63.8	**13.0**
Northern	163	35.4	**96.3**	**129.7**	63.3	11.8
WB4510 CLP	161	35.8	**92.3**	**129.3**	<u>**65.5**</u>	12.0
MTFH19132	162	37.3	88.0	**129.0**	63.5	12.1
Warhorse	162	38.8	<u>**99.0**</u>	**128.2**	63.5	12.7
AP Solid	161	33.9	**98.3**	**127.8**	**65.1**	12.2
StandClear CLP	161	36.6	**96.3**	**127.8**	64.3	12.7
MS Maverick	160	35.7	**95.7**	**127.1**	**64.9**	12.0
Yellowstone	162	37.5	**96.0**	**126.3**	63.2	11.2
FourOsix	161	35.0	**93.7**	**126.3**	63.8	12.0
MTS2068	164	31.4	**97.7**	**125.9**	64.0	11.5
MTS1903	164	33.6	**94.3**	**125.5**	63.9	11.3
MTS1908	165	32.8	**90.7**	**125.5**	63.7	12.0
MS Sundown (MS 1022)	**156**	39.1	**97.3**	**124.8**	64.2	12.0
AP18 AX	157	35.8	**96.0**	**123.6**	64.3	11.4
LCS Julep	**155**	32.9	**90.0**	**123.3**	**64.9**	12.2
MT WarCat	166	32.4	77.3	**122.9**	62.9	12.0
Loma	164	32.1	84.3	**122.5**	63.0	11.4
MTCL19151	159	34.9	**95.7**	121.4	63.5	12.0
Battle AX	**155**	33.3	88.3	120.2	63.9	12.1
CP7017AX	156	33.4	**90.0**	119.9	**64.9**	11.7
Judee	161	34.3	**97.0**	117.6	64.7	11.9

Table 2. continued

Cultivar/Line	HD (Julian)	HT (in)	Winter Survival (%)	YLD (bu/ac)	TWT (lb/bu)	PRO (%)
MTCL2010	158	33.2	**95.0**	117.2	63.6	12.3
WB4619	158	34.0	**96.7**	116.8	61.6	11.5
20Nord148	160	39.1	86.7	115.7	63.2	11.6
MTFH20166	162	37.1	**97.0**	113.4	63.4	**13.0**
Brawl CL Plus	**155**	35.6	**96.0**	112.7	64.3	**13.3**
MT19159	163	31.6	86.7	112.3	63.0	11.5
MTF20189	163	<u>**50.0**</u>	**93.7**	110.8	63.4	**13.2**
CP7050AX	**154**	36.3	**96.3**	109.3	64.2	<u>**13.4**</u>
MS Iceman	158	33.3	**92.3**	108.1	**65.4**	12.7
Fortify SF	160	35.5	89.0	107.8	64.1	11.4
CP7909	<u>**154**</u>	34.0	<u>**99.0**</u>	91.9	64.6	12.4
Average	**160**	**35.4**	**94.0**	**126.7**	**63.95**	**12.0**
LSD (0.05)	**2.22**	**4.17**	**9.59**	**27.23**	**0.633**	**0.50**
C.V	**0.71**	**6.07**	**5.26**	**11.12**	**0.51**	**2.15**
PR>F	**<0.0001**	**<0.0001**	**0.0003**	**0.0005**	**<0.0001**	**<0.0001**

Bold = top performer; **Bolding** denotes equal value to highest or earliest value within a column based on LSD(0.05)

HD = heading date, HT = height, YLD = yield, TWT = test weight, PRO = protein