

Project title: 2023 Spring Wheat Advanced Year Trial

Objective: To evaluate the performance of selected spring wheat varieties in production environment in northwestern Montana.

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Summary:

The spring wheat advanced trial of 64 entries was seeded on 26 April 2023 and harvested on 30 August 2023. Detailed cultural practices are provided in Table 1. This was a rainfed trial and received 5.68 inches of rainfall for the growing season.

Average yield was 110.9 Bu/A with AGRIPR 141 having the best performance with (127.1 Bu/A) and WB222 the lowest (90.5 Bu/A). Average heading date was day 169 (June 18th) with MT 21074 having the earliest (day 166; June 15th) and LIMAGR 222 the latest (day 175; June 24th) Average thousand kernel weight was 41.3g with MT21325 being the highest (49.3g) and BZ 996434 being the smallest (32.9g). Average protein was 12.3%, with SYN 222 the highest (13.8%) and SYN 183 the lowest (11%). Average test weight was 61.6 lbs./Bu, PI 679964 was the highest (64.3 lbs./Bu) and WB 211 the lowest (59.8 lbs./Bu).

Table 1. Management information

Seeding date:	4/26/2023 (116)	Field Location:	Y3
Seeding rate:	N/A	Harvest date:	8/30/2023 (273)
Previous crop:	Peas	Soil type:	Creston Silt Loam
Herbicide	Axial Bold, Cleansweep	Tillage:	Conventional
Insecticide	N/A	Soil residual nutrient (NO3-1, P, K lbs./A):	140.5, 13, 117
Fungicide	N/A	Nutrient fertilizer applied (N, P2O5, K2O lbs./A):	25, 30, 90

Table 2. Agronomic performance

ID	HD (J)	H (in)	PRO (%)	GRNFILL (Days)	TWT (lbs./Bu)	TKW (g)	YLD (bu/A)
AGRIPR 141	169.3	33.8	11.7	41.7	60.7	41.4	127.1
AGRIPR 161	171	34.6	12.6	41	61.6	44.5	124.9
BZ 917-277	169.7	33	12.4	43.3	62.4	38	124.4
BZ 92413R	168.3	33.9	13.2	42.7	61.5	46	124
BZ 996434	168	34.6	11.8	42.7	61.2	32.9	123.8
CI 10003	168	30.2	12.2	43	63.4	37.9	123.1
ND 695	169.7	32.3	11.6	40	62.4	44.1	123
PI 574642	169.7	32.9	12	41	60.9	39.5	122.7
PI 633974	169	31.4	11.9	42	62.1	45.3	121.5
PI 642366	169	33	12.9	43	60.8	40.1	121.2
PI 660981	168.3	32	11.3	40	61.7	42.9	121
PI 676978	170.3	34.8	13.5	43	60.6	46.4	121
PI 679964	172	29.3	12.4	39	64.3	40	120.6
PI 690450	170	33.7	12.7	40.7	62.1	42.7	120.5
WB 9879 CLP	170	33.2	12.2	42	62.1	37	119.7
PI 699957	168.3	32.9	12	43.3	62	44.8	119.4
MT 1809	171.7	30.7	11.4	43	61.6	43	118.9
MT 1939	168	34.5	12.1	43.7	60.4	42.2	118.2
MT 2030	169.3	31.1	11.3	39	62.3	39.9	117.9
MT 2049	166.7	33.9	12.3	43	61.7	39.3	117.9
MT 2050	167.3	32.8	11.9	43	62.4	37.4	117.7
MT 2063	170.3	30.8	11.6	44	63	46.8	116.5
MT 21016	168.7	31.9	11.8	41.7	62.2	41.1	116.2
MT 21031	169.7	32.1	11.9	44.3	60.5	38.8	114.7
MT 21037	169.7	33.5	13.1	40.3	60.2	42.5	114.7
MT 21074	166	30.9	12	42.3	61.7	41.7	114.5
MT 21104	166.3	33.5	12.8	40.7	63.6	41.4	114.4
MT 21105	167.7	33.8	12.6	44.3	61.4	44.3	114.3
MT 21148	169.3	33.4	12.6	41	60.4	43	114.2
MT 21173	172	37.3	12.8	42.3	62.3	40.9	111.4
MT 21174	168.3	32.2	12.4	42.3	63.1	39.6	110.6
MT 21176	169.3	33.2	11.9	40.3	61.4	40.7	110.5
MT 21186	170	35.1	12.8	43.3	61.8	43	110.1
MT 21211	167.7	33.4	11.7	41.7	61.2	39.5	109.5
MT 21214	168.3	33.2	11.9	41	61.1	47.7	109.5
MT 21220	171	32.5	12.8	41	61.7	42.9	109.1
MT 21224	170.7	33.6	12	41.7	61.3	42.2	108.9

Table 2. Continued

MT 21230	170	33.3	12.8	42.3	60.2	41.6	108.2
MT 21247	169	33.9	12.6	40.3	64	41.6	107.9
MT 21262	169.7	34.4	11.9	43	61.5	43.7	107.9
MT 21313	168.3	33.5	12	42.3	61.9	42.9	107.9
MT 21314	173.7	36.4	11.4	39	60.1	39.8	107.6
MT 21352	167.7	35.8	12.3	40.7	62.2	49.3	106.8
MT 21359	170	31	13	39.7	62.5	38.1	106.3
MT 21384	168.3	33.3	12.7	43.7	62.2	48.9	105.9
MT 21473	170	31.7	12.5	37.3	62.4	39.1	105.9
MT 21484	169.7	32.9	12.6	39	61.6	46	105.4
MT 21485	168	33	12.4	44	61.1	46.1	104.9
MT 21487	169.7	32.6	12.9	40	60.4	38	104.2
LIMAGR 211	167.3	33.1	12.3	40.3	61.1	41.5	103.7
LIMAGR 222	175.3	35.6	12.2	36.3	60.3	38.9	103.2
LIMAGR 231	171	38.7	12.8	41	61.7	44.4	101.5
MS 201	170	32.6	12.7	44.3	62.3	41.3	100.9
MS 211	171.3	34.3	11.4	38.7	61.8	39.9	100
MS 212	168	33.4	13.1	40.7	61.2	40.7	99.7
SYN 182	170	32.1	12.6	43	62.4	38.9	99
SYN 183	169	33.5	11	39.3	60.1	35.3	98.7
SYN 211	169.7	32.3	12.4	42.3	60.6	42.2	98.2
SYN 212	170	31.9	13.8	40.7	62.9	38.5	98
NDHRS14-0134-C03	171.3	44.7	11.8	40.7	61.8	38	97
W-2	171.7	31.9	12.5	38.7	61.7	33.9	95.2
WB 173	167	24.2	13.3	41.7	60.9	37.2	93.9
WB 211	172	34.7	11.9	37	59.8	39.3	92
WB 222	169.3	31.8	12.4	42.7	61.7	38.6	90.5
MEAN	169.5	33.2	12.3	41.4	61.6	41.3	110.9
C.V.	0.5	5.6	3.4	3.6	0.5	2.7	9.6
LSD(0.05)	1.3	3	0.7	2.4	0.5	1.8	17.2
P-Value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

bold: highest or earliest value within a column, **bold:** equal value to highest or earliest value within a column based LSD(0.05), HD= heading date, H= plant height, PRO= protein, GRNFILL= grain fill, TWT= test weight, TKW= thousand kernel weight, YLD= yield