PROJECT TITLE: Spring Wheat Variety Trials

YEAR/PROJECT: 1987/756 Small Grains Production

PROJECT PERSONNEL: Leader - Vern R. Stewart, Todd K. Keener, Northwestern Agricultural Research Center, Kalispell, MT.

SUMMARY:

The Spring Wheat variety nurseries are used to evaluate and test new lines for production in western Montana.

Three nurseries were grown in western Montana this year, the Advanced Yield, the Western Regional and two offstation spring wheat nurseries grown in Lake and Ravalli.

RESULTS:

Western Regional Spring Wheat

Owens was used as the check variety in this nursery and had a yield of 101.62 bu/A. The mean for the nursery, which had 36 varieties total, was 105.91 bu/A. Only three varieties had yields significantly higher than Owens and they were ORS 8512, UT 1821, and ORS 8511 (117 bu/A or above). Federation had the lowest yield at 71.07 bu/A. Test weights were reduced slightly from previous years with the mean being 58.18 lbs/bu. Leaf rust and stripe rust were observed throughout the nursery yet were at significant levels in only four or five varieties. Lodging was light throughout this nursery.

Advanced Yield Spring Wheat Nursery -

The mean yield for the Advanced Yield nursery was 96.86 bu/A, 10 bushels less the 1986 average. Wheaton, the highest yielding variety, produced 119.83 bu/A. Fifteen varieties yielded above 100 bu/A with thirty-four of the entries have yields less than that. Lancer was the low yielding variety at 79.68 bu/A. The test weights mean was 59.36 lbs/bu. Leaf and stripe rust were recorded in the nursery but only a few varieties exceeded 40% severity level. There was a moderate amount of lodging throughout the nursery with some varieties (Lancer, Cutless, Glenman, Lew, Fortuna, and Success) having lodging severity up to 90%.

Offstation Spring Wheat Nursery -

Twenty-four spring wheat varieties were grown in this year's offstation spring wheat nursery.

Lake County, Haake farm - Nordic, Treasure and MT 7926 all had yields that were slightly greater than the check variety Newana which had a low yield of 33.25 bu/A. The yields from this nursery were lower than normal due to a dry location and some shattering. The average yield was 29.13 bu/A with the high and low yield being 41.55 bu/A (Nordic) and 20.55 bu/A (Glenman) respectively. Test weights were normal even with the environmental conditons as they were. Under these growing conditions Nordic did show extra vigor to have the highest yield, test weight and height.

Ravalli County - Western Agricultural Research Center. Extremely low yields were harvested due to dry seedbed, thin stands, and shattering. Yields were so low in some plots that test weights could not be obtained.

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Table 1. Agronomic data from the Western Regional Spring Wheat Nursery grown on the Northwestern Agricultural Research Center, Kalispell, MT.
Date seeded: April 7, 1987 Date harvested: August 31, 1987

CI or State #	VARIETY		Yield Bu/A	Test Wt Lbs/Bu	Heading Date	Height Inches
ORS 8512	BOW.S,CM33023-F		121.53a	61.70a	163.00b	30.05b
UT 1821	UT76S88-1398/WYNNE		120.73a	60.53a	167.00a	38.32a
ORS 8511	KVZ/3/TOB/CFN//BB/4/		117.82a	59.87	164.00	32.15
ORS 8509	VEERY.S,CM33027F		114.65	59.60	164.33	30.31b
ID 315	SLG//COWBIRD S./SLG		114.32	56.77	163.67	35.83
ID 372	OWENS/FIELDWIN		113.95	58.80	164.00	36.35a
ORS 8510	MINIVET.S,CM37705K		113.57	60.43a	164.00	32.81
CI 17903	MCKAY		112.90	59.13	165.33	33.73
OR 8508	TANAGER'S',CM30697-2		111.82	60.27a	161.00b	31.89b
ORS 8422	TITMOUSE.S,CM30136-3		109.27	58.70	164.00	30.84b
WA 7183	K78504/K79129-33//K7		109.15	58.10	166.00	33.73
ID 365	COWBIRD"S"/STERLING		108.52	57.70	164.33	33.07
UT 1111	UT76S88-1292/UT74S25		108.47	57.37	167.33a	38.58a
ID 373	ID172/FIELDWIN SEL.8		108.33	58.83	163.67	33.86
ID 307	COWBIRD"S"/STERLING		107.65	58.53	164.67	31.10b
ID 341	COWBIRD"S"/5/MC/BJ06		106.78	59.37	166.67a	31.10b
WA 6920	PENAWAWA		106.40	58.53	164.67	33.20
WA 7492	K78504/K74129-33//K7		106.40	57.37	165.00	35.56
WA 7176	K78504/K74129-33//K7		106.18	58.17	165.33	36.48a
WA 7075	K73579/BORAH		105.50	58.00	164.00	34.12
ID 348	2*SLG//COWBIRD"S"/SL		105.13	57.87	164.67	33.46
ORS 8418	TV18A-CM067/HORK'S'		104.98	59.43	161.67b	31.76b
ID 303	MC/BJ066/4/TZPP/SN64		104.90	59.03	163.67	33.60
UT 2506	POWELL/UT74S25-916		104.08	57.10	166.33a	37.01a
WA 7496	K7400315/PTM70S.47		103.83	55.93b	164.00	30.18b
UT461941	UT76S88-1292/UT74S25		103.57	58.30	168.00a	38.19a
WA 7328	NHS07664/NDM000004,8		103.23	56.37b	165.67	37.80a
UT402265	WYNNE/ID125		102.68	59.10	170.00a	38.85a
ID 312	COWBIRD S./2*STERLIN		102.10	58.20	163.00b	31.36b
CI 17904	OWENS	1/	101.62	58.37	164.67	33.99
ID 319	SLG//COWBIRD S./SLG		101.40	56.63	164.00	34.25
WA 7326	K7205078/CI14193,S65		98.92	57.63	165.67	35.96
WA 6831	EDWALL		97.22	56.17	165.33	33.07
ID 366	BRH/3/II-60-101//TZP		93.55	58.03	165.00	36.09a
UT 2171	UT76S88-1398/UT74S25		90.47	55.20b	166.33a	40.42a
CI 4734	FEDERATION		71.07b	53.37b	165.33	42.26a
		$\bar{X}$	105.91	58.18	164.87	34.48
	2/	F value	3.00**	6.49**	11.02**	16.77**
		C.V. %	4.89	1.09	.31	2.16
		L.S.D.	14.61	1.79	1.44	2.10

Table 2. Agronomic data from the Western Regional Spring Wheat Nuresry (Cont'd)

CI or State #	Variety	LfRust Type	Lf Rust Sever	Stripe Type	Stripe Sever	---Lodging-- Prev	Sever
ORS 8512	BOW.S,CM33023-F	.07b	1.67	.00	.00	16.67	1.33
UT 1821	UT76S88-1398/WYNNE	1.00	18.33	.07	3.33	.00	.00
ORS 8511	KVZ/3/TOB/CFN//BB/4/	.07b	1.67	.00	.00	.00	.00
ORS 8509	VEERY.S,CM33027F	.33	5.00	.00	.00	.00	.00
ID 315	SLG//COWBIRD S./SLG	.33	1.67	.07	3.33	18.33	2.33
ID 372	OWENS/FIELDWIN	1.00	46.67a	.00	.00	25.00	2.00
ORS 8510	MINIVET.S,CM37705K	.00b	.00	.00	.00	.00	.00
CI 17903	MCKAY	.07b	1.67	.07	1.67	1.67	1.33
OR 8508	TANAGER'S',CM30697-2	.13b	3.33	.00	.00	.00	.00
ORS 8422	TITMOUSE.S,CM30136-3	.73	13.33	.00	.00	.00	.00
WA 7183	K78504/K79129-33//K7	.33	1.67	.13	6.67	.00	.00
ID 365	COWBIRD"S"/STERLING	.40	3.33	.00	.00	6.67	2.33
UT 1111	UT76S88-1292/UT74S25	1.00	10.00	.73a	38.33	.00	.00
ID 373	ID172/FIELDWIN SEL.8	1.00	26.67	.53a	6.67	.00	.00
ID 307	COWBIRD"S"/STERLING	.33	3.33	.23	5.00	.00	.00
ID 341	COWBIRD"S"/5/MC/BJ06	.27	10.00	.00	.00	.00	.00
WA 6920	PENAWAWA	.67	3.33	.53a	10.00	1.67	1.00
WA 7492	K78504/K74129-33//K7	.07b	3.33	.07	3.33	25.00	1.00
WA 7176	K78504/K74129-33//K7	.60	16.67	.40a	5.00	.00	.00
WA 7075	K73579/BORAH	.33	3.33	.00	.00	.00	.00
ID 348	2*SLG//COWBIRD"S"/SL	1.00	23.33	.00	.00	.00	.00
ORS 8418	TV18A-CM067/HORK'S'	.07b	1.67	.33	3.33	16.67	1.33
ID 303	MC/BJ066/4/TZPP/SN64	.33	1.67	.27	8.33	.00	.00
UT 2506	POWELL/UT74S25-916	.73	18.33	.00	.00	5.00	1.00
WA 7496	K7400315/PTM70S.47	.00b	.00	.47a	10.00	.00	.00
UT461941	UT76S88-1292/UT74S25	.73	13.33	.00	.00	16.67	2.67
WA 7328	NHS07664/NDM000004,8	.27	3.33	.00	.00	.00	.00
UT402265	WYNNE/ID125	.53	5.00	.07	1.67	23.33	2.00
ID 312	COWBIRD S./2*STERLIN	1.00	58.33a	.00	.00	.00	.00
CI 17904	OWENS 1/	.67	15.00	.00	.00	28.33	2.33
ID 319	SLG//COWBIRD S./SLG	.87	61.67a	.00	.00	6.67	1.00
WA 7326	K7205078/CI14193,S65	.07b	3.33	.27	8.33	13.33	2.67
WA 6831	EDWALL	.00b	.00	.47a	10.00	.00	.00
ID 366	BRH/3/II-60-101//TZP	1.00	48.33a	.07	1.67	25.00	2.67
UT 2171	UT76S88-1398/UT74S25	.33	3.33	.00	.00	.00	.00
CI 4734	FEDERATION	.00b	.00	.00	.00	36.67	2.00
	X	.45	11.99	.13	3.52	7.41	.81
	F value 2/	3.86**	7.75**	2.29**	5.62**	1.26	1.37
	C.V. %	40.73	49.87	100.74	82.39	129.43	106.97
	L.S.D.	.52	16.87	.38	8.18	27.04	2.43

1/ Check variety
2/ F value for vareity comparison
** Indicates statistical significance at the .01 level of probability
a/ Values significantly greater than the check at the .05 level
b/ Values significantly less than the check at the /05 level.