

Project Title: Evaluation of Advanced Spring Wheat Experimental Lines – 2012

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

Results:

Stripe rust was prevalent throughout the nursery and the average percent infection increased from 36% on July 1 to 72% on July 13. Volt, CAP 400-1 and Rockland exhibited the lowest level of stripe rust infection (5, 8, and 4% respectively on July 13) while AP604 CL was the most susceptible variety with a rating of 100 percent. Heading dates averaged 181 (June 28) while plant heights averaged 34 inches. Fortuna and Thatcher were the tallest varieties (43 inches) and Jedd was the shortest (27 inches). Lodging averaged 2 percent throughout the nursery with the majority of the plots exhibiting little to no lodging. MT 1173 was the cultivar that had the greatest percent lodging (58%). Cultivars that demonstrated a high level of stripe rust resistance yielded well in 2012 but those that had a low or no resistance experienced very low yields. Yields averaged 51 bu/A, ranging from a high of 89 bu/A for Volt to a low of 16 bu/A for Jedd. Test weight averaged 58 lb/bu ranging from a high of 63 lb/bu for Volt to a low of 51 lb/bu for Hank WHT1. Protein content averaged 14.3% with CAP 400-1 having the highest at 16.2% and CAP 197-3 the lowest at 13.0 percent. The number of orange wheat blossom midge per spike was down from 2011, averaging 1.8 midge per spike in 2012 compared to 80.79 midge per spike in 2011.

Summary:

Grain yield and quality was affected by stripe rust resistance. Volt, WB Rockland and Buckpronto were the top yielding commercial varieties.

Table 1. Material and Methods - Advanced spring wheat experimental lines - 2012

Seeding Date:	4/13/2012	Soil Type:	Creston SiL	Harvest Date:	8/29/2012
Seeding Rate:	80 lb/A	Soil Test:	124-18-144-30		
Previous Crop:	Alfalfa	Fertilizer:	138-0-75-14		
Tillage:	Conventional	Herbicide:	1.7 pt/A Wolverine		
Irrigation:	None	Insecticide:	None		

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

Cultivar	SR % 7/1	SR % 7/13	Heading Julian	Height inch	Lodging %	Yield bu/A	TWT lb/bu	Protein %	OWBM no./spk
VOLT	3	5	184	34	0	89	63	14.0	3
CAP 400-1	0	8	185	37	0	83	61	16.2	0
WB ROCKLANE	0	4	178	29	0	78	59	16.1	0
MT 1172	16	26	184	36	13	76	59	15.1	1
MT 1073	16	33	180	34	0	75	61	14.4	1
BUCKPRONTO	16	60	177	34	0	75	60	14.6	0
11FX MN	25	71	178	34	0	67	61	13.1	0
MTHW1064	31	73	181	36	0	67	59	13.1	8
MTHW1057	21	61	183	37	0	64	60	13.6	15
BRENNAN	43	79	178	32	0	63	61	13.6	1
REEDER	22	50	182	40	15	63	61	14.9	0
MT 1142	32	72	181	38	0	62	60	15.5	0
MT 1118	29	62	181	33	0	61	57	14.8	1
MT 1133	34	49	184	34	0	61	60	15.4	1
FORTUNA	35	73	183	43	5	60	61	13.2	2
AGRIPR13	42	87	177	38	2	59	60	14.4	0
KELBY	47	74	178	32	0	59	61	13.7	0
MT 1166	37	70	181	38	0	59	58	14.3	0
MT 1146	32	75	182	36	5	58	59	15.1	3
WB MAYVILLE	35	74	180	32	0	58	60	14.7	0
MCNEAL	14	62	184	37	0	57	59	13.8	1
MT 1120	43	69	182	35	0	57	58	14.4	0
DUCLAIR	22	66	181	35	0	56	57	15.2	3
MT 1106	22	60	184	35	0	55	59	14.5	1
WB GUNNISON	23	64	180	34	0	54	60	13.0	0
MTHW1150	21	65	185	38	0	53	60	14.1	6
MTHW1152	28	75	177	33	0	53	56	13.9	5
VIDAWHT1	23	61	183	36	0	53	59	14.8	5
MT 1016	33	77	183	37	7	53	58	13.4	2
MT 1156	47	93	180	32	0	52	58	15.2	1
SY SOREN	42	75	182	33	0	52	59	14.1	1
VIDA	28	58	183	35	0	52	58	14.9	1

Table 2. continued

Cultivar	SR % 7/1	SR % 7/13	Heading Julian	Height inch	Lodging %	Yield bu/A	TWT lb/bu	Protein %	OWBM no./spk
CAP 197-3	53	80	184	34	3	51	58	13.0	0
MT 1168	32	78	180	34	0	51	53	15.4	0
MT 1113	37	82	178	33	0	50	56	13.0	0
WB9879CLP	40	76	181	33	0	50	58	14.3	0
MT 1164	34	85	181	33	0	50	57	15.1	1
CHOTWHT1	43	85	179	34	0	49	56	15.0	0
MT 1112	37	76	179	35	0	49	55	13.8	1
MT 1154	46	81	182	35	0	47	57	13.2	0
CAP 34-1	63	88	181	31	0	46	56	14.1	0
MT 1108	45	83	181	30	0	46	57	13.9	1
MT 1103	30	58	185	33	0	45	59	14.3	2
CORBIN	36	82	179	35	3	44	57	14.6	3
MT 1157	48	94	182	33	0	42	58	13.9	1
MT 1119	53	92	179	35	0	42	55	14.6	1
MT 1002	27	59	184	35	1	42	57	14.2	1
CAP219-3	55	85	181	32	0	42	56	13.2	0
SY TYRA	47	91	181	30	0	42	54	13.7	2
MT 1008	34	64	184	33	0	41	57	14.4	2
CHOTEAU	39	76	183	32	0	41	57	14.4	0
VANTAGE	44	66	187	34	0	41	61	15.9	8
MT 1053	40	71	182	34	0	39	56	14.8	0
MT 1173	32	74	186	37	58	35	57	14.3	5
ONEAL	58	87	183	33	0	34	56	14.2	3
MOTT	50	97	186	36	0	34	59	13.5	4
CONAN	28	77	181	35	0	33	56	14.4	0
AP604 CL	65	100	179	36	0	33	54	13.2	0
MTHW1060	52	92	177	32	0	32	53	15.9	0
HANKWHT1	72	94	179	31	0	32	51	14.3	4
MT 1007	58	93	183	31	0	30	55	14.6	0
MT 1111	50	96	178	33	0	29	50	14.1	0
THATCHER	37	92	187	43	0	27	60	13.6	11
JEDD	55	98	179	27	0	16	53	14.2	0
Mean	36	72	181	34	2	51	58	14.30	2
CV	21.00	11.00	0.50	4.00	443.00	11.00	2.00	NA	NA
LSD	12.4	13.1	1.7	2.5	12.5	9.1	2.1	NA	NA
Pr>F	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	NA	NA

SR: Stripe rust, TWT: test weight, TKW: thousand kernel weight, OWBM: Orange wheat blossom midge, No./Spk: number per spike.