

**Project Title:** 2020 Intrastate Winter Wheat Trial

**Objective:** To evaluate the performance of selected winter wheat in northwestern Montana

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**Summary:**

Forty-nine (49) winter wheat varieties/lines were planted in fall 2019, and managed under rainfed condition (Table 1). A total of 16.5 inches rainfall was received during the growing period (Sept. 2019 -Aug. 2020).

On average, the grain yield was 153 bu/a, and ranging from 122 bu/a for SY 517 CL2 to 173.5 bu/a for WB4792. Grain test weight (TWT) averaged 62.2 lbs/bu, ranging from 58.6 lbs/bu for MTS18149 to 64.8 lbs/bu for SY 517 CL2 (Table 2). The average day for heading was 166 with the earliest heading at 156 for CP7909 and the latest was at 171 for both Loma and MTS1831. The average plant height was 37.2 inches. The tallest variety was AAC Wildfire and the shortest was SY 517 CL2. Thousand kernel weight (TKW) averaged 43.5 g, ranging from 35.6.8 g for WB4418 to 56.5 g for Mpress (SWW). Falling no. averaged 326 sec., and ranging from 258.5 sec. for Loma to 426.4 sec. for MT1848. Average grain protein content was 10.2%; Brawl CL Plus had the highest protein content at 11.4%, whereas Incline AX had the lowest protein content at 8.9%.

**Table 1.** Management Information

<b>Seeding date:</b>	9/24/2019	<b>Field Location:</b>	Y2
<b>Julian date:</b>	267	<b>Harvest date:</b>	8/11/2020
<b>Seeding rate:</b>	Unknown	<b>Julian date:</b>	224
<b>Previous crop:</b>	Canola	<b>Soil type:</b>	Creston silt loam
<b>Herbicide:</b>	5/5: Huskie/Axial	<b>Tillage:</b>	Conventional
<b>Insecticide:</b>	None	<b>Soil residual nutrient (NO<sub>3</sub><sup>-</sup>, P, K lb/A):</b>	60-12-260
		<b>Nutrient fertilizer applied (N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O lb/A)</b>	9/19/19: 13.5-45-80-11.25S-1.13Zn
<b>Fungicide:</b>	None		4/10/20: topdress 100-0-0

**Table 2.** Agronomic performance of the winter wheat entries

Entry	Cultivar/Line	Yield (bu/a)	TWT (lbs/bu)	Heading (Julian d)	Height (inch)	TKW (g.)	FN (Sec.)	Protein (%)
19	WB4792	<b>173.5</b>	62.2	167.0	37.4	41.6	372.7	9.2
20	LCS Jet	<b>171.1</b>	61.5	167.0	33.9	49.6	346.4	9.6
29	Mpress (SWW)	<b>170.7</b>	60.8	168.3	37.0	<b>56.5</b>	299.7	9.5
48	MT1867	<b>168.1</b>	62.5	167.0	39.0	42.1	318.5	9.7
4	Keldin	<b>167.6</b>	62.9	167.0	37.4	50.5	350.5	9.8
34	MT1745	<b>166.8</b>	62.5	167.0	41.0	45.2	401.7	10.2
32	MT1642	<b>166.2</b>	62.3	167.0	40.3	47.9	401.6	10.1
41	MTS1831	<b>166.1</b>	59.5	171.3	35.6	39.1	311.0	10.2
7	Northern	<b>164.0</b>	61.1	167.7	40.8	44.3	377.6	10.2
8	Loma	<b>162.8</b>	61.2	171.3	38.8	42.5	258.5	10.5
6	SY Clearstone 2CL	<b>162.1</b>	61.9	167.0	40.5	47.1	391.1	9.7
26	Langin	<b>161.9</b>	61.4	161.0	35.9	42.6	323.6	9.2
2	Yellowstone	<b>161.6</b>	61.4	167.0	40.5	46.2	388.7	10.2
45	MT1848	<b>159.8</b>	62.1	167.0	35.9	39.9	<b>426.4</b>	<b>11.1</b>
10	Flathead	<b>159.6</b>	63.4	161.0	36.8	46.9	379.1	10.1
23	LCS15ACC-8-21 (LCS Helix AX)	<b>159.3</b>	63.2	163.3	37.7	44.6	347.7	9.7
38	MTCL1732	<b>158.7</b>	61.5	167.0	36.6	43.2	354.4	10.5
27	Byrd CL Plus	<b>158.7</b>	62.2	163.3	40.3	44.3	321.9	9.0
33	MT1683	<b>158.5</b>	62.2	167.0	39.3	48.1	376.8	10.1
28	AAC Wildfire	156.9	59.1	169.7	42.4	47.9	355.8	10.2
15	SY Wolverine	156.9	63.6	161.0	35.9	40.3	334.0	10.2
39	MTCL1737	156.7	61.2	168.3	35.2	42.5	344.0	10.4
42	MTS18116	156.0	60.6	169.0	35.0	39.5	318.9	9.9
47	MT1866	155.1	62.6	167.0	36.3	42.5	366.0	9.8
24	Long Branch	155.0	63.1	161.0	36.5	45.0	357.9	9.7
49	MT1872	154.8	63.5	167.0	36.9	49.9	353.5	10.1
46	MT1855	153.6	62.5	167.7	39.0	39.0	339.0	10.3
25	Incline AX	150.5	61.1	167.0	38.5	43.1	329.2	8.9
22	LCS-18-7071	150.4	61.5	167.0	40.2	41.8	353.7	9.6
31	StandClear CLP	149.3	63.7	167.0	36.6	42.9	390.2	10.5
17	WB4311	148.9	62.6	167.0	32.9	47.5	367.4	10.3
40	MTS1810	148.6	62.0	167.7	38.7	44.3	392.2	<b>11.2</b>
35	MT1746	146.6	63.6	167.0	37.7	38.1	372.6	10.4
43	MTS18149	146.6	58.6	170.3	37.5	44.5	347.6	10.5
3	Judee	146.3	<b>64.0</b>	167.0	38.0	44.1	333.9	10.4
18	WB4418	145.8	60.1	165.0	36.2	35.6	318.5	10.2
12	SY Monument	145.2	61.9	167.0	35.7	42.3	362.5	10.3
44	MT1845	145.2	62.3	165.0	37.2	42.5	<b>409.5</b>	<b>11.2</b>

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Table 2. Continued

Entry	Cultivar/Line	Yield (bu/a)	TWT (lbs/bu)	Heading (Julian d)	Height (inch)	TKW (g.)	FN (Sec.)	Protein (%)
16	WB4269	144.7	63.6	161.0	35.8	36.6	363.0	10.3
9	FourOsix	143.7	62.8	167.0	34.7	44.1	380.2	9.8
14	SY Legend CL2	141.9	63.6	161.0	35.8	44.1	<b>406.3</b>	10.2
36	MT1787	140.8	62.7	167.0	36.0	42.6	386.3	10.7
11	Bobcat	139.5	<b>63.8</b>	167.0	36.4	42.5	373.8	10.2
1	Warhorse	138.5	62.1	167.0	39.2	41.7	393.3	<b>10.9</b>
37	MT1793	138.0	62.0	163.0	36.1	38.4	380.4	10.4
5	Brawl CL Plus	135.6	63.5	161.0	34.5	43.6	386.4	<b>11.4</b>
21	LCS Photon AX	123.7	<b>64.5</b>	163.0	38.5	40.7	<b>423.0</b>	10.7
30	CP7909	122.5	63.5	156.0	33.8	40.6	359.0	9.7
13	SY 517 CL2	122.0	<b>64.8</b>	161.0	32.4	39.3	<b>407.9</b>	10.7
	<b>Average</b>	152.6	62.2	165.8	37.2	43.5	362.0	10.2
	<b>LSD (0.05)</b>	15.2	1.1	2.2	3.1	1.7	22.7	0.6
	<b>CV (%)</b>	6.1	1.1	0.8	5.1	2.4	3.9	3.2
	<b>P-value</b>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

**bold** = indicates highest value within a column

**bold** = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD ( $p = 0.05$ )

TWT = test weight, FN = falling no.; test weight and yield standardized to 12% moisture levels