

Project Title: Evaluation of Advanced Spring Wheat Experimental Lines - 2013

Project Leader: Bob Stougaard

Project Personnel: Brooke Bohannon, Luther Talbert, and Nancy Blake

Objective: To evaluate spring wheat varieties and experimental lines for agronomic performance in environments and cropping systems representative of northwestern Montana.

Results:

Heading dates spanned a 10 day period and averaged 176 Julian days (June 25). MT 1205 and MT 1203 were the earliest at 171 (June 20), with Thatcher and WB Mayville being the latest at 181 (June 30). Stripe rust was prevalent throughout the nursery and averaged 12 % despite being treated with a fungicide. MT 1252 and Jedd were the most susceptible varieties, while MT 1172, LCS Breakaway and CAP 400-1 had the lowest infection levels. Plant heights averaged 37 inches and ranged from 32 to 45 inches for Jedd and Thatcher, respectively. Not surprisingly, Thatcher also had a high incidence of lodging, as did MT 1205 and MT 1206. Yields averaged 106 bu/A, ranging from a high of 125 bu/A for Buckpronto to a low of 68 bu/A for Thatcher. Volt, along with several CAP lines, produced yields comparable to Buckpronto. Protein content averaged 15 %. The highest proteins were observed with SY605 CL (16.8%) and CAP400-1 (16.7%), while MT 1252 and LIMAGR5 had the lowest proteins at 13.3 % and 12.8%, respectively. Test weights averaged 61.5 lb/bu, ranging from a high of 64.1 lb/bu for WB Mayville, to a low of 59.2 lb/bu for MT 1224.

Summary:

Efforts to control stripe rust and orange wheat blossom midge allowed the genetic potential of the cultivars to be expressed. Yields were exceptional as were protein levels. Buckpronto and Volt continue to be the top yielding varieties for this area.

Table 1. Material and Methods - Spring wheat AYT - 2013

Seeding Date:	4/18/13	Fertilizer:	150-40-110-20
Julian Date:	108	Herbicide:	5/20/13
Seeding Rate:	80 lb/A		Affinity TankMix 0.6 OZ/A, MCPA
Previous Crop:	Alfalfa		0.5 PT/A, Axial 16.4 FL OZ/A
Tillage:	Conventional	Fungicide:	6/17/13 Headline 9 FL OZ/A
Irrigation:	None	Insecticide:	7/1/13 Warrior II 1.5 FL OZ/A
Soil Type:	Creston Sil	Harvest Date:	8/20/13
Soil Test:	130-12-144	Julian Date:	232

Table 2. Agronomic data from the evaluation of advanced spring wheat lines-2013

Cultivar	HD Julian	SR %	HT in	LOD %	YLD bu/A	PRO %	TWT lb/bu
Buckpronto	175	5.7	37.7	1.7	125.3	14.5	61.2
MTHW1150	178	18.0	40.3	0.0	124.1	14.4	61.7
Volt	178	1.7	34.7	0.0	123.8	14.6	63.8
MT 1236	175	4.7	34.4	1.7	123.0	16.0	61.2
MT 1255	172	15.7	35.3	0.0	122.1	14.4	60.9
MT 1231	175	6.0	36.1	0.7	121.2	15.5	61.9
CAP 34-1	175	7.7	35.3	0.7	120.5	14.3	62.3
MT 1142	176	11.7	39.9	13.3	118.1	16.0	62.5
MT 1133	176	4.3	35.7	0.0	117.8	15.1	61.8
CAP219-3	172	11.7	40.1	0.0	117.7	14.3	63.1
CAP197-3	177	15.0	36.2	0.0	116.5	13.9	61.0
MT 1103	178	12.7	37.3	16.7	116.3	14.9	62.3
MT 1219	177	5.7	33.7	81.7	115.1	15.1	61.3
MT 1227	178	4.3	37.3	6.7	114.2	16.2	59.7
Duclair	173	11.0	35.7	5.0	114.1	14.6	61.1
CAP400-1	179	1.0	38.1	0.0	113.4	16.7	61.8
MT 1230	178	3.0	38.3	1.7	113.3	16.1	60.9
Vantage	175	3.3	36.3	0.0	112.4	15.1	62.4
WB9879CL	176	8.3	36.2	0.0	111.8	15.1	61.6
WB Mayville	181	8.3	39.1	0.0	111.4	16.2	64.1
MT 1002	177	17.0	37.4	28.3	111.3	15.2	61.4
MT 1206	177	6.7	35.9	83.3	111.0	14.7	61.7
MT 1264	174	3.3	36.7	0.0	110.3	15.3	61.6
MT 1053	175	10.7	35.4	0.0	109.0	14.9	61.1
MT 1273	178	12.7	38.9	0.0	108.5	14.0	61.3
SY Tyra	175	2.7	33.5	0.0	108.0	13.8	61.4
McNeal	179	17.7	39.8	0.0	107.9	16.2	61.4
LIMAGR5	178	14.3	35.9	0.0	107.9	12.8	62.5
MT 1233	175	4.3	35.3	21.7	107.5	15.9	62.2
Vida	176	3.3	38.2	16.7	107.2	15.3	59.9
Choteau	177	5.0	36.5	1.7	106.7	15.4	61.1
MT 1172	176	0.0	37.4	1.7	106.5	15.9	60.5
MT 1235	177	12.3	38.3	0.0	106.3	15.3	62.5
MT 1211	173	7.7	37.0	0.0	106.1	15.1	61.7
MT 1234	178	16.3	38.3	0.7	105.9	15.4	61.4
WB Gunnison	173	11.7	36.3	0.0	105.8	14.8	61.1
MT 1225	176	26.7	36.2	33.3	105.7	15.2	60.9
MT 1213	176	2.3	39.5	1.7	104.8	15.6	60.8
Reeder	175	3.3	39.1	1.7	103.6	15.5	62.3
MT 1007	174	11.0	35.3	0.0	103.5	15.5	62.0

HD: heading date, SR: stripe rust, HT: height, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight

Table 2. continued

Cultivar	HD Julian	SR %	HT in	LOD %	YLD bu/A	PRO %	TWT lb/bu
MT 1118	174	9.3	35.7	0.0	103.1	15.4	60.8
MT 1222	172	27.0	34.4	0.0	103.0	16.0	60.6
Conan	174	6.0	35.6	0.0	102.7	14.4	59.5
MT 1203	171	11.0	37.5	0.0	101.5	15.8	60.5
LCS Breakaway	174	0.7	37.9	26.7	100.3	15.8	62.2
MT 1216	176	29.0	39.0	51.7	99.6	15.6	61.3
MT 1252	180	65.0	38.3	63.3	99.5	13.3	60.6
SY Rowyn	175	4.0	36.0	65.0	99.1	14.5	62.2
MT 1276	174	3.3	36.7	0.0	98.0	15.4	60.6
MT 1224	176	17.3	37.7	11.7	97.3	14.8	59.2
MT 1228	177	26.7	36.2	13.3	96.9	14.8	61.0
Mott	179	24.7	41.3	0.0	96.3	15.2	62.9
Oneal	179	43.3	36.6	0.0	96.2	14.6	59.4
Corbin	175	5.7	36.1	56.7	95.7	14.9	59.7
Jedd	174	54.7	32.1	0.0	95.3	13.5	62.2
MT 1205	171	33.0	35.1	88.3	94.9	14.9	62.3
SY605 CL	172	3.7	38.9	8.3	94.5	16.8	62.5
MT 1173	178	11.7	37.9	15.0	94.2	15.5	60.4
SY Soren	175	4.0	36.6	0.0	94.2	15.7	62.9
WB Rockland	173	2.0	31.9	0.0	93.5	16.3	61.7
LCS Powerplay	175	4.3	37.0	26.7	93.3	14.8	61.9
Brennan	173	4.3	34.9	0.0	91.2	15.0	63.0
Fortuna	177	3.0	42.4	35.0	88.6	15.5	61.8
Thatcher	181	31.0	45.0	80.0	68.6	16.0	59.9
Mean	176.0	12.1	37.0	13.5	106.1	15.2	61.5
CV	1.0	69.0	6.7	88.0	5.2	0.0	0.1
LSD	2.0	13.5	4.0	19.2	8.9	0.0	0.1
Pr>F	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

HD: heading date, SR: stripe rust, HT: height, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight