

PROJECT TITLE: Intrastate Winter Wheat Evaluation: Lodging and disease resistance.

PROJECT LEADERS: Bob Stougaard and Doug Holen, NWARC, Kalispell, MT. Phil Bruckner and Jim Berg, PS&ES, Bozeman, MT.

OBJECTIVE: Evaluation of Montana adapted cultivars for yield, quality, and disease resistance. Special attention to dwarf bunt, stripe rust, and leaf rust.

RESULTS: Yields for the 49 entries ranged from 120.3 (Dynamic I) to 71.7 (Roughrider) bu/A, with a mean of 93.2. Test weights were good with a mean of 61 lb/bu and several above 62. Winterkill caused no significant stand reductions while spring water runoff did. Proteins were quite low with yellowbelly in many of the harvested plots. Overall lodging was minimal with the exception of Roughrider, Agassiz, Elkhorn, Norstar, and BZ9W92-712-b. Most of the top yielding cultivars were tolerant or resistant to stripe rust which blew through hard. Much of the surviving leaf material was then hit with leaf rust. Only eight of the 64 entries demonstrated no or low infestation levels to the rust combinations.

SUMMARY: Early and severe disease pressure with some water stress during early to mid grain fill resulted in considerable yield loss in 1996.

FUTURE PLANS: High yielding disease resistant cultivars will continue to be evaluated at Kalispell to identify those with the best potential for production in this region.

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

Planted: September 28, 1995

Harvested: August 16, 1996

VARIETY	YIELD BU/A	TEST WT LB/BU	PROTEIN PERCENT	HEIGHT INCHES	HEADING DATE	LOGGING 0-9	STRIPE RUST 1/RUST 2/	LEAF
DYNAMIC I	120.27	58.40	10.2	40.8	167.67	.00	1.00	1.00
PROMONTORY	117.33	62.50	9.9	36.1	166.00	.00	1.00	2.00
MANNING	113.70	60.00	9.4	37.1	166.00	.00	1.00	3.00
HYBRITECH 542	112.03	62.00	10.6	43.3	165.00	1.00	1.00	2.00
JUDITH	110.50	59.90	10.2	40.9	167.33	.00	1.00	2.00
BLIZZARD	108.50	62.50	11.5	46.1	168.67	2.00	1.00	2.00
NEELEY	106.83	62.40	10.2	43.7	167.67	.00	1.00	3.00
MT 91192	106.37	60.50	10.6	39.9	168.00	.00	2.00	3.00
ROCKY	106.00	62.00	10.4	43.1	166.33	.67	2.00	1.00
WINRIDGE	102.13	61.20	10.8	46.9	171.00	.00	1.00	1.00
BIGHORN	101.97	60.70	10.1	35.6	167.33	.00	1.00	1.00
NUWEST	100.23	60.80	10.5	42.9	167.33	.00	1.00	2.00
CENTURK	100.13	61.30	10.1	44.8	165.33	1.67	2.00	1.00
DYNAMIC II	99.93	58.30	11.2	37.8	169.33	.00	1.00	1.00
KESTREL	99.63	59.90	9.8	43.8	169.33	.00	2.00	1.00
MERIDIAN	98.10	60.60	10.3	34.9	168.33	.00	1.00	3.00
MT 9222	98.10	61.30	11.2	40.2	166.00	.00	3.00	3.00
BZ9W92-712-b	95.83	63.30	11.0	43.7	167.33	4.00	1.00	1.00
BONNEVILLE	95.80	63.40	12.1	48.6	169.33	.33	1.00	2.00
MT 9441	95.70	60.00	10.8	42.4	169.33	.00	1.00	2.00
QUANTUM 547	95.47	59.50	10.2	37.5	164.33	.33	3.00	1.00
MT 9432	95.23	62.70	11.5	44.1	167.00	.00	3.00	1.00
VISTA	95.13	61.40	11.6	34.0	163.33	.33	2.00	1.00
YUMA	94.07	60.90	9.4	33.7	163.33	.00	3.00	1.00
NORWIN	93.77	62.00	10.4	30.1	170.00	.00	3.00	2.00
VANGUARD	93.57	61.70	10.7	42.5	166.67	.33	3.00	2.00
HALT	93.27	59.90	11.2	31.2	163.33	.00	3.00	1.00
S89-142	92.97	61.50	11.0	41.3	170.00	2.33	1.00	1.00
RAMPART	92.37	61.70	11.2	43.2	166.67	1.00	3.00	1.00
ERHARDT	90.97	62.80	12.1	40.7	168.00	.00	1.00	1.00
AC READYMADE	90.83	62.20	12.1	45.1	167.67	.00	3.00	3.00
MCGUIRE	88.27	62.20	12.4	39.9	164.67	.00	3.00	1.00
TIBER	88.07	62.40	11.1	47.9	168.67	.00	3.00	1.00
ALLIANCE	87.07	59.60	9.0	36.2	162.67	.67	3.00	1.00
NIOBRARA	86.73	58.40	9.3	38.1	163.00	.33	3.00	1.00
AKRON	86.20	58.10	9.8	38.2	164.67	.33	3.00	1.00
JULES	86.07	57.40	8.8	37.4	168.33	.67	3.00	1.00
QUANTUM 566	84.10	59.60	10.4	39.4	165.33	1.00	3.00	1.00
GARLAND	80.80	58.20	10.8	24.0	167.33	.00	3.00	3.00
REDWIN	80.77	62.20	11.6	46.1	167.33	.00	3.00	1.00
MT 9453	79.13	61.40	12.1	41.7	168.33	.00	3.00	3.00
NORSTAR	78.10	62.50	11.0	56.2	171.67	6.67	1.00	1.00
ELKHORN	77.97	61.50	11.2	51.4	168.33	4.33	2.00	1.00
NEKOTA	77.37	60.90	11.2	34.8	162.67	.00	3.00	1.00
BZ9W92-712-a	76.00	63.00	11.8	33.6	167.33	.33	1.00	1.00
AGASSIZ	74.93	62.00	10.8	53.1	167.67	5.33	3.00	2.00
QUANTUM EXP. 1643	74.00	57.60	9.8	37.7	167.33	.00	3.00	1.00
IKE	72.33	60.90	11.3	34.1	163.33	.00	3.00	1.00
ROUGH RIDER	71.67	62.00	11.2	51.6	168.00	4.00	3.00	1.00
MEAN	93.19	61.00	10.7	40.8	166.93	.77	2.10	1.50
C.V.	11.06	NA	NA	.6	.63	95.13	NA	NA
LSD (.05)	16.71	NA	NA	2.0	1.71	1.19	NA	NA

1/ DISEASE LEVELS: 1=LOW, 2=MODERATE, 3=HIGH