

PROJECT TITLE: Intra-State Winter Wheat Variety Performance

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Objectives:

To evaluate new and existing varieties and lines of winter wheat under dryland fallow growing conditions that occur at Bozeman, Havre, Sidney, Kalispell, Moccasin, Huntley and Conrad Montana.

RESULTS:

Grain yield, test weight, heading date, plant height, lodging index, and disease ratings are presented in tables 1, 2, 3, 4, 5, and 6 respectively. Lodging was evaluated at Bozeman, Sidney and Kalispell. Leaf diseases were rated Havre, Sidney, Moccasin, and Bozeman. Tan Spot ratings were done in the green house.

The 1993 growing season was generally cooler and wetter than the long term average. The effect of the cool wet growing season was diverse between locations and varieties. The cool wet weather may have reduced the stress on wheat streak infected plants while enhancing the infestations of other leaf diseases. Harvest delays due to wet weather contributed to reduced grain test weight and over all quality. The Sidney location experienced some winter kill.

SUMMARY:

The highest yielding varieties on a statewide average were Yuma, Blizzard, Promontory, and Neeley. Promontory had extremely yield at Bozeman (120.4 bu/a), but had moderate to low yields at the other locations. Test weights near average at Conrad and below average for the other locations. The over all state average test weight was 55.5 lbs/bu. Overall mean heading date was June 13. The Havre location had severe wheat streak mosaic infestations which provided an excellent opportunity to rate varieties on the ability to tolerate or resist the wheat curl mite carried virus.

FUTURE PLANS:

The Montana intra-state winter wheat variety trial will be continued.

Table 1 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE YIELD (bu/a) SUMMARY.

MONTANA AGRICULTURAL EXPERIMENT STATION											
Exp.35											
ID	PEDIGREE	BZMN	HAVRE	SDNY	KLSP	MOC.	HUNT.	CNRD	AVG	BYX	RSQ
CO850061	YUMA	79.1	31.4	35.6	69.6	65.4	61.1	60.2	57.5	1.24	0.74
PI512302	BLIZZARD	81.4	35.7	44.4	58.6	58.1	59.7	61.4	57.0	1.01	0.74
PI555458	PROMONTORY	120.4	19.6	25.2	57.7	55.7	60.6	56.7	56.6	1.99	0.55
CI 17860	NEELEY	44.0	23.4	50.0	73.6	67.4	69.3	61.1	55.5	1.06	0.54
CI 17441	VONA	89.9	28.5	31.0	58.2	57.6	58.9	56.9	54.4	1.37	0.66
ID 355	MC ² /NP82A/3/LMH66/S	60.3	32.2	40.1	61.2	58.1	62.5	58.7	53.3	0.92	0.88
PI477287	RAM	68.3	24.2	43.4	85.1	41.5	58.9	51.4	53.2	1.01	0.39
IDHW0355	2 ^{MC} /NP82A/3/LMH66/S	49.6	34.2	39.7	65.0	64.3	58.6	59.5	53.0	0.77	0.60
CO820009	LAMAR	69.4	33.8	33.7	69.4	54.7	55.4	53.5	52.8	0.91	0.57
CI 17846	MANNING	102.6	24.7	31.9	45.3	53.3	58.7	52.9	52.8	1.53	0.55
ND 8002	SEWARD	66.3	26.6	44.9	61.7	61.8	55.8	49.3	52.4	1.00	0.81
CI 17879	ROCKY	73.4	29.3	41.8	53.3	52.1	57.8	54.2	51.7	1.01	0.82
MT 8039	JUDITH	57.7	15.4	44.7	69.7	55.0	55.9	58.3	51.0	1.23	0.75
S86-736	S86-736	49.9	23.0	50.5	58.4	56.6	55.4	60.8	50.6	0.90	0.74
XNH 1609	HYBRITECH 1609	51.2	33.7	46.2	39.5	58.1	61.2	63.8	50.5	0.74	0.64
PI499376	LENORE/KS73164	77.5	26.1	42.7	38.0	55.4	62.1	49.0	50.1	1.15	0.70
MT 7811	FRD/WNK/MT6928/TDR	72.5	12.3	41.6	55.6	55.4	60.9	52.8	50.1	1.50	0.93
S86-15	KESTREL	50.6	25.7	55.1	48.9	55.5	54.8	59.4	50.0	0.77	0.70
RDW(SEL)	AC READYMADE	51.8	29.4	40.1	59.2	58.9	55.2	54.8	49.9	0.81	0.80
MT 8918	MT7673/MT7115	60.2	13.3	46.0	64.2	53.9	62.7	48.1	49.8	1.29	0.81
PI499375	KS73164/PI94424	76.3	15.9	38.3	56.7	53.0	52.9	51.0	49.2	1.37	0.82
CI 15075	CENTURK	68.0	24.0	37.5	62.0	51.2	55.2	46.3	49.2	1.04	0.73
PI557013	MERIDIAN	58.2	27.1	36.7	31.7	54.3	63.8	71.3	49.0	1.12	0.64
PI517194	TIBER	45.4	32.0	41.7	41.5	61.7	57.0	59.3	48.4	0.72	0.63
CI 17727	WESTON	81.2	21.5	35.5	39.0	44.8	57.7	51.1	47.3	1.27	0.67
MT 8909	MT8001/MT7673	50.0	18.2	40.7	49.9	58.2	60.7	51.3	47.0	1.11	0.91
MTSF2238	LEW/TBR//RDW	47.8	30.5	39.5	51.9	53.2	52.4	51.9	46.7	0.65	0.86
CI 17902	WINRIDGE	39.2	18.9	37.8	57.2	58.5	59.6	55.8	46.7	1.03	0.67
PI495594	TAM 107	64.0	34.2	35.9	45.4	38.0	60.7	46.2	46.4	0.68	0.50
MT 8949	RDW/FRD//RRI//TT//BURT	53.4	30.2	42.0	26.0	55.9	51.1	53.4	44.6	0.70	0.50
PI499377	MANNING/MT7579	81.7	19.2	21.6	40.6	47.3	50.9	50.7	44.6	1.40	0.66
MT 88030	HP340/NRS//MT7216(185	59.4	12.5	38.5	47.9	54.5	52.5	47.1	44.6	1.25	0.96
CI 17844	REDWIN	39.9	25.6	41.5	44.4	54.0	53.1	52.4	44.4	0.69	0.70
MT 8719	RRI/MT 6928	58.5	14.2	39.6	49.6	46.4	49.2	49.6	43.9	1.11	0.91
W235	PAU45/SUNDANCE	30.0	29.3	47.2	42.3	51.2	51.9	54.6	43.8	0.42	0.24
MT 88046	PMNS/MT77003//HP344/F	60.4	11.5	36.4	65.6	42.8	47.9	40.3	43.6	1.14	0.62
MT 8713	RRI/MT 6928	49.1	10.7	41.9	40.4	53.2	54.7	49.6	42.8	1.18	0.91
PI491533	NORWIN	59.4	10.0	44.2	31.0	45.7	54.9	45.3	41.5	1.21	0.80
PI518591	ARAPAHOE	41.1	25.6	39.8	40.1	36.0	52.4	54.2	41.3	0.59	0.55
CI 17735	NORSTAR	32.2	25.6	41.0	23.2	59.7	55.0	49.4	40.9	0.64	0.30
PI491532	CREE	16.1	30.3	43.6	30.8	52.8	55.3	56.1	40.7	0.32	0.06
CI 13670	WINALTA	28.2	13.7	41.5	35.1	55.5	49.4	43.8	38.2	0.80	0.49
MT 8957	RDW/FRD//RRI//TT//BRT	29.5	13.7	42.0	5.1	63.9	55.6	52.9	37.5	0.98	0.29
CI 17439	ROUGH RIDER	27.2	11.1	36.9	18.4	52.8	46.8	43.6	33.8	0.84	0.44
MTSF1142	LEW/TBR//RDW	20.7	16.4	21.5	13.8	52.7	52.8	53.8	33.1	0.88	0.32
PI478771	AGASSIZ	22.0	13.1	34.9	19.8	44.2	49.6	45.6	32.8	0.73	0.38
MT 88005	WSC/YOGO//RSC/3/TD25	10.5	11.2	40.0	10.7	44.4	45.7	43.3	29.4	0.55	0.15
***	SITE MEAN ***	55.9	22.7	39.6	47.0	53.7	55.9	53.0	47.0	1.00	1.00

Table 2 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE TEST WEIGHT SUMMARY.
Exp.35 MONTANA AGRICULTURAL EXPERIMENT STATION

ID	PEDIGREE	BZMN	HAVRE	SDNY	KLSP	MOC.	HUNT.	CNRD	AVG	BYX	RSQ
CO820009	LAMAR	59.2	54.9	61.4	53.7	58.0	59.2	62.3	58.4	0.51	0.89
CI 17441	VONA	59.7	52.0	62.5	49.7	58.7	59.0	62.6	57.7	0.83	0.93
CO850061	YUMA	58.7	52.0	61.5	50.9	57.6	57.8	63.5	57.4	0.75	0.90
MTSF2238	LEW/TBR//RDW	56.5	54.1	61.0	49.0	58.0	58.1	63.0	57.1	0.72	0.83
PI512302	BLIZZARD	58.8	51.4	58.4	52.0	58.2	60.1	60.6	57.1	0.62	0.92
PI495594	TAM 107	57.2	55.7	61.7	47.9	56.6	56.4	61.6	56.7	0.64	0.65
RDW(SEL)	AC READYMADE	54.5	49.1	60.2	50.6	59.7	60.0	61.8	56.6	0.85	0.94
W235	PAU 45/SUNDANCE	53.8	50.3	62.2	49.9	59.7	59.2	61.0	56.6	0.85	0.92
MT 8719	RRI/MT 6928	56.7	46.9	62.0	49.7	58.2	59.8	62.0	56.5	1.01	0.97
MT 88046	PMN6/MT77003//HP344/F	59.0	44.3	61.8	52.2	58.1	58.8	61.3	56.5	0.98	0.83
CI 17879	ROCKY	57.9	50.1	61.6	47.7	57.8	58.8	61.1	56.4	0.91	0.96
CI 17727	WESTON	62.7	47.0	60.0	45.7	59.1	60.2	59.7	56.3	1.09	0.84
ND 8002	SEWARD	56.7	48.2	60.4	52.5	58.0	57.6	60.6	56.3	0.73	0.91
IDHW0355	2*MC/NP824/3/LMH88/5	55.5	51.8	59.0	50.5	58.0	57.3	61.1	56.2	0.64	0.94
MT 88030	HP340/NRS//MT7218(185	57.0	44.9	61.7	50.1	58.2	58.6	62.0	56.1	1.05	0.94
ID 355	MC*2/NP824/3/LMH88/5	56.2	50.5	59.4	48.5	57.6	59.0	61.6	56.1	0.82	0.97
CI 13670	WINALTA	54.4	45.3	62.9	49.9	59.6	59.6	61.0	56.1	1.07	0.92
MT 8713	RRI/MT 6928	55.4	46.5	62.4	46.7	58.6	59.6	62.7	56.0	1.17	0.99
CI 17844	REDWIN	53.8	50.1	61.0	48.8	59.2	60.2	59.0	56.0	0.83	0.91
PI517194	TIBER	53.4	52.9	60.1	47.0	59.0	59.6	59.2	55.9	0.76	0.80
MT 8909	MT8001/MT7673	55.8	46.7	60.1	49.1	57.9	60.0	60.6	55.7	0.96	0.98
PI555458	PROMONTORY	62.4	44.0	58.9	45.2	57.3	59.0	62.3	55.6	1.23	0.85
CI 15075	CENTURK	57.7	47.8	60.6	48.5	57.9	58.4	58.4	55.6	0.87	0.95
PI477287	RAM	56.4	47.8	57.7	50.6	57.4	58.1	60.7	55.5	0.76	0.93
XNH 1609	HYBRTECH 1609	52.2	49.8	62.4	44.1	56.1	59.4	62.5	55.2	1.10	0.87
CI 17860	NEELEY	54.9	44.7	60.8	50.4	57.7	59.5	58.8	55.2	0.94	0.89
S86-15	KESTREL	53.5	46.9	60.6	46.8	59.1	59.8	59.6	55.2	1.04	0.97
PI491532	CREE	52.0	50.9	60.8	46.8	57.4	59.0	59.5	55.2	0.84	0.85
MT 8949	RDW/FRD//RRI//TT//BURT	54.8	50.1	61.6	37.6	59.5	60.4	61.1	55.0	1.36	0.83
PI491533	NORWIN	55.8	41.6	62.0	46.0	58.7	60.3	60.2	55.0	1.33	0.96
CI 17439	ROUGH RIDER	55.0	44.2	62.1	44.0	58.6	59.0	61.1	54.9	1.32	1.00
CI 17735	NORSTAR	54.1	48.2	61.4	43.3	60.1	58.5	57.8	54.8	1.09	0.90
S86-736	S86-736	52.5	47.1	60.7	45.0	59.1	58.1	61.3	54.8	1.12	0.95
PI478771	AGASSIZ	55.5	43.9	61.3	43.9	58.2	59.1	60.7	54.7	1.30	1.00
PI499375	KS73164//PI94424	57.3	44.2	57.4	48.6	57.4	58.0	59.9	54.7	0.96	0.91
PI557013	MERIDIAN	56.6	48.2	55.1	45.2	57.9	60.2	59.6	54.7	0.92	0.85
CI 17846	MANNING	61.0	44.7	58.0	42.9	57.3	57.8	60.4	54.6	1.20	0.87
MT 7811	FRD//WVK//MT6828//TDR	56.1	42.1	60.2	46.1	58.3	59.2	60.4	54.6	1.25	0.96
MT 8918	MT7673//MT7115	55.2	40.9	61.2	48.5	56.1	58.6	60.5	54.4	1.19	0.90
MTSF1142	LEW/TBR//RDW	52.4	48.0	59.1	40.1	59.6	59.4	62.1	54.4	1.29	0.89
PI499376	LENORE//KS73184	57.2	47.8	57.9	43.2	56.5	56.2	60.4	54.2	1.02	0.91
PI518591	ARAPAHOE	52.0	49.2	60.8	41.1	55.3	58.4	62.0	54.1	1.17	0.86
CI 17902	WINRIDGE	55.2	44.0	57.4	48.6	58.2	59.2	55.3	54.0	0.88	0.83
MT 8039	JUDITH	52.7	42.0	59.3	50.4	56.4	58.1	59.3	54.0	0.98	0.83
PI499377	MANNING//MT7579	59.0	42.8	56.1	44.1	56.7	58.8	59.4	53.8	1.16	0.88
MT 8957	RDW//FRD//RRI//TT//BURT	50.9	39.5	59.9	41.8	57.4	58.8	61.1	52.8	1.51	0.98
MT 88005	WSC//YOGO//RSC//3//TD26	47.0	41.2	60.7	38.1	57.5	58.3	60.6	51.9	1.59	0.93
***	SITE MEAN ***	55.9	47.4	60.3	47.2	58.0	58.9	60.7	55.5	1.00	1.00

Table 3 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE HEAD DATE SUMMARY.
Exp. 35 MONTANA AGRICULTURAL EXPERIMENT STATION

VARIETY/LINE	BZMN	HAVRE	SDNY	KLSP	MOC.	HUNT.	CNRD	AVG	BYX	RSQ
TAM 107	160.1	156.6	156.4	153.1	155.0	144.0	168.0	156.2	0.88	0.89
VONA	163.9	156.7	159.8	154.5	158.3	144.0	168.0	157.9	0.93	0.90
YUMA	164.2	157.3	161.2	154.2	156.7	144.5	169.0	158.1	0.95	0.89
HYBRITECH 1609	166.2	162.9	160.3	154.8	158.0	145.5	169.0	159.5	1.00	0.99
LAMAR	166.1	163.1	162.4	155.8	159.0	145.0	169.0	160.1	1.01	0.98
ARAPAHOE	164.7	163.7	160.8	157.7	157.7	147.0	169.0	160.1	0.89	0.97
MT 88046	166.1	168.5	160.4	156.3	158.7	146.0	170.0	160.8	1.05	0.96
RAM	167.6	165.3	161.6	158.3	161.3	147.0	170.0	161.6	0.97	1.00
CENTURK	167.5	167.5	161.5	159.2	160.3	147.5	171.0	162.1	0.99	0.98
ROCKY	168.2	166.4	162.2	159.6	161.3	147.5	171.0	162.3	0.98	0.99
JUDITH	166.5	168.6	164.1	158.1	161.7	149.0	171.0	162.7	0.94	0.97
MT 8713	167.0	170.4	162.8	158.8	162.0	148.0	170.0	162.7	0.98	0.96
MANNING	170.2	165.0	164.0	158.0	163.3	148.0	171.0	162.8	1.00	0.98
WESTON	169.3	164.1	165.6	159.6	162.3	148.5	171.0	162.9	0.94	0.96
PROMONTORY	170.2	165.6	164.7	158.3	163.7	146.0	172.0	162.9	1.11	0.98
MTSF2238	167.8	169.4	164.7	160.9	160.0	148.0	171.0	163.1	0.99	0.96
PI499375	170.0	168.7	165.5	160.3	161.0	148.5	169.0	163.3	0.95	0.95
PI499377	169.2	168.4	164.2	160.4	164.0	148.0	171.0	163.6	1.00	0.99
PI499376	168.9	168.7	164.7	159.8	162.7	150.0	171.0	163.7	0.92	0.99
MT 8719	169.4	170.0	164.4	160.0	164.0	150.0	172.0	164.3	0.96	0.99
MT 88030	168.7	176.2	164.1	160.0	162.0	148.5	171.0	164.4	1.07	0.87
TIBER	170.7	169.7	166.1	162.0	163.3	149.5	171.0	164.6	0.96	0.98
ROUGH RIDER	169.8	170.9	164.5	161.3	164.0	151.0	171.0	164.7	0.90	0.97
MT 7811	169.2	171.1	165.8	160.4	164.0	150.5	172.0	164.7	0.95	0.98
S86-736	171.0	166.2	165.3	160.8	166.3	151.0	172.0	164.7	0.89	0.96
REDWIN	172.3	169.4	164.3	162.0	163.3	150.0	172.0	164.8	0.98	0.98
WINALTA	172.7	171.0	164.8	160.2	164.3	150.0	172.0	165.0	1.03	0.98
ID 355	172.1	170.0	165.2	161.4	165.0	150.0	171.0	165.0	0.97	0.98
MTSF1142	170.2	169.6	166.6	161.3	164.0	151.0	172.0	165.0	0.92	0.99
KESTREL	170.6	167.8	166.1	162.6	165.7	150.0	172.0	165.0	0.93	0.98
AC READYMADE	170.6	170.2	165.2	160.8	163.7	150.0	175.0	165.1	1.05	0.99
MT 8949	171.0	169.7	166.7	161.6	165.3	150.0	172.0	165.2	0.97	0.99
MT 88005	172.8	171.7	164.4	160.9	164.3	150.5	172.0	165.2	1.01	0.97
MT 8957	169.9	170.8	166.0	162.0	165.0	150.5	175.0	165.6	1.01	0.99
NORWIN	171.4	171.8	163.3	160.4	165.0	151.0	177.0	165.7	1.09	0.96
W235	174.1	168.6	166.2	160.8	165.7	151.5	173.0	165.7	0.98	0.97
CREE	173.7	169.8	165.4	161.6	164.3	151.5	175.0	165.9	1.02	0.98
MT 8918	172.1	170.8	165.3	161.1	166.0	151.5	175.0	166.0	1.01	0.99
SEWARD	173.1	171.2	165.5	163.3	165.7	151.0	172.0	166.0	0.96	0.97
IDHW0355	173.3	168.6	167.3	162.8	165.3	149.5	176.0	166.1	1.10	0.99
BLIZZARD	174.4	170.8	166.4	163.1	165.7	150.0	175.0	166.5	1.09	0.99
NEELEY	174.4	171.1	165.6	161.6	167.0	150.5	176.0	166.6	1.11	0.99
MT 8909	174.0	171.3	167.8	160.8	167.3	151.5	175.0	166.8	1.05	0.98
AGASSIZ	174.2	170.8	166.5	161.1	166.3	152.0	178.0	167.0	1.10	0.98
WINRIDGE	176.0	169.8	169.2	163.9	166.3	150.5	176.0	167.4	1.10	0.97
MERIDIAN	174.7	170.2	168.0	165.0	167.7	152.0	179.0	168.1	1.08	0.97
NORSTAR	176.1	172.0	169.1	162.0	170.0	151.0	179.0	168.5	1.19	0.97
SITE MEAN	170.0	168.3	164.4	159.9	163.2	149.0	172.2	163.8	1.00	1.00

Julian calendar: 144 = May 24, 164=June 13, 179 = June 28

Table 4 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE PLANT HEIGHT
Exp.35 SUMMARY. MONTANA AGRICULTURAL EXPERIMENT STATION

VARIETY/LINE	BZMN	HAVRE	SDNY	KLSP	MOC.	HUNT.	CNRD	AVG	BYX	RSQ
NORWIN	36.7	21.6	27.2	31.5	25.7	24.0	29.0	27.9	0.60	0.92
TAM 107	40.9	22.2	27.9	36.4	21.0	26.2	28.0	28.9	0.87	0.92
MT 8713	40.4	20.9	31.0	36.7	25.7	27.4	27.0	29.9	0.82	0.97
YUMA	40.2	25.2	29.7	37.5	27.3	26.4	30.0	30.9	0.70	0.97
VONA	42.5	26.0	28.5	36.8	28.0	24.9	30.0	31.0	0.75	0.90
MT 88030	43.1	21.3	32.3	40.5	27.3	25.9	29.0	31.3	0.98	0.99
MT 88046	44.1	18.9	32.8	40.7	25.3	29.1	29.0	31.4	1.06	0.96
MERIDIAN	41.7	27.0	31.4	37.3	27.3	26.9	34.0	32.2	0.67	0.88
MT 8909	43.3	23.0	31.5	40.1	29.3	28.5	32.0	32.5	0.86	0.98
PROMONTORY	43.5	27.5	30.6	38.8	29.3	29.9	31.0	32.9	0.71	0.95
MANNING	45.1	25.3	31.6	40.0	28.7	29.5	30.0	32.9	0.86	0.97
PI499376	47.3	25.2	32.3	37.5	30.0	28.1	30.0	32.9	0.88	0.91
MT 8719	45.6	23.8	33.1	42.6	26.7	29.1	30.0	33.0	1.01	0.98
RAM	44.2	23.4	31.7	40.3	28.0	30.2	33.0	33.0	0.87	0.97
PI499377	45.3	22.4	31.0	43.3	28.0	30.5	32.0	33.2	1.01	0.98
MT 8918	46.3	20.8	33.5	43.3	30.0	28.8	31.0	33.4	1.08	0.98
MT 8957	45.7	19.7	33.7	44.5	29.7	30.4	30.0	33.4	1.11	0.96
ARAPAHOE	45.0	27.7	33.4	40.0	28.0	27.5	32.0	33.4	0.82	0.94
MTSF1142	46.5	20.2	34.9	43.2	30.0	29.0	32.0	33.7	1.10	0.98
HYBRTCH1609	44.9	27.0	34.5	40.7	31.3	28.5	30.0	33.8	0.81	0.95
JUDITH	45.9	21.0	35.1	44.0	29.3	32.2	34.0	34.5	1.03	0.95
MT 7811	45.8	19.2	34.2	44.6	32.0	33.1	34.0	34.7	1.05	0.90
LAMAR	47.8	29.0	33.2	45.9	29.7	29.5	30.0	35.0	0.99	0.93
NEELEY	48.2	26.4	35.0	45.3	29.7	30.6	31.0	35.2	1.03	0.98
MTSF2238	46.8	27.5	34.2	44.7	30.0	30.2	33.0	35.2	0.93	0.98
CENTURK	47.3	26.8	35.6	46.5	29.0	29.1	34.0	35.5	1.03	0.98
ROCKY	48.6	25.9	36.7	47.2	27.3	30.4	33.0	35.6	1.12	0.97
WINRIDGE	52.2	24.9	34.2	46.7	29.7	29.5	34.0	35.9	1.23	0.99
BLIZZARD	50.6	23.5	35.3	47.7	31.7	31.3	32.0	36.0	1.20	0.99
REDWIN	49.0	26.6	34.1	46.7	32.3	32.9	33.0	36.4	1.01	0.98
ID 355	50.9	28.0	34.8	48.4	28.3	32.5	33.0	36.6	1.13	0.95
AC READYMADE	48.7	24.1	35.4	46.5	33.0	31.0	38.0	36.7	1.05	0.96
PI499375	50.4	26.2	32.5	49.1	36.3	32.3	33.0	37.1	1.09	0.92
IDHW0355	50.0	30.6	36.3	47.8	28.7	32.4	35.0	37.2	1.01	0.93
S86-736	49.7	28.5	36.8	46.6	32.3	32.0	35.0	37.3	0.98	0.99
TIBER	49.6	28.6	36.3	47.2	34.3	31.7	34.0	37.4	0.98	0.98
WESTON	51.3	27.5	37.3	50.0	32.0	31.0	36.0	37.9	1.15	0.99
MT 88005	48.2	21.3	38.0	48.5	35.3	32.9	42.0	38.0	1.08	0.84
KESTREL	51.3	32.0	36.5	46.5	30.7	33.7	38.0	38.4	0.92	0.92
SEWARD	52.4	27.7	37.9	50.6	33.7	31.4	35.0	38.4	1.18	0.99
ROUGH RIDER	51.7	24.4	40.9	50.6	35.0	34.9	35.0	38.9	1.18	0.96
CREE	50.8	29.1	37.1	51.1	35.7	33.7	36.0	39.1	1.04	0.97
MT 8949	50.9	28.1	38.4	48.0	36.0	36.1	37.0	39.2	0.96	0.98
WINALTA	54.3	19.8	41.8	53.8	38.0	32.4	36.0	39.4	1.45	0.92
W235	53.5	29.3	38.4	52.5	32.3	33.8	36.0	39.4	1.20	0.98
AGASSIZ	50.9	22.6	39.6	52.2	38.0	34.3	39.0	39.5	1.19	0.90
NORSTAR	56.8	31.6	43.9	53.7	38.7	33.6	41.0	42.7	1.17	0.97
SITE MEAN	47.4	25.1	34.5	44.5	30.6	30.4	33.1	35.1	1.00	1.00

Table 5 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE LODGING INDEX SUMMARY

NONTANA AGRICULTURAL EXPERIMENT STATION. PEDIGREE BOZEMAN SDNY KALIS AVERAGE

ID	PEDIGREE	BOZEMAN	SDNY	KALIS	AVERAGE
MT 8039	JUDITH	0.0	0.1	0.0	0.03
MT 8713	RRI/MT 6928	0.0	0.6	0.0	0.20
MT 88046	PMNS/MT7003//HP344/FRD	0.0	1.0	0.0	0.32
PI557013	MERIDIAN	0.0	1.8	0.0	0.61
CI 17844	REDWIN	0.0	1.1	0.0	0.37
MT 8909	MT8001/MT7673	0.0	2.8	0.0	0.94
CO850061	YUMA	0.0	3.2	0.0	1.06
S86-15	KESTREL	3.3	1.5	1.1	1.98
PI495594	TAM 107	0.0	0.5	5.9	2.13
PI518591	ARAPAHOE	0.0	5.0	0.0	1.66
MT 8957	RDW/FRD//RRI/(TT/BURT*7)	0.0	5.5	0.0	1.83
MT 8949	RDW/FRD//RRI/(TT/BURT*7)	0.0	6.2	0.0	2.07
RDW(SEL)	AC READYMADE	0.0	6.2	0.0	2.06
PI517194	TIBER	0.0	4.9	4.6	3.19
PI491533	NORWIN	0.0	6.6	0.0	2.18
XNH 1609	HYBRITTECH 1609	3.3	3.5	0.0	2.25
MT 7811	FRD/WNK//MT6928/TDR	0.0	8.4	2.6	3.66
S86-736	VONA	0.0	4.5	3.3	2.60
PI555458	PHOMONTORY	0.0	9.1	0.0	3.03
MT 8719	RRI/MT 6928	0.0	2.0	16.1	6.05
PI499375	KS73164/PI94424	13.3	5.3	0.6	6.38
PI499376	LENORE/KS73164	13.3	0.5	0.0	4.60
MT 88030	HP340/NRS//MT7216(185)/RRI	0.0	12.8	10.9	7.90
PI477287	RAM	10.0	6.8	0.0	5.61
CO820009	LAMAR	3.3	6.7	23.7	11.2
MTSF1142	LEW/TBR//RDW	16.7	12.0	7.6	12.0
MT 8918	MT7673/MT115	10.0	1.7	26.3	12.6
MTSF2238	LEW/TBR//RDW	20.0	6.2	17.6	14.6
CI 17902	WINRIDGE	40.0	0.6	0.0	15.5
CI 17846	MANNING	20.0	10.5	16.5	15.6
PI512302	BLIZZARD	26.7	14.5	6.3	15.8
CI 17860	NEBLEY	36.7	11.7	1.5	16.6
MT 88005	WSC/YOGO//RSC/3/TD25	43.3	13.6	11.5	22.8
PI499377	MANNING/MT7579	40.0	18.7	10.4	23.0
ND 8002	SEWARD	30.0	15.1	32.1	25.7
CI 15075	CENTURK	23.3	13.6	41.1	26.0
ID 355	MC*2/NP824/3/LMH66/5	50.0	10.4	20.4	26.9
CI 17879	ROCKY	16.7	5.9	59.0	27.2
IDHW0355	2*MC/NP824/3/LMH66/5	66.7	13.4	4.7	28.2
CI 17727	WESTON	63.3	11.7	19.4	31.4
CI 17735	NORSTAR	40.0	13.7	56.8	36.8
W235	PAU 45/SUNDANCE	43.3	4.2	67.5	38.3
PI491532	CREE	43.3	17.3	56.4	39.0
PI478771	AGASSIZ	53.3	14.4	65.7	44.4
CI 17439	ROUGHRIIDER	50.0	21.0	69.2	46.7
CI 13670	WINALTA	60.0	36.9	80.1	59.0
*****	SITE MEAN *****	29.5	8.1	22.9	20.19

Table 6 1993 MONTANA INTRASTATE WINTER WHEAT TRIAL STATEWIDE DISEASE
Exp 25 RATING SUMMARY. MONTANA AGRICULTURAL EXPERIMENT STATION.

Cultivar Name	Havre Wheat Streak RXN	Sid Leaf Spot RXN	Moc Leaf Spot RXN	Boz Stripe Rust Read	Boz Ceph RXN	Tan Spot GH RXN
AC Readymade	LT	H	M	S+	L	H+
Agassiz	NT	H	M	M	M	H
Arapaho	LT	M-H	M-H	S+	H	H
Blizzard	LT	M-H	M-H	R	H	L-M
Centurk	LT	H+	H+	S	H	H
Cree	MT	H	H	S+	H	H+
ID 355	HT	H	H	M	H	-
IDWH 0355	HT	H	M-H	R	-	-
Judith	NT	M-H	H	S+	H	H+
Kestrel	MT	M	?	S	M	L-M
Lamar	MT	M-H	M-H	S+	H	H
Manning	MT	M-H	L-M	R+	L	H
Meridian	HT	M-H	L	HS	-	-
MT 7811	NT	M	L	S	M	L-M
MT 8713	NT	H	H+	S+	M	L
MT 8719	NT	M-H	H	S+	M	L
MT 8909	NT	M	L	S	H	H+
MT 8918	NT	M-H	M	MS	L	H
MT 8949	MT	M	M	S	L	L-M
MT 8957	NT	H	M-H	S+	M	H
MT 88005	NT	M-H	H	S+	H	L
MT 88030	NT	H	H	MS	-	-
MT 88046	NT	M-H	H	MS	-	-
MTSF 1142	NT	M	H+	S+	H	H
MTSF 2238	HT	M-H	H	S+	M	H+
Neeley	MT	M-H	M-H	M	H	H
Norstar	LT	H	H	S	L	L-M
Norwin	NT	H	H	M	M	L-M
PI 499375	LT	M-H	H	M	H	L-M
PI 499376	HT	M	M	MR	-	H+
PI 499377	LT	M-H	M	R+	M	-
Promontory	MT	M	H	R+	L	L-M
QT 542	MT	H	H	S	H	L-M
QT 542-F2	LT	H	M-H	MS	H	L-M
Ram	LT	H	H	R	M	L-M
Redwin	LT	M-H	L-M	S+	H+	H
Rocky	LT	H	H	S	H	H+
Roughrider	NT	H	H	S	-	L-M
S86-736	MT	M	M-H	S	-	-
Seward	MT	H+	M-H	MS	M	L-M
Tam 107	MT	H	H+	S+	H+	L-M
Tiber	HT	M	L-M	S+	H+	L-M
Vona	MT	M-H	H	S	H+	L-M
W 235	MT	H	H	S	H	L-M

continued . . .

... table 6 continued

Cultivar Name	Havre Wheat Streak RXN	Sid Leaf Spot RXN	Moc Leaf Spot RXN	Boz Stripe Rust Read	Boz Ceph RXN	Tan Spot GH RXN
Weston	MT	H	M	R+	H	L-M
Winalta	NT	H	H	MS	H	L-M
Winridge	LT	H	L-M	RHS	M	-
XNH 1609	HT	L-M	M	S+	-	-
Yuma	MT	M-H	H	S+	H+	H

Disease readings:

Wheat Streak

- NT - No Tolerance to either the mite and/or the virus
- LT - Low Tolerance to either the mite and/or the virus
- MT - Moderate Tolerance to either the mite and/or the virus
- HT - High Tolerance to either the mite and/or the virus

Other Disease Reactions:

- Sidney - Tan Spot with some Septoria
- Moccasin - Septoria with some Tan Spot

- 0.0 - No Disease
- 0-L - Very Low Level of Disease
- L - Low Level of Disease
- L-M - Low to Moderate Level of Disease
- M - Moderate Level of Disease
- M-H - Moderate to High Level of Disease
- H - High Level of Disease
- H+ - Very High Level of Disease

Rust Readings

- S+ - Very Susceptible
- S - Susceptible
- M-S - Moderately Susceptible
- M-R - Moderately Resistant
- R - Resistant
- R+ - Very Resistant
- HS - Hypersensitive Reaction

Note: Differences in disease readings maybe due to one or all of the following:

- 1: Environmental differences
- 2: Differences in the race or isolate of the pathogen
- 3: combination of 1&2
- 4: Planting mistakes