

PROJECT TITLE: Intrastate Winter Wheat Nursery

PROJECT LEADERS: Bob Stougaard and Doug Holen, NWARC-Kalispell, MT.
Phil Bruckner and Jim Berg, Plant Sciences, Bozeman, MT.

OBJECTIVE:

To evaluate Montana adapted cultivars and experimental lines for yield, lodging, quality, and disease resistance. With special attention and documentation given to dwarf bunt, stripe rust, and leaf rust reactions which are common production concerns in northwest Montana.

RESULTS:

Rhizoctonia Root Rot (Bare Patch) was identified in April throughout the nursery. Approximately 20% of the nursery area was affected, resulting in yields 50% of normal. Injury symptoms were expressed as thin stands, reduced height, hastened maturity, and poor seed fill. True varietal resistance is not believed to exist and was not witnessed to any degree. Moderate to high infestations of Tan Spot were documented in May which also contributed to the low yields. MTW9441 displayed good resistance to Tan Spot while Promontory, Neeley, Windstar, Morgan, Utah 100, Norstar, and Redwin were identified as highly susceptible. Documentation of genetic TCK responses was not possible as winter conditions were not conducive for spore germination and plant infection. Leaf and Stripe Rust were also absent in 1998.

SUMMARY:

The severity and randomness in which Rhizoctonia appeared across the nursery made measurements and determinations difficult. Yields ranged from 71 to 42 bu/A while test weights dropped from 60.7 to 54.3 lbs/bu. Winter and growing season climatic conditions were not conducive for the targeted disease documentation.

FUTURE PLANS:

Winter wheat cultivars will continue to be evaluated at Kalispell to identify those with high yield potential and needed disease resistance for production in this region as well as across the state.

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

Planted: September 25, 1997

Harvested: July 31, 1998

VARIETY	YIELD	TEST WT	MOIST	HD DATE	HEIGHT	LODGE	RHIZOCT	TAN SPOT
	BU/A	LB/BU	PERCENT	JULIAN	INCH	0-9	PERCENT 1/	0-3 2/
H1881	71.41	57.49	12.33	141.67	32.70	.00	18.33	1.00
QT 542	64.85	58.66	13.33	145.00	37.93	.67	10.00	2.00
XNH1824	64.81	58.29	12.63	141.67	31.10	.00	21.67	1.33
MT 9409	62.63	57.69	12.40	148.00	32.03	.00	15.00	2.33
NUWEST	62.20	59.55	13.00	150.33	35.80	.00	8.33	1.00
MTS9720	61.33	58.62	12.60	151.33	37.30	.33	13.33	2.00
MTS9719	60.98	58.65	12.23	152.33	38.03	.00	11.67	2.00
PROMONTORY	59.38	58.45	12.00	146.33	31.50	.00	18.33	3.00
TIBER	59.11	59.00	12.40	149.33	36.37	.33	28.33	2.00
ROCKY	59.09	58.62	12.43	145.67	36.37	2.33	15.00	1.33
AKRON	58.50	57.67	13.40	144.00	32.17	1.33	15.00	1.00
NEELEY	58.44	57.41	12.50	152.67	34.40	1.00	28.33	3.00
WINDSTAR	58.44	57.68	11.63	145.67	33.23	.00	11.67	3.00
MTW9441	56.98	58.33	12.93	151.00	35.17	.00	21.67	.67
MT9524	56.94	60.48	13.03	148.00	37.67	.00	23.33	1.00
NIOBRARA	56.88	56.90	12.20	140.67	32.43	1.00	21.67	1.33
MT9514	56.37	57.43	13.07	149.67	34.90	1.00	26.67	1.67
HALT	56.27	56.43	11.33	140.00	30.43	.67	11.67	1.00
BLIZZARD	56.05	58.99	11.70	150.67	34.17	.67	26.67	2.00
ELKHORN	55.66	58.90	12.33	153.67	40.57	2.33	18.33	2.00
RAMPART	55.55	58.45	12.50	146.33	33.33	1.67	13.33	2.00
JULES	55.53	56.78	12.37	146.33	30.97	1.00	40.00	2.00
ALLIANCE	55.38	57.17	11.83	139.00	29.67	1.00	23.33	1.33
MANNING	55.29	55.93	11.00	146.67	31.50	.33	31.67	1.33
KESTREL	55.03	56.37	12.33	149.33	34.37	.67	26.67	2.67
JUDITH	54.95	56.82	12.53	146.00	33.33	.33	25.00	1.67
BOUNDARY	54.13	54.33	10.97	149.67	29.10	.00	30.00	2.00
MT 9432	54.11	59.91	12.90	148.33	37.27	.00	15.00	1.00
PRONGHORN	53.99	58.57	13.13	142.33	34.90	2.33	15.00	1.67
BIGHORN	53.55	57.46	13.03	148.67	28.73	1.33	30.00	1.00
MORGAN	53.53	59.48	12.90	152.00	33.60	1.33	13.33	3.00
CRIMSON	53.51	60.68	12.93	147.33	34.27	.00	21.67	1.00
UTAH 100	53.49	59.00	12.03	150.00	35.30	.00	18.33	3.00
TANDEM	53.47	57.96	12.07	142.67	34.00	1.00	28.33	1.00
NEKOTA	53.43	57.20	12.10	140.00	29.67	.00	33.33	1.33
ND9272	53.38	57.72	12.23	145.67	31.50	.33	25.00	2.67
NORSTAR	53.15	60.04	13.53	156.33	44.20	3.00	11.67	1.00
ROUGH RIDER	53.00	59.59	13.80	148.67	41.60	3.00	13.33	3.00
SD93267	52.76	58.82	13.13	141.67	35.97	1.00	21.67	1.67
ID479	52.46	58.01	11.73	145.67	35.03	.67	18.33	1.33
VANGUARD	52.36	57.94	11.93	145.33	32.97	1.00	31.67	1.33
ND9257	52.04	56.87	12.50	148.00	32.83	1.67	30.00	2.00
REDWIN	52.02	58.25	12.53	148.00	38.17	.00	15.00	3.00
SD93380	51.79	56.93	11.93	143.33	32.43	.33	21.67	2.00
S93-7	51.57	57.99	13.30	142.67	33.10	1.67	31.67	1.00
SD92107	49.16	56.30	12.43	147.00	34.13	.00	20.00	1.33
MCGUIRE	47.24	58.34	12.77	143.67	32.83	.00	25.00	2.67
S86-1533	46.35	56.78	12.23	146.00	29.90	1.00	51.67	2.67
ERHARDT	42.53	59.80	12.80	147.33	31.50	.00	28.33	1.67

MEAN	55.54	59.06	12.47	146.77	34.09	0.74	21.94	1.80
C.V.	11.45		2.03	0.26	2.57	37.70	35.57	11.24
LSD (.05)	10.30		0.71	1.05	2.46	0.78	21.91	0.57

1/ Rhizoctonia rated as percent of plot affected
2/ Disease rating 0=Highly Resistant, 3=Highly Susceptible