

Project Title: Agronomic Performance Evaluation of Advanced Spring Wheat Experimental Lines.

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Objectives:

To evaluate advanced spring wheat experimental lines for agronomic performance and disease resistance in environments and cropping systems representative of northwestern Montana.

Results:

Temperature was near normal but precipitation was higher than average, particularly in June with a total of 8 inches. As a result, grain filling was longer than normal and maturity was correspondingly delayed. The wet conditions also resulted in moderate to severe stripe rust infestations in several entries, resulting in reduced yields. Yields ranged from 104.4 bu/ac (MT 0249) to 38 bu/ac (MT 0432) with an average of 71.5 bu/ac, which was lower than 2004 (93.2 bu/ac). Grain test weight (average 58 lb/bu) was also lower than the previous season (61 lb/bu) and ranged from 50.0 to 62.9 lb/bu. The low test weight was also attributed to stripe rust. Heading date ranged from Julian 171 to 180, generally one week later than previous year. Plant height was normal and averaged 33.5 inches. Grain protein averaged 12.6%, which was lower than the previous season (14.7%).

Summary:

While yields, test weights, and protein were poor, 2005 was ideal for evaluating disease infestations in spring wheat. The top yielding entries were generally resistant to stripe rust. MT 0249, MT 0476, MT 0413, BZ9M1024 and WPB Germany were the high yield entries (>95 bu/ac).

Future Plans:

Continue spring wheat evaluations for the purpose of identifying cultivars best suited for District 1.

Table 1. Agronomic data from the Advanced Spring Wheat Nursery grown at the Northwestern Agricultural Research Center Kalispell, MT.

Planted: April 20, 2005

Harvested: August 26, 2005

Entry	Cultivar	Yield bu/ac	Test weight lb/bu	Grain moisture %	Heading date Julian	Plant height in	Stripe rust	Protein %
							7/8/05 %	
15	MT 0249	104.4	59.5	14.3	174.0	33.3	5.7	13.4
49	MT 0476	101.1	58.0	14.5	177.3	34.9	3.3	11.7
32	MT 0413	100.8	60.8	15.0	174.3	34.1	1.7	12.5
54	BZ9M1024	97.4	60.3	14.7	175.0	33.6	5.0	12.1
53	WPB GERMANY	95.2	61.9	15.2	178.7	32.8	1.7	11.4
34	MT 0415	94.1	60.0	14.5	175.7	37.7	6.7	14.0
28	MT 0408	93.5	59.6	15.6	179.0	37.5	8.3	12.5
6	Reeder	92.4	59.0	14.6	174.3	35.4	10.0	13.5
35	MT 0416	90.7	59.5	14.7	175.3	32.7	33.3	11.9
64	BZ998447	90.5	58.9	14.7	173.0	33.2	6.7	11.2
33	MT 0414	90.1	59.6	15.5	175.7	36.1	8.3	14.3
56	FREYR	84.3	60.0	15.7	175.3	33.6	5.0	12.8
16	MT 0260	83.0	58.7	15.7	177.3	36.5	30.0	12.7
17	MT 0266	82.8	56.7	13.3	173.3	33.8	10.0	12.5
47	MT 0464	82.7	60.9	14.5	172.0	33.2	15.0	11.2
59	BUCK PRONTO	82.4	60.1	14.3	171.7	32.7	6.7	12.0
5	SCHOLAR	82.2	60.2	14.2	178.0	39.3	5.0	13.1
30	MT 0411	81.8	58.2	14.0	172.7	30.4	5.0	12.3
13	ALSEN	81.6	60.3	15.5	174.3	32.4	0.0	13.7
7	Conan	81.3	59.4	16.1	175.0	33.5	3.3	13.0
44	MT 0459	80.5	62.9	15.4	175.3	38.2	8.3	12.6
61	MTHW0202	80.2	59.7	13.4	172.0	31.4	6.7	12.1
27	MT 0405	79.8	59.8	13.9	174.3	32.3	15.0	12.3
26	MT 0401	79.0	59.0	14.0	174.0	32.9	6.7	13.8
12	KNUDSON	77.9	57.5	15.0	176.3	32.7	13.3	11.5
37	MT 0418	76.7	59.8	13.8	172.7	33.8	30.0	12.8
52	TRIPLE IV	75.6	58.4	13.2	172.3	32.1	5.0	11.1
24	MT 0342	75.3	59.5	14.0	175.0	33.5	16.7	11.7
31	MT 0412	75.2	57.1	13.9	173.0	32.2	26.7	12.6
2	FORTUNA	74.8	61.3	14.6	176.0	38.9	8.3	12.0
48	MT 0465	74.5	61.5	14.4	174.0	32.6	6.7	12.6
57	AGRIPRO5	72.4	60.6	14.7	175.3	36.1	46.7	11.0
14	MT 0245	72.4	56.1	14.8	176.3	33.9	10.0	14.0
8	HANK	71.5	55.7	13.4	175.3	31.1	8.3	12.4
10	CHOTEAU	71.3	58.1	15.0	175.7	30.7	11.7	13.2

Table 1 (Continued). Agronomic data from the Advanced Spring Wheat Nursery grown at the Northwestern Agricultural Research Center Kalispell, MT.

Planted: April 20, 2005

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Entry	Cultivar	Yield	Test weight	Grain moisture	Heading date	Plant height	Stripe rust	Protein
							7/8/05	
		bu/ac	lb/bu	%	Julian	in	%	%
58	BANTON	71.0	61.3	14.5	173.0	30.3	18.3	13.6
36	MT 0417	68.6	57.1	14.3	172.3	32.7	18.3	12.8
19	MT 0315	68.1	58.2	14.4	176.7	35.4	46.7	13.6
60	EXPLORER	67.7	57.8	13.8	172.3	31.0	11.7	13.1
22	MT 0325	67.1	59.8	14.7	175.3	34.1	13.3	12.9
62	MTHW0471	66.5	60.6	15.4	180.3	36.9	40.0	12.3
63	AGAWAM	66.1	61.4	15.0	172.3	29.8	8.3	10.8
50	SX1504B	65.3	57.7	13.6	178.0	27.6	8.3	11.8
51	BZ992592	64.7	57.5	13.9	176.3	33.3	6.7	12.2
23	MT 0336	63.5	57.4	13.9	174.7	35.8	53.3	12.3
4	ERNEST	61.8	57.8	14.8	176.7	38.7	40.0	12.9
18	MT 0313	61.5	58.8	13.9	176.3	35.9	30.0	13.0
46	MT 0461	61.3	58.3	15.0	178.0	37.4	40.0	12.7
55	BZ9M1044	61.2	58.7	13.7	174.3	27.4	11.7	12.1
9	OUTLOOK	61.0	54.8	13.1	179.0	32.4	13.3	12.1
11	NORPRO	59.0	52.2	11.2	176.0	30.7	36.7	13.0
29	MT 0410	57.2	55.0	14.1	176.3	36.3	46.7	13.0
40	MT 0425	56.3	51.7	12.7	173.3	32.4	60.0	12.7
25	MT 0345	54.2	55.6	13.1	177.3	30.9	46.7	13.1
20	MT 0318	49.0	56.3	13.4	175.3	31.9	56.7	13.8
21	MT 0319	48.1	56.9	13.3	175.7	33.3	63.3	13.6
1	THATCHER	48.0	58.5	14.7	180.3	43.2	46.7	11.8
45	MT 0460	46.8	54.6	13.2	176.0	35.1	56.7	11.4
38	MT 0421	46.3	52.9	13.0	176.7	30.1	50.0	12.8
3	MCNEAL	43.6	51.9	12.0	176.7	31.0	43.3	12.9
39	MT 0423	43.5	52.7	13.0	172.7	30.7	80.0	13.4
43	MT 0433	41.4	50.0	12.7	173.3	30.5	76.7	12.7
41	MT 0431	40.2	53.6	14.0	171.3	26.4	70.0	13.0
42	MT 0432	38.0	53.1	13.0	176.0	31.8	70.0	13.1
Mean		71.5	58.0	14.2	175.2	33.5	24.3	12.6
CV (%)		7.7			0.4	5.4	33.7	
LSD (0.05)		8.46			1.08	2.72	12.73	