PROJECT TITLE: Winter Wheat Evaluations

YEAR/PROJECT: 1991/756

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OBJECTIVE: To evaluate winter wheat varieties for adaptability, yield, quality and disease resistance.

RESULTS: Dwarf bunt (TCK) was light in both the hard red and soft white varieties even though the period of continuous snowcover was conducive for that disease (52 days). TCK was more prevalent in the Intrastate Winter Wheat Nursery. Winter survival averaged 95% in winter wheat plots this season.

SUMMARY:

- 1991 Western Regional Hard Red Winter Wheat Nursery -

The average yield for the Hard Red Wheat Nursery was 95.4 bu/A which is 7 bu/a higher than the long term average of 87 bu/A. The dry seedbeds in September did not hinder the further development of winter wheat. All test weights were above 60 lb/bu and the average was 61.7 lb/bu. The heading date average was 6 days earlier than last year. Winter survival averaged 95.5% for the 35 entries. Lodging and dwarf bunt incidence were very slight.

- 1991 Western Regional Soft White Winter Wheat Nursery -

1991 yields were slightly above average yet lower than the 1990 production. The average yield for the 1991 Soft White Wheat Nursery was 104 bu/A. Twenty-one of the forty entries yielded higher than 100 bu/A. Test weights were generally above 60 lb/bu and the mean test weight was 60.9 lb/bu. The top yielding entry, WA 7431, had the lowest test weight of 56.55 lb/bu. In most cases percent winter survival was above 90%, except for two Corvallis selections (OR 8833765 and OR 832784), and Elgin. TCK incidence was very slight and was not found in levels higher than .75%.

- 1991 Intrastate Winter Wheat Nursery -

TCK severity varied from 1.75% (Bighorn) to 10.75% (Norwin) in susceptible varieties. Blizzard and Winridge were the only two varieties that had no TCK infection. No stripe rust was observed in the nursery. The mean yield was 95.24 bu/A with half (51%) of the thirty-nine varieties yielded over 100 bu/A. Judith had the high yield of 128 bu/A. Test weights did not vary extremely from the mean (60.7 lb/bu) except for Tiber and Hybritech QT-2 (62.03 and 62.23 lb/bu, respectively). Lodging was severe throughout the nursery and may have contributed to lower yields in several varieties.

Table 1. Agronomic data from the Western Regional Hard Red Winter Wheat Nursery grown on the Northwestern Agricultural Research Center in Kalispell, MT. Planted: September 21, 1990 Harvested: August 15, 1991 Field E1

CI or State #	VARIETY	YIELD BU/A	TEST WT LB/BU	HEADING DATE	HEIGHT IN	%WNTR SURVL	LODGING INDEX /1	% TCK SMUT
ID 361	CNN//7*LEE/TF/5/SM4/	115.25	61.83	162.25	35.43	96.25	.00	.25
OR830027	PMF//CNO S/GLL	113.50	62.28	158.50	42.32	96.25	.00	.00
IDHW0355	2*MC/NP824/3/LMH66/5	112.59	61.90	159.75	45.28	95.00	.00	.00
OR861555	VS 74-709/BUC	112.51	60.25	160.75	35.43	97.25	.00	.50
OR841708	CER//YMH/HYS	108.53	60.52	163.25	37.89	97.25	.00	.25
UT 211	1784-211/ARBON/ID 51	107.19	60.50	158.50	39.37	99.75	.00	.25
OR 8522	VORO/MNIM,85B-839	105.36	61.20	161.25	33.46	97.50	.00	.00
ID 355	MC*2/NP824/3/LMH66/5	104.55	62.05	160.00	42.81	96.00	.00	.00
OR832306	TJB368-251/BUC	104.34	60.18	159.00	33.46	96.25	.00	4.00
WA 7680	UT122275/N7800501	104.21	63.10	158.75	44.29	96.25	.00	.25
UT 303	1257-6/MNG	103.59	62.52	157.25	35.93	97.00	.00	.25
UT165093	ID 51022/MNG	103.47	60.65	160.75	37.40	95.00	.00	.00
WA 7678	CI 14484//BNK/GNS/3/	99.85	63.23	160.25	40.35	91.25	.00	2.75
WA 7679	N823105/N8106201	99.00	62.05	160.00	41.83	95.00	.00	.75
UT162334	BEZ1/MNG/3/HNL//IT/P	98.64	61.78	160.50	34.45	97.25	.00	.00
ID 421	A74125W-16-3-1/A7470	98.09	61.90	162.25	45.77	97.25	.00	.00
CI 13844	WANSER	98.00	62.50	158.50	45.77	94.75	.00	.25
OR860455	GOV//PCI/VEE	95.83	60.47	162.25	34.94	91.25	.00	.25
UT 190	AG POD/WHEAT	95.13	61.73	160.75	37.40	98.50	.00	.00
QT 555	HYBRITECH	94.90	61.52	156.75	33.46	96.00	.00	.75
ORCR8601	PMF//CNO S/GLL	93.95	62.08	156.00	39.86	96.00	.00	1.25
XNH 1401	HYBRITECH	92.75	63.17	155.00	39.86	92.50	.00	.50
ID 422	CNN/LEE*7/TF/5/SM4/4	91.88	61.45	161.50	34.45	95.00	.00	.00
DS 00001	BLIZZARD S	90.29	61.90	160.25	42.32	94.75	.00	.00
OR008718	D887-74/PEW	88.13	61.23	160.75	36.42	90.00	.00	.00
OR830282	ND/P101//BUHO	87.76	61.48	154.00	32.48	96.00	.00	.50
ORCR8602	TJB788-1089/ALDAN	86.65	60.48	154.00	28.54	95.75	.00	.25
OR831134	CNO/INIA/HN7/3/CC//C	86.32	63.08	158.75	33.46	97.25	.00	.25
ID 434	ATL50/4/R/R//2*CNN/3	85.19	62.82	159.75	40.35	97.50	15.00	.00
WA 7620	N7701501//V72044/CER	83.29	62.48	162.50	39.37	95.00	.00	.50
OR008718	BPR 689-71/TI	81.40	61.23	159.75	42.32	93.75	63.80	.25
ID 423	ID0076/3 11-60-157/W	80.13	61.43	157.00	30.51	91.25	.00	.00
WA 7658	NE 77663/WA 6815	79.03	61.63	160.25	43.31	93.75	.00	.00
CI 1442	KHARKOF	69.73	60.70	160.00	47.24	95.75	69.98	.50
ID 433	II-60-156/CI 14106//	66.36	62.15	159.50	43.31	96.25	35.62	.00
EXPERIMENTAL MEANS		95.35	61.70	159.44	38.60	95.47	5.27	.41
F TEST FOR VAR.		2.56**	18.47**	16.72**	21.09**	2.12**	20.34**	1.96**
C.V. 2: (S OF MEAN/MEAN)*100		7.89	.33	.35	2.69	1.55	70.30	138.91
LSD (0.05)		21.09	.57	1.57	2.91	4.16	10.39	1.65

1/ Lodging Index = a combined score of lodging severity X prevalence
0 = no lodging, 99 = very severe lodging

** Indicates statistical significance at the .01 level