PROJECT TITLE: Winter Wheat Evaluations

YEAR/PROJECT: 1991/756

INVESTIGATORS: Bob Stougaard and Todd Keener, NWARC in Kalispell, MT.
Gene Hockett, Plant and Soils Science, Bozeman, MT.

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 2. Agronomic data from the Western Regional Soft White Winter Wheat Nursery grown on the Nothwestern Agricultural Research Center in Kalispell, MT. Planted: September 18, 1990 Harvested: August 13, 1991 Field E1

CI or State #	VARIETY	YIELD BU/A	TEST WT LB/BU	HEAD DATE	HEIGHT IN	%WINTR SURVL	% TCK SMUT
WA007431	Luke/BR7404434	137.25	56.55	164.25	36.91	99.75	.00
WA 7662	LUKE/DAWS//HILL 81,V	124.15	60.18	163.00	32.97	96.25	.00
WA 7663	MARKSMAN/DAWS,VH0852	122.72	58.45	162.25	34.94	95.00	.12
ID085153	SPRAGUE/STEPHENS	119.89	60.57	158.25	38.88	98.75	.00
WA 7689	DUSTY/WA007050, VD08	117.87	59.33	164.00	34.94	96.00	.00
OR833725	CORVALLIS SEL	117.58	59.22	160.00	38.88	91.25	.00
WA 7529	LUKE/VH67375//VPM/MO	117.39	60.03	162.00	32.48	98.25	.00
ORCW8635	CORVALLIS SELECTION	116.11	60.60	160.00	33.96	97.25	.00
WA 7688	SRG/LUKE/BR77136/DUS	115.23	59.53	162.75	30.51	97.50	.00
WA 7621	VPM/MS421//VH66354/W	108.67	57.57	162.75	33.96	96.25	.00
CI 13968	NUGAINES	107.20	62.97	161.50	32.97	90.00	.12
ID081277	SPN/Nacozari 76	107.15	59.58	158.00	33.96	94.25	.12
OR830801	CORVALLIS SELECTION	106.78	58.40	157.50	33.46	97.00	.12
WA 7687	WA 6580/HILL 81, VH0	106.33	59.73	159.25	33.46	96.00	.00
OR840815	SMB/HN4//SPN/3/WTS/Y	104.63	61.35	159.25	36.42	99.50	.50
WA 7690	VPM/MS951/YMH/HYS/HI	104.40	61.10	162.00	36.42	98.25	.00
CI 17596	STEPHENS	103.91	60.48	159.25	32.97	97.00	.00
OR851048	STEPHENS/QUILAMAPU 8	102.41	58.48	160.25	36.91	97.25	.12
WA 7166	HYAK	102.41	59.10	161.00	33.96	94.75	.00
CI 13740	MORO	102.20	59.70	160.75	42.81	96.00	.00
WA 7686	vho82254/orcw8313,VH	101.10	59.90	159.75	32.97	99.75	.12
WA 7527	TRES MULTILIE 86	99.89	60.13	162.00	35.93	93.75	.00
WA 7691	VPM/MS951//YMH/HYS//	99.84	60.22	160.25	31.99	92.25	.00
WA 7671	VPM/MS421//WA6241/3/	99.38	60.90	162.25	35.93	98.00	.00
ORFW 301	DAWS/SM4//MDM/SM11,F	99.30	59.83	157.50	32.48	94.75	.12
WA 7163	MADSEN	98.78	59.22	161.50	33.96	98.25	.00
OR850594	STEPHENS/CROW	98.35	60.90	155.50	30.02	94.25	.25
WA 7622	TYEE/ROAZON/TRES	97.79	60.03	163.00	35.43	93.75	.12
CI 11755	ELGIN	97.69	61.40	162.25	44.78	87.50	.25
OR087636	PENDLETON SEL, 87636	97.10	61.50	161.25	31.99	96.50	.00
CI 17917	TRES (WA 6698)	96.25	60.57	162.50	36.42	73.50	.12
OR087955	PENDLETON SEL, 87955	95.33	60.03	161.00	31.50	93.75	.00
ORF83115	SPN2*/THUL III	94.86	60.22	157.00	32.97	93.75	.00
OR850933	YMH/HYS/4/MRS/3/YMH/	93.60	60.75	155.50	30.51	92.50	.25
OR832784	CORVALLIS SEL	93.22	61.50	153.00	31.50	88.75	.00
ORF75336	YMH/MCD/2/T.SPELTA/3	93.09	60.05	159.00	33.46	93.75	.00
OR833765	CORVALLIS SEL	92.45	58.83	156.25	34.94	88.75	.25
OR 855	PAHA//SEL 72-330/DAW	92.04	61.38	160.75	31.50	94.75	.00
OR860303	AFG2/BUC, F1/KVF	90.31	61.55	155.75	32.97	98.00	.88
CI 1442	KHARKOF	80.74	61.68	159.25	49.70	92.50	.12
EXPERIMENTAL MEANS		103.88	60.09	160.08	34.82	94.62	.09
F TEST FOR VAR.		5.90**	18.43**	25.16**	28.93**	1.31	1.82**
C.V. 2: (S OF MEAN/MEAN)*100		4.42	.47	.32	2.07	4.23	137.06
LSD (0.05)		12.85	.80	1.45	2.02	11.22	.35

** Indicates statistical significance at the .05 level