

PROJECT TITLE: Evaluation of Winter Wheat Lines for Disease Resistance.

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OBJECTIVES:

To evaluate new and existing winter wheat cultivars for agronomic performance and disease resistance in environments and cropping systems representative of northwestern Montana.

RESULTS:

Pythium appeared several weeks after winter dormancy had broken and developed aggressively. The symptoms were a severe yellowing of the plants and general lackluster appearances. A 1-3 rating scale with 3 being severe was used to quantify differences. All plots had considerable injury. Winter wheat yields ranged from a low of less than 60 bu/acre for Rampart and Morgan to highs exceeding 80 bu/acre for MT 9951, Blizzard, MTR 9997, Utah 100, Tiber, MT 9904, and MT 9982 (Table 1). All test weights were excellent with several weights exceeding 63 lbs/bu. Julian heading dates ranged from 150 days for Halt to 164 days for Norstar with a mean heading date of 157 days. Plant height ranged from 20.5 inches for Halt and NuHorizon to 38.3 inches from Norstar. Plant heights were less than previous years and there was no lodging in the trial. The nursery was planted on September 25, 2000 and harvested on August 16, 2001.

SUMMARY:

Despite limited precipitation during head filling, reserve subsoil moisture permitted good yields and test weights. Although most yields were good, several varieties exhibited superior yield performance and agronomic traits that may make them favorable choices for planting in northwestern Montana.

FUTURE PLANS:

Continue winter wheat evaluations for the purpose of identifying those cultivars best suited for production in District 1.

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

Cultivar	Yield	Test Wt	Heading Date	Height	Disease Score	Winter Survival	Protein
	Bu/A	Lbs/Bu	Julian	Inches	1-3	%	%
MT9951	89.4	62.3	160	29.5	1.3	100	12.3
BLIZZARD	88.0	62.4	159	27.1	1.3	99	13.5
MTR9997	85.6	62.8	159	26.8	1.7	100	13.7
UTAH 100	84.9	61.5	160	31.3	2.0	99	13.0
TIBER	84.9	63.1	160	31.9	1.3	100	13.4
MT9904	82.0	61.9	157	26.1	1.7	99	13.1
MT9982	80.9	62.3	160	26.9	1.0	99	12.7
MT9989	79.2	60.8	159	28.2	1.0	100	12.4
ELKHORN	78.7	62.1	161	33.7	2.0	98	13.1
BZ96-919	77.5	62.6	161	22.5	2.0	100	12.7
NORSTAR	77.1	62.8	164	38.3	2.0	100	12.7
GOLDEN SPIKE	76.9	62.3	161	28.5	1.7	97	12.3
JUDITH	76.6	60.8	158	26.9	1.3	98	12.8
MT9513	76.5	61.6	160	26.7	2.0	100	13.4
HARDING	75.3	61.7	158	26.1	2.0	99	13.4
BZ96-895	75.2	63.4	155	25.3	1.7	100	13.0
NEELEY	75.0	61.2	161	29.2	2.5	100	11.8
NUSKY	75.0	62.2	159	26.9	2.0	100	13.3
NUPLAINS	74.7	63.8	155	23.1	1.7	99	13.3
BZ97-761	74.5	62.1	158	27.5	1.3	100	13.1
MT9949	74.3	61.4	158	28.7	1.7	100	13.1
BIGHORN	73.9	62.8	160	23.3	1.7	99	13.4
N95L1229	73.6	61.9	157	23.7	1.7	99	13.2
BIG SKY	73.2	63.3	159	28.2	2.0	99	13.7
PROMONTORY	71.8	63.9	156	26.9	1.3	99	13.2
GARY	71.7	62.2	158	27.4	1.7	100	12.2
NUWEST	71.5	62.3	159	27.0	1.7	100	13.1
MT9929	71.4	62.6	158	24.8	1.7	100	13.6
MANNING	71.4	62.4	155	26.9	2.5	99	13.1
ERHARDT	71.2	63.0	157	25.2	1.5	100	14.0
WINDSTAR	70.2	61.8	156	27.2	2.0	100	13.2
DW RED	69.6	62.6	156	26.0	2.0	100	13.1
MTW9911	69.6	61.1	156	25.2	2.0	100	13.3
ROCKY	69.5	63.2	156	26.1	1.7	100	13.0
NUFRONTEIR	69.2	62.9	153	24.4	2.3	99	11.7
MT9909	68.9	61.5	158	24.8	1.7	100	13.4
PROWERS 99	68.5	63.6	156	25.6	2.0	100	13.3
HALT	67.9	61.7	150	20.5	1.0	100	13.4
QUANTU 542	67.8	62.8	154	27.9	1.3	100	14.2
MT9426	66.8	62.0	160	23.7	1.3	100	13.0
MT99116	66.5	61.7	157	24.4	2.0	100	12.9
VANGUARD	66.4	62.0	154	27.9	1.7	100	14.5
MCGUIRE	65.4	61.9	153	24.5	1.7	100	14.4

Continued

Table 1 continued. Agronomic data from the Intrastate Winter Wheat Nursery grown at the Northwestern Agricultural Research Center Kalispell, MT.

Cultivar	Yield	Test Wt	Heading Date	Height	Disease Score	Winter Survival	Protein
	Bu/A	Lbs/Bu	Julian	Inches	1-3	%	%
CULVER	65.3	61.6	152	25.1	1.3	100	13.8
CDC FALCON	62.5	60.8	157	21.7	1.3	100	13.0
RANSOM	61.1	61.7	158	26.0	2.0	100	13.3
NUHORIZON	60.0	62.9	152	20.5	2.0	100	12.9
RAMPART	59.8	61.6	155	26.4	1.0	100	14.2
MORGAN	59.6	61.8	162	25.8	2.0	99	13.4
Mean	72.8	62.2	157	26.5	1.7	99	13.1
Effic. Rel. RCBD	116.8	127.2	101.5	115.4	99.1		
LSD p=0.05	8.82	0.33	2.15	2.13	0.74	NS	
LSD p=0.01	11.69	0.44	2.84	2.82	0.98	NS	
C.V.	8	1	1	5	28	1	
Replicate Prob (F)	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	0.3975	
Treatment Prob (F)	<0.0001	<0.0001	<0.0001	<0.0001	0.0546	0.5334	