Project Title: 2021 Winter Wheat Intrastate

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

Personnel: Clint Beiermann, Jim Berg, Phil Bruckner, Jessica Pavelka

Summary:

The winter wheat intrastate trial was planted on September 28th, 2020 with 49 varieties and managed under rainfed conditions (Table 1).

The average yield for the study was 122.4 bu/A. The lowest yield was 94.7 bu/A for SY 517 CL2 while the highest yield came from Yellowstone at 146.3 bu/A. The average protein was 11.7%, with the lowest protein content being 10.83% for WB4505 up to 13.56% for Brawl CL Plus. Forty varieties showed no signs of lodging, while seven only showed between 1-8% lodging. The highest lodging rate was 80% from Whistler. Winter survival ratings averaged from 98% to 91%, but were unaffected by winter wheat variety. The average heading date was 165 julian, with the earliest date being 154 julian from CP7909 to the latest date at 172 julian from MTS1831 (Table 2).

Table 1. Management information

Seeding date:	9/28/2020	**Field Location:**	Y6
Julian date:	264	**Harvest date:**	8/24/2021
Seeding rate:		**Julian date:**	236
Previous crop:	Canola	**Soil type:**	Silty Clay Loam
Herbicide:	Axial Bold & Cleansweep M 5/6/21	**Tillage:**	Conventional
Insecticide:	None	**Soil residual nutrient (NO3-1, P, K lb/A):**	Fall 2020, 10-60-50-15S
Fungicide:	None	**Nutrient fertilizer applied (N, P2O5, K20 lb/A):**	Spring 2021, 150-0-0

Table 2. Agronomic performance of winter wheat

Variety/Line	HD (Julian)	LOD (%)	YLD (bu/A)	TWT (lb/bu)	PRO (%)	Winter Survival (%)
Yellowstone	166	0	**146.3**	57.1	11.96	97
MTS18149	169	2	**144.1**	58.2	11.98	94
NAS-7653 (Ramsay)	166	0	**140.5**	58.0	11.22	95
Milestone	167	0	**140.2**	56.7	11.15	96
MTS1903	170	0	**139.0**	**59.2**	11.34	97
MTS1908	170	0	**138.8**	**59.2**	11.24	96
Loma	169	8	**138.6**	58.3	11.69	96
MT1745	168	0	**137.7**	58.4	11.38	97
SY Clearstone 2CL	166	0	**134.7**	57.9	11.78	98
WB4792	166	0	**134.2**	**60.1**	10.98	98
Flathead	159	0	**133.8**	58.1	11.74	98
Keldin	166	0	**130.9**	**59.1**	11.69	94
MTFH19132	165	1	**130.8**	57.5	11.29	96
FourOsix	167	0	**130.4**	58.2	11.36	94
MTS1831	172	0	**130.1**	57.8	11.17	94
Byrd CL Plus	165	8	**129.3**	57.3	11.12	98
Northern	167	0	**129.2**	57.8	11.70	95
Balance	167	0	128.6	57.8	12.22	95
MTS1915	171	0	127.8	57.7	11.51	93
MT1872	166	0	127.7	57.5	11.46	97
WB4505	160	0	126.1	58.4	10.83	96
AAC Wildfire	169	0	126.0	**59.4**	11.78	96
MTCL19149	166	7	125.6	57.8	11.08	95
MTCL1737	171	0	125.1	56.6	11.48	92
AP18 AX	161	0	123.8	57.2	11.71	95
Bobcat	166	0	123.3	58.7	11.97	96
Fortify SF	161	33	123.1	58.6	11.51	96
WB4401	159	1	122.6	58.1	10.95	96
LCS Julep	161	0	121.1	57.9	12.16	94
WB4418	162	0	119.7	56.2	11.44	96
Whistler	164	80	119.5	58.8	11.08	96
MT19175	170	0	117.5	56.2	11.76	96
Battle AX	163	0	115.8	58.6	11.86	94
LCH18-7071 (LCS Steel AX)	167	0	114.2	56.6	11.80	93
MTCL19151	165	0	113.1	57.1	12.07	96
StandClear CLP	165	0	113.0	58.7	12.01	98
LCS Helix AX	161	0	112.3	57.9	11.26	94
CP7869	158	0	112.0	57.5	11.94	93
MTS1855	168	18	111.6	**59.4**	11.81	93
MTS18116	171	0	111.3	57.3	11.42	93

Table 2. (continued)

Variety/Line	HD (Julian)	LOD (%)	YLD (bu/A)	TWT (lb/bu)	PRO (%)	Winter Survival (%)
Warhorse	166	0	110.9	56.4	12.68	96
Brawl CL Plus	158	0	107.6	58.7	**13.56**	98
CP7017AX	163	0	104.7	56.8	11.92	91
SY Wolverine	159	0	102.7	57.2	11.63	96
Judee	166	0	102.5	**59.1**	12.25	97
NP13005004#49 (AP Solid)	166	0	102.0	58.8	12.01	92
CP7909	154	0	101.3	58.5	**12.93**	97
CP7050AX	158	0	100.7	58.2	12.84	96
SY 517 CL2	159	0	94.7	58.8	**13.00**	94
Average	**165**	**3**	**122.4**	**58.0**	**11.7**	**95**
LSD (0.05)	**-**	**-**	**17.6**	**1.1**	**0.6**	**-**
C.V.	**-**	**-**	**8.3**	**1.1**	**3.3**	**1.5**

Bold = indicates varieties with values equal to highest variety based on LSD (p=0.05)
HD = Heading date, LOD = lodging, YLD = yield, TWT = Test weight, PRO = protein