

Title: Western Regional Soft White Spring Wheat Evaluation – 2016

Objective: To evaluate soft white spring wheat varieties for agronomic performance in environments representative of northwestern Montana.

Results:

Significant differences were observed for all response variables. Heading dates averaged 173 Julian days (June 21) and spanned a 10 day period that ranged from 167 to 177 days (Table 2.). Physiological maturity averaged 216 days (August 3) and ranged from 215 to 217 days. Stripe rust was observed on all cultivars despite an application of Tilt. Stripe rust infection averaged 27.8%, ranging from 3.0% for WB6121 to 63.3% for Alpowa. Plant heights averaged 36.7 inches, ranging from 34.3 inches for WA8254 to 41.6 inches for DH09X503-188-0. Lodging was minimal with the exception of Louise at 63.3 percent. Yield averaged 112.5 bu/A and ranged from 77.1 bu/A for DH09X101-41-0 to 136.2 bu/A for UI Stone. Protein averaged 11.46%, ranging from 10.09% for WA8254 to 13.70 % for WB6121. Test weight averaged 61.0 lb/bu and ranged from 59.3 for Treasure at 107 lb/A to 62.3 lb/bu for DH09X503-188-0. Falling number values averaged 323.7 seconds and ranged from 276.1 seconds for WB6121 to 366.6 seconds for Alpowa. Pre-harvest sprout averaged 124.6 and ranged from 64.6 for Alpowa to 267.7 for WB6121.

Summary:

UI Stone was the highest yielding variety and three entries yielded statistically equivalent to UI Stone; 12-SWW-052, IDO1405S and DH09X503-188-0. Preliminary findings demonstrate that UI Stone is a suitable soft white wheat for this region. However, cultivar differences were prevalent and continual screening of soft white wheats is necessary to identify those which perform best in northwestern Montana.

Table 1. Materials and Methods.

Seeding Date:	4/22/2016	Harvest Date:	8/23/2016
Julian Date:	113	Julian Date:	236
Seeding Rate:	80 lb/A	Soil Type:	Creston SiL
Previous Crop:	WW	Soil Test:	96-8-200
Tillage:	Conventional	Fertilizer:	235-40-60
Herbicide:	Huskie 11 oz/A + Axial 16.4 oz/A + NIS 1 qt/100 gal + UAN 28% 1 qt/A + Stinger 1/3 pt/A		
Insecticide:	Warrior II 1.92 floz/A	Fungicide:	Tilt at 4 oz

Table 2. Agronomic data from the evaluation of Western Regional Soft White Spring Wheat lines, Kalispell, MT - 2016

Cultivar	HD Julian	SR %	HT in.	LOD %	YLD ¹ bu/A	PRO ² %	TWT ¹ lb/bu	FN sec	PHS delta
UI Stone	170	28.3	37.4	0.0	136.2	10.37	61.8	330.8	99.3
12-SWW-052	174	15.3	37.1	8.3	128.6	11.49	59.9	308.4	158.2
IDO1405S	172	19.3	38.5	0.0	128.4	11.81	61.2	327.0	144.5
DH09X503-188-0	177	24.3	41.6	5.0	124.8	13.12	62.3	319.4	77.7
WA 8253	171	15.0	36.7	13.3	120.9	11.26	61.4	333.2	189.7
IDO1401S	168	30.0	35.7	1.7	120.8	11.28	61.5	322.8	105.3
IDO1403S	172	7.3	35.4	0.0	117.3	12.26	60.4	365.4	76.4
Treasure 40g	175	31.7	36.1	0.0	117.2	10.59	60.2	310.5	125.0
06PN3024-2	168	16.7	37.3	3.3	115.1	11.31	61.3	345.9	119.7
Treasure 60 g	175	38.3	35.6	0.0	111.7	10.80	59.7	313.3	117.6
WB6121	167	3.0	34.8	0.0	107.2	13.70	61.3	276.1	267.7
Treasure 80g	175	44.0	35.6	1.7	106.4	10.82	59.3	316.3	120.5
ALPOWA	176	63.3	34.8	1.7	100.5	11.68	62.0	366.6	64.6
LOUISE	173	21.0	39.3	63.3	95.9	11.57	60.7	307.6	130.5
WA 8254	171	33.3	34.3	16.7	91.6	10.09	60.9	306.5	117.2
DH09X101-41-0	175	54.0	37.0	0.0	77.1	11.12	61.4	329.1	79.1
Mean	173	27.8	36.7	7.2	112.5	11.46	61.0	323.7	96.5
CV	0.7	20.3	4.6	90.6	7.4	1.70	1.0	6.8	46.46
LSD	2.0	9.4	2.8	10.9	13.8	0.33	1.0	36.5	124.6
Pr>F	0.0001	0.0001	0.001	0.0001	0.0001	0.0001	0.0001	0.0033	0.0288

HD: heading date, SR: stripe rust, HT: height, PM: physiological maturity, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight, FN: falling number

¹ adjusted to 13% moisture.

² adjusted to 12% moisture.