

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

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Objectives:

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

Results:

Above average temperatures and relatively dryer conditions during the late grain filling period hasten crop maturity, resulting in early heading dates compared to previous years. Julian heading dates ranged from 167 to 176, and averaged 171. This compares with an average heading date of 178 for 2006. Plant height also was reduced, and averaged 32 inches compared to 38 inches for the previous year. On the plus side, the high temperatures prevented stripe rust from become a problem. However, the lack of disease infection was offset by a resurgence of the orange wheat blossom midge.

The combination of insect and weather related stress factors greatly reduced yields and test weights. Yields ranged from 39.6 bu/ac for Patwin to 67.5 bu/ac for MT 0617, and averaged 54.5 bu/ac. Test weights averaged 57 lb/bu and ranged from 51 to 60 lb/bu. The high temperatures did result in protein levels that were slightly higher than average. Protein content ranged from 15.0 to 18.3% with an average of 16.6%.

Summary:

Spring wheat yields suffered from the combined effects of heat, drought, and the orange wheat blossom midge. Vida, Reeder, and WPB Germany were some of the top yielding entries.

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 16, 2007

Harvested: August 6, 2007

Cultivar	Yield	Test	Grain	Heading	Plant	Protein
		weight	moisture	date	height	
	bu/ac	lb/bu	%	Julian	in	
MT 0617	67.5	58.5	8.5	168.4	30.5	16.0
VIDA	64.3	58.0	9.5	172.5	31.7	15.6
MT 0415	64.1	59.1	9.3	170.0	33.7	16.5
REEDER	62.8	57.0	9.0	171.0	32.6	16.4
MT 0663	62.5	57.6	10.3	171.4	33.2	15.8
MT 0414	60.8	56.9	8.8	169.1	35.2	16.6
MT 0608	60.2	57.8	10.3	169.7	34.1	16.8
MT 0657	60.1	55.2	8.3	171.8	31.3	16.6
MT 0416	60.0	58.3	10.5	171.7	31.4	16.0
WPB GERMANY	59.0	60.4	10.1	174.9	31.6	15.0
MT 0516	58.7	57.4	9.3	167.9	32.8	16.4
MT 0519	58.6	59.9	10.2	169.0	33.5	16.9
MT 0624	58.5	55.7	8.5	172.5	33.5	15.8
MT 0667	58.4	58.0	9.2	169.2	28.2	15.7
MT 0613	58.4	56.4	9.0	171.4	30.0	16.9
MT 0606	58.3	55.4	9.3	172.8	29.8	16.9
MT 0632	58.2	57.3	9.1	173.7	29.1	16.5
MT 0664	57.3	56.5	9.0	171.4	33.3	17.2
MT 0607	57.2	55.4	8.7	173.4	29.3	16.7
MT 0638	57.1	58.0	9.3	169.2	32.2	17.5
MT 0626	57.0	57.3	9.6	172.3	33.1	16.1
MT 0605	56.8	53.9	9.8	173.5	30.1	17.6
MT 0628	56.8	56.5	9.2	171.8	32.9	16.3
MT 0602	56.7	56.8	10.2	172.8	32.6	15.8
MT 0405	56.6	58.1	8.9	171.2	31.6	16.6
MT 0658	56.0	57.4	8.6	170.0	31.4	16.2
OUTLOOK	55.8	55.2	9.4	174.9	32.3	16.7
HANK	55.8	55.2	9.1	169.2	30.5	17.0
MT 0666	55.4	55.6	9.0	173.9	30.9	16.8
MT 0413	55.3	57.3	9.0	168.8	31.7	15.9
BZ999592	55.1	56.9	9.5	173.3	31.3	17.3
MT 0515	55.0	58.9	10.1	172.0	31.7	15.9
MT 0669	54.9	59.1	10.0	173.8	31.9	16.4
MT 0674	54.9	57.7	9.5	169.6	33.2	16.4
BZ9M1024	54.6	58.0	9.6	170.4	30.9	15.6

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

Planted: April 16, 2007

Harvested: August 6, 2007

Cultivar	Yield	Test	Grain	Heading	Plant	Protein
		weight	moisture	date	height	
	bu/ac	lb/bu	%	Julian	in	
JEDD	54.6	60.4	10.2	168.6	29.0	15.9
MT 0539	54.4	53.6	8.3	173.4	30.7	17.4
MT 0627	54.3	51.1	8.4	172.5	33.9	16.8
CLEAR WHITE	54.2	55.7	8.9	167.9	28.9	15.1
FREYR	54.1	59.5	10.5	171.1	33.6	16.0
MT 0640	54.0	58.5	10.2	168.0	33.1	16.7
AP604 CL	54.0	58.6	9.9	169.2	33.6	16.6
MT 0336	53.9	58.1	9.5	174.0	33.4	16.3
CORBIN	53.0	58.0	9.3	169.8	32.1	17.0
MT 0623	52.9	55.1	8.5	174.4	31.1	17.6
MCNEAL	52.8	56.2	9.0	174.5	32.2	16.5
MT 0659	52.4	56.7	8.9	172.9	31.7	16.7
MT 0614	52.3	59.6	10.1	171.6	32.9	15.7
FORTUNA	51.5	57.5	9.0	171.8	39.3	16.0
KUNTZ	51.4	58.7	9.9	173.9	29.2	15.8
BZ902413	51.0	58.8	10.3	168.9	31.5	15.9
MT 0631	49.5	56.8	9.2	170.8	31.0	17.0
NORPRO	48.4	57.8	9.5	173.7	29.2	17.3
MT 0550	47.7	59.3	9.7	167.4	33.0	16.2
MT 0643	47.2	57.7	9.0	170.7	30.1	17.2
CHOTEAU	47.2	58.3	10.5	171.3	30.6	17.1
KELBY	46.7	59.3	9.4	168.3	30.0	17.0
CONAN	46.2	58.0	9.7	172.3	29.6	16.8
ERNEST	45.7	58.8	9.8	173.9	35.1	17.1
MTHW0471	45.6	59.4	9.5	174.7	35.4	16.8
MT 0645	45.6	58.6	9.2	174.3	31.4	17.0
MT 0562	45.6	58.0	9.8	173.9	31.9	16.9
THATCHER	40.8	54.9	9.4	176.5	40.2	18.3
PATWIN	39.6	52.4	8.2	175.6	26.8	18.1
<b>Mean</b>	<b>54.5</b>	<b>57.3</b>	<b>9.4</b>	<b>171.6</b>	<b>31.9</b>	<b>16.6</b>
<b>C.V. (%)</b>	<b>8.2</b>			<b>0.6</b>	<b>3.5</b>	
<b>LSD (0.05)</b>	<b>5.66</b>			<b>1.37</b>	<b>1.62</b>	