

Project Title: Agronomic 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:

The average Julian heading date was 183 (July 2), which was four days earlier than the previous year. Heading dates ranged from 179 (June 28) for MTHW0771 to 190 (July 9) for BZ9M7106 (Table 1). Plant height was less than the previous year, averaging 31.5 inches in 2009 as compared to 33.3 inches in 2008. Thatcher was the tallest variety (43.4) and Jedd was the shortest (25.9).

Yields averaged 86 bu/A, with Agripr12, MTHW0771, Reeder, AP604 CL, and MT0414 producing 99 bu/A or more. It's worth noting that Reeder, AP604 CL, and MT 0415 have consistently ranked among the highest yielding cultivars for the past three years. BZ9M7106 was the lowest yielding entry, producing only 37 bu/A. BZ9M7106 also had the most midge larvae. Midge densities were low this year, averaging only 10 larvae per spike as compared to 66 larvae per spike during 2008. The low midge densities had minimal impact on grain yield, but test weight were reduced ($R^2 = 0.42$). BZ9M7106 had lowest test weight (54.6 lb/bu), while MT 0815 had the highest test weight (64.5 lb/bu). Protein levels were good and averaged 14.8% for the nursery. Protein ranged from a high of 18.9 for Jenna, to a low of 13.1 for MT 0813. Lodging was not observed.

Summary:

A late planting date plus dry conditions in May and June combined to reduce tillering, shorten plant height, accelerate plant development, and reduce yields. Midge damage hurt test weights, but only had a marginal impact on yield.

Future Plans:

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

Table 1. Agronomic data from the spring wheat advanced yield trial. Kalispell, MT, 2009.

Planted: May 13, 2009		Harvested: September 2, 2009							
Cultivar	Entry	Yield	Test weight	Grain moisture	Protein	Heading date	Plant height	OWBM dockage ¹	OWBM
		bu/A	lb/bu	%	%	Julian	inches	No/pan	No/head
AGRIPR12	59	105.7	63.5	12.7	14.0	183.0	27.2	5.0	12.3
MTHW0771	54	104.2	64.4	11.3	14.1	178.7	27.3	3.0	0.0
REEDER	4	100.7	62.5	13.0	14.8	185.0	33.7	4.0	0.3
AP604 CL	17	100.5	64.1	11.5	14.5	181.7	31.5	1.0	2.0
MT 0414	25	99.2	63.4	11.2	15.3	185.0	32.6	3.0	0.7
JEDD	13	98.4	63.8	11.7	14.9	181.0	25.9	5.0	0.7
MT 0869	52	97.6	62.7	11.1	15.6	183.7	31.4	9.0	0.3
CHOTEAU	6	96.6	62.7	10.7	14.7	182.7	30.6	17.0	10.0
BRENNAN	57	95.9	64.1	10.8	15.6	182.7	27.8	0.0	2.0
VIDA	7	95.7	61.4	12.1	14.1	183.3	32.0	4.0	1.3
ONEAL	12	95.6	61.5	14.5	14.2	185.0	32.0	7.0	37.7
MT 0815	35	94.7	64.5	11.5	15.2	181.7	34.3	4.0	18.7
MT 0807	31	94.6	64.0	10.7	14.5	180.3	33.2	3.0	0.3
MT 0814	34	94.3	62.9	11.0	15.9	181.3	29.9	4.0	15.0
AGRIPR11	58	94.1	62.9	11.9	15.3	183.3	31.1	8.0	10.0
MT 0873	53	93.8	63.2	11.9	14.5	184.7	30.2	3.0	1.0
MT 0855	47	93.1	61.6	10.9	15.2	181.7	30.7	1.0	6.0
MT 0827	39	92.7	62.9	10.9	14.7	182.3	31.8	4.0	0.0
MT 0813	33	92.6	64.1	11.0	13.1	178.7	29.9	5.0	0.0
HANK	8	92.2	62.2	11.8	14.0	181.0	30.0	2.0	3.7
MT 0862	50	92.1	62.4	10.2	14.4	182.0	29.0	8.0	11.7
MT 0847	43	91.4	63.2	11.1	15.3	184.3	31.2	6.0	7.0
CORBIN	10	91.2	63.4	12.2	15.0	182.7	31.8	4.0	1.0
MT 0735	20	91.2	62.7	10.9	15.2	181.3	32.0	2.0	0.7
MT 0801	29	90.4	61.7	10.9	13.7	183.3	33.1	2.0	0.0
MT 0824	37	90.1	61.7	11.6	14.2	183.3	30.4	2.0	10.3
MT 0856	48	90.0	60.8	10.5	15.2	181.0	30.2	2.0	4.3
MT 0832	42	89.8	62.0	11.0	14.2	182.3	30.3	4.0	6.3
MTHW0867	55	89.7	61.1	10.8	14.3	184.0	32.4	9.0	3.7
MT 0746	23	89.2	60.9	11.4	13.5	184.3	34.6	5.0	6.7
MT 0808	32	89.0	63.1	11.6	14.5	180.0	32.0	2.0	1.3
MT 0664	18	88.7	62.8	11.0	14.1	184.7	32.7	12.0	16.7
MT 0750	26	88.3	61.7	11.9	13.5	184.3	34.5	5.0	0.3
MT 0755	28	88.2	62.2	11.4	15.4	182.7	30.7	3.0	1.7
MT 0747	24	88.0	62.3	10.7	14.3	184.0	33.1	1.0	0.3
MT 0861	49	87.9	61.0	11.0	15.6	184.7	28.3	12.0	29.7

Table 1. Continued

Planted: May 13, 2009		Harvested: September 2, 2009							
Cultivar	Entry	Yield	Test	Grain	Protein	Heading	Plant	OWBM	OWBM
		bu/A	weight lb/bu	moisture %	%	date Julian	height inches	dockage ¹ No/pan	No/head
KUNTZ	16	86.7	63.4	11.3	14.0	184.7	28.9	9.0	9.7
MT 0830	41	86.5	63.0	11.3	15.5	183.3	29.9	4.0	8.7
MT 0816	36	86.3	62.1	11.0	16.9	179.7	28.7	5.0	2.0
JENNA	56	86.1	61.2	10.4	18.9	186.7	31.8	7.0	21.7
MT 0718	19	85.4	62.7	11.1	15.1	184.3	29.0	10.0	4.7
MT 0852	45	85.3	62.4	11.2	15.0	184.3	32.0	20.0	3.3
KELBY	15	85.2	64.0	10.5	14.3	182.0	28.7	0.0	0.3
FREYR	14	85.1	62.7	11.7	14.6	183.7	33.1	4.0	17.0
MT 0853	46	85.0	61.9	10.8	16.3	182.0	30.8	4.0	0.0
MT 0826	38	83.6	62.5	10.8	14.4	183.0	30.2	3.0	4.0
MT 0868	51	82.8	62.9	11.6	15.0	183.7	30.3	3.0	1.3
MCNEAL	3	82.5	61.9	10.5	14.2	185.0	31.2	5.0	33.0
MT 0751	27	82.1	60.8	11.2	14.9	183.3	32.7	2.0	14.0
MT 0802	30	80.3	59.0	14.6	14.8	185.7	32.7	18.0	70.7
MT 0849	44	79.4	61.1	11.3	15.3	183.3	30.0	7.0	4.3
MT 0829	40	77.7	61.7	10.7	14.9	182.0	30.2	12.0	8.7
VOLT	11	76.2	63.1	11.0	14.2	189.7	31.5	15.0	4.3
FORTUNA	2	75.9	63.4	11.3	13.8	183.7	39.8	4.0	1.0
MT 0744	21	75.4	61.2	12.4	14.6	185.7	34.8	7.0	33.0
MT 0745	22	74.8	61.6	12.4	15.0	184.3	30.3	10.0	4.7
OUTLOOK	5	74.4	59.5	10.1	14.5	185.3	32.6	5.0	16.7
BZ92413W	60	74.4	61.9	11.9	15.3	183.0	30.3	12.0	9.3
BZ92413R	61	73.2	61.5	12.6	13.4	184.0	30.0	12.0	23.7
MOTT	63	73.1	62.2	10.7	15.1	186.0	34.1	15.0	23.7
LILLIAN	64	69.2	59.6	10.6	15.2	187.0	39.8	30.0	16.0
CONAN	9	62.2	61.3	11.4	15.2	183.7	30.7	6.0	10.3
THATCHER	1	57.1	61.1	10.7	14.4	188.3	43.4	45.0	10.7
BZ9M7106	62	37.3	54.6	14.7	15.0	190.0	32.2	100.0	62.3
MIN		37.3	54.6	10.1	13.1	178.7	25.9	0.0	0.0
MAX		105.7	64.5	14.7	18.9	190.0	43.4	100.0	70.7
MEAN		86.41	62.18	11.41	14.8	183.48	31.5	8.52	10.04
PR>F (trt)		0.0001	NA	NA	NA	0.0001	0.0001	NA	NA
C.V.		8.89	NA	NA	NA	0.40	3.9	NA	NA
LSD 0.05		12.42	NA	NA	NA	1.21	1.98	NA	NA

¹Number of larvae found after processing grain samples with the dockage tester.