

PROJECT TITLE: Winter Wheat Variety Evaluations

YEAR/PROJECT: 1990/756

INVESTIGATORS: Leader - Vern R. Stewart, Todd K. Keener - Research Specialist.

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

RESULTS:

Moderate winter temperatures, ample precipitation through the season and a warm summer contributed to favorable yields in the winter wheat nurseries this year. The regional nurseries survived the winter conditions and were in excellent condition by early spring. Although there were not long periods of snow cover this year dwarf bunt (TCK) levels were moderate to high in some varieties. Excellent yields were harvested from both the Regional Hard Red and Soft White Winter wheat nurseries.

- 1990 Western Regional Hard Red Winter Wheat Nursery

With favorable weather and few disease problems the yields for this nursery were very high ranging from 127.45 bu/A to 46.23 bu/A. Six Oregon entries were the top yielding varieties in the nursery (Table 1). Test weights were good with few varieties weighing below 60 bu/A. Lodging was moderate to severe and occurred in all but eight of the thirty-six varieties. Dwarf smut (TCK) was detected in all but six of the entries and was as high as 22.5% in Hybritech QT 549. Table 1.

- 1990 Western Regional Soft White Winter Wheat Nursery

Yields were very good in this nursery. The mean yield was 118.71 bu/A with all but three of the forty entries having yields in excess of 100 bu/A. The yields of Kharkof and Elgin were depressed due to the degree of lodging and dwarf smut (TCK) infection. Dwarf smut was light throughout the nursery but was found at some level in all but five entries. Test weights were mostly above 60 lbs/bu in this trial with the average being 60.63 lb/bu. Lodging was much less in the soft white winter wheats with only eight varieties having light to moderate levels. Table 2.

- 1990 Intrastate Winter Wheat Nursery

Snow cover on winter wheat has been associated with the high incidence of dwarf smut. Although continuous snow cover was not considerable through out the winter (28 days continuous, 66 total days) there was moderate to high levels of TCK smut in the 1990 Intrastate Winter Wheat nursery. Levels were as high as 9.5% and only two varieties were found to have no smut (Blizzard and MT 8726). Sixteen varieties had levels below the 2% level. Winridge had a very slight evidence of TCK smut (.12%). Yields were good, ranging from 63 to 107 bu/A. Lodging was moderate in one third of the entries. Table 3.

Table 2. Agronomic data from the Western Regional Soft White Winter Wheat nursery grown on the Northwestern Agricultural Research Center in Kalispell, MT. Field E-4
Planted: September 20, 1989
Harvested: August 13, 1990

CI/STATE NUMBER	VARIETY	YIELD BU/A	TEST WT LB/BU	HEAD DATE	HEIGHT IN	% TCK SMUT	- LODGING - SEVER.	PREV.
ID081277	SPN/Nacozari 76	140.63	60.43	165.75	36.81	.63	.00	.00
WA 7663	MARKSMAN/DAWS,V	138.60	58.57	169.00	39.27	.25	1.50	6.25
OSU00021	69-148/YMH/HYS	137.79	60.60	167.50	41.14	1.50	.00	.00
WA 7163	MADSEN	134.26	60.92	169.50	37.60	1.00	.00	.00
WA 7671	VPM/MS421//WA62	133.86	61.25	169.50	44.39	.37	.00	.00
WA 7662	LUKE/DAWS//HILL	133.30	61.28	168.75	34.45	.00	.00	.00
ORF75336	YMH/MCD/2/T.SPE	133.18	60.68	167.25	36.61	.88	.00	.00
WA 7529	LUKE/VH67375//V	132.01	59.70	170.50	35.14	.00	.00	.00
ORFW8311	SPN2*/Thul III	129.40	61.40	165.00	37.11	.50	.00	.00
ORCW8632	CORVALLIS SELEC	128.45	61.23	165.00	35.83	.12	.00	.00
CI 17596	STEPHENS	128.33	61.52	164.00	37.11	.63	.00	.00
OR840815	SMB/HN4//SPN/3/	127.99	62.03	164.75	39.67	1.75	.00	.00
ORFW 301	DAWS/SM4//MDM/S	124.70	60.87	163.50	35.93	.50	.00	.00
WA 7621	VPM/MS421//VH66	124.15	61.10	169.75	41.04	.25	.00	.00
WA 7527	TRES MULTILIE 8	124.00	60.83	170.25	45.18	.37	2.75	18.75
CI 17917	TRES (WA 6698	123.75	62.03	169.75	44.19	1.12	3.50	40.00
WA 7526	TRES COMPOSITE	123.65	61.38	170.00	43.01	.50	2.25	20.00
ORFW205B	FW73830-002/3/M	123.03	59.38	171.50	34.55	2.00	.00	.00
ORCW8635	CORVALLIS SELEC	121.68	60.20	167.50	37.11	1.37	.00	.00
WA 7166	HYAK	121.53	59.95	169.25	41.14	.63	.00	.00
WA 7664	LEWJAIN/WA6813,	121.25	61.45	168.25	35.24	.00	.00	.00
WA 7673	89-5 Comp. Mult	121.24	60.22	169.50	39.76	1.00	.00	.00
OR 855	PAHA//SEL 72-33	120.24	62.17	168.50	39.07	.50	.00	.00
OR830801	CORVALLIS SELEC	118.80	59.57	164.00	34.65	1.88	.00	.00
WA 7661	WA6581//BBE/AM7	118.54	59.48	171.25	34.94	.00	.00	.00
WA 7665	TYEE//CAPPELLE/	118.06	60.60	169.00	39.96	3.50	.00	.00
OR833725	CORVALLIS SEL	116.44	60.55	164.50	42.32	3.25	.00	.00
OR833765	CORVALLIS SEL	116.20	60.50	161.50	37.20	4.00	.00	.00
OSU00028	CEBECO 148//CNO	114.68	60.05	158.75	36.52	.63	.00	.00
WA 7627	WA096910, MARIS	111.91	60.45	170.75	37.50	2.25	.00	.00
CI 17419	Daws	111.69	61.28	167.75	36.81	.37	.00	.00
CI 13968	NUGAINES	111.55	62.33	167.75	34.94	3.25	.00	.00
WA 7431	Luke/BR7404434	110.46	58.78	171.75	39.27	.75	9.00	83.50
WA 7674	VH088385	109.23	61.43	171.50	35.63	1.37	.00	.00
WA 7666	VPM/MOS 951//CI	107.39	59.73	169.25	44.59	.75	.00	.00
OR832784	CORVALLIS SEL	104.06	61.25	159.25	33.96	.75	.00	.00
WA 7672	1/DT/820/OM/183	101.81	59.25	167.50	24.80	.12	.00	.00
CI 13740	MORO	83.69	59.40	168.25	46.85	.00	6.00	62.00
CI 11755	ELGIN	79.16	61.40	170.25	51.97	3.75	5.25	68.25
CI 1442	KHARKOF	67.88	60.13	168.00	51.18	21.25	9.00	96.00

EXPERIMENTAL MEANS 118.71 60.63 167.63 38.86 1.59 .98 9.87

Statistics on following page

Table 2. (Cont'd)

CI/STATE NUMBER	VARIETY	YIELD BU/A	TEST WT LB/BU	HEAD DATE	HEIGHT IN	% TCK SMUT	- LODGING - SEVER.	PREV.
EXPERIMENTAL MEANS		118.71	60.63	167.63	38.86	1.59	.98	9.87
F TEST FOR VARS		5.76**	8.64**	26.21**	29.90**	20.60**	13.69**	12.89**
C.V. 2: (S OF MEAN/MEAN)		5.40	.52	.37	2.34	46.64	64.55	68.81
LSD (0.05)		17.95	.89	1.74	2.55	2.08	1.77	19.02

**/ Indicates statistical significance at the .01 level of probability