

PROJECT TITLE: Spring Wheat Variety Evaluations

YEAR/PROJECT: 1990/756

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

OBJECTIVE:

To determine the adaptability of new and introduced spring wheat varieties grown under high moisture conditions in Montana. Evaluation of new and introduced spring wheat varieties in various growing conditions of western Montana.

RESULTS:

Western Regional Spring Wheat -

The yields taken from the Western Regional Spring Wheat nursery were some of the highest since the 1987 harvest. The range of yields was 73.25 to 126.45 bu/A. Owens had a yield of 111.83 bu/A, which was well above the nursery mean yield of 99.96 bu/A. Test weights were normal for spring wheat this season averaging 57.56 lb/bu. The test weights were higher than those of 1989 yet much lower than those recorded in 1988. Low test weights in spring wheat, like those recorded this year, are often a result of long periods of precipitation prior to harvest. There was very little disease or lodging in this nursery.

1990 Advanced Yield Nursery -

The mean yield for this nursery was 93.48 bu/A, 16 bushels per acre less than the average last year. The yields ranged from 79.9 to 125.05 bu/A. Owens had the top yield with all the other entries having yields that were significantly lower. The second highest yield was Lloyd at 108.78 bu/A. Penawawa yielded 102.12 bu/A and had a test weight of 57.60 lb/bu. Only five of the 36 entries had yields in excess of 100 bu/A. Test weights averaged 57.98 lb/bu, which is equal to last year. Heading dates and height did not vary from the averages that have been recorded over the years.

Offstation Spring Wheat Variety Evaluation -

Offstation spring wheat nurseries were seeded in two locations this year.

- Ravalli County - Robert Christ farm, Hamilton, MT.
- Lake County - Starkle farms, Ronan, MT

All locations were irrigated and recieved adequate rainfall during the growing season. Yields were good to excellent for the majority of entries and most varieties had average test weights. Disease incidence was low or non-existent in all areas. There was no lodging at the Hamilton and Ronan nursery sites.

Ravalli County Offstation Spring Wheat -

Yields from the offstation nursery grown on the Robert Christ farm

in Hamilton ranged from 43.9 to 113.9 bu/A. Penawawa had the highest yield at this location. Owens and Stoa both had yields that were above 100 bu/A. The average test weight was 56.0 lbs/bu which was lower than expected for this area. Lew and Lancer had test weight averages less than 50 lbs/bu. There was no lodging in this nursery. A high population of wild oats was controlled by an Avenge application. Table 3.

Lake County Offstation Spring Wheat -

The nursery located at the Starkle farm in Ronan had yields in the range of 48.8 to 85.7 bu/A. The top yielding variety (Amidon), a North Dakota entry, yielded 85.7 bu/A. All test weights in the nursery were slightly less than anticipated. Amidon had the highest test weight at 59.10 lb/bu. There was no lodging in this nursery. Table 4.

Averages for both 1990 Offstation Spring Wheat locations are given in Table 5.

1990 Triticale Variety Nursery -

Yields were slightly less than the 1988 and 1989 yields and ranged from 54.95 to 77.98 bu/A (based on 60 lb/bu test weights). As last year, the varieties of Juan and Welsh had some of the highest yields. Test weights were slightly lower this year, heading dates were a little later and height averages were less than in the previous years. Table 6.

Line	Yield (bu/A)	Test Weight (lbs/bu)	Height (in)	Heading Date	Notes
1	43.9	56.0			
2	113.9				
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Table 1. Agronomic data from the Western Regional Spring Wheat nursery grown on the Northwestern Agricultural Research Center. Planted: April 2, 1990 Harvested: August 31, 1990

CI/STATE NUMBER	VARIETY	TYPE 2/	YIELD BU/A	TEST WT LB/BU	HEAD DATE	HEIGHT IN
ID 405	ID228/A73262S-11682-	SW	126.45	59.80a	179.67a	38.45a
ID 409	TREASURE/ID246	SW	118.87	57.00b	178.67	35.96
UT 1601	UT78S147-125/906R	HR	115.55	58.63	178.00	34.78
UT613960	RICK/UT 78S 147-125	HR	115.15	56.83b	179.33a	36.35
ID 392	OWENS/ID159	SW	113.97	58.70	177.67	35.56
ID 408	ID232/A75120S-2214-1	SW	113.70	53.87b	178.00	33.99
ID 415	STERLING/BLISS	SW	113.50	59.40a	178.00	38.06
WA 7668	K80296/NK751	HR	113.47	58.30	178.33	38.98a
CI 17904	OWENS	1/ SW	111.83	58.30	178.00	36.09
LEWIE05	LEWI-3M,5(F9 SEMIDWA	SW	111.78	57.77	179.33a	36.22
ORS 8427	SPSWE 9	SW	110.48	58.17	178.00	35.56
OR487400	SN64/HN4//REX/3/EDCH	HR	107.87	61.27a	177.67	33.73b
WA 7496	K7400315/PTM70S.47	SW	107.27	56.97b	178.33	31.23b
WA 7075	K73579/BORAH	HR	107.22	56.90b	177.33	34.65
UT 2534	UT78S147-209/906R	HR	106.88	58.63	177.00	37.80
OR487316	SAP SIB/MON SIB	SW	104.15	55.20b	176.00b	29.53b
WA 7183	WAKANZ	SW	103.45	55.87b	179.00	33.20b
UT 2464	UT 78S 147-209/906R	HR	103.07	59.27a	179.33a	36.61
OR487453	SPHWE 11	HW	102.48	56.47b	177.67	29.66b
UC 786	YOLO'S'/YRR,CAB10041	HR	102.15	56.83b	176.00b	27.82b
LEWIE04	LEWI-EM,4(F9SEMIDWAR	SW	102.13	58.00	178.00	35.83
UT613945	RICK/UT78S147-125	HR	102.10	56.83b	179.33a	36.35
ID 420	A7612S-2/A75141S-2-1	HR	101.73	59.47a	176.67b	30.58b
UT580646	UT77W1054-1777/906R	HR	101.45	57.20b	178.00	31.23b
WA 7176	K78504/K74129-33//K7	SW	99.53	57.03b	179.00	37.27
ID 412	A76102S-1-2/EMU'S'	HR	99.13	59.77a	176.33b	34.78
WA 6920	PENAWAWA	SW	98.30	57.50b	178.00	34.65
OR487475	AGA/6*'YR'	HR	97.25	56.00b	175.67b	24.93b
CI 17903	MCKAY	HR	94.80b	59.47a	179.00	34.12
ID 417	ID 182/FIELDWIN	SW	93.78b	59.27a	176.00b	33.73b
OR487462	SPHRE 16	HR	92.83b	57.10b	175.33b	30.71b
OR487456	CT.S	HR	88.25b	57.97	176.00b	30.71b
UC 638	SERRA	HR	87.87b	58.17	176.00b	31.76b
ID 367	A76102S-1-2/ID 134	HR	87.18b	58.43	178.00	35.43
OR487380	SPHWE 13	HW	86.92b	55.33b	175.33b	24.41b
ID 419	ID 204/ID 134	HR	85.72b	59.80a	177.67	33.60b
CI 4734	FEDERATION	SW	85.23b	54.97b	178.67	42.39a
OR487279	SPHWE9	HW	85.07b	56.83b	175.00b	27.17b
LEWIE01	LEWI-EM,1(F9 SEMIDWA	SW	84.72b	55.50b	179.00	32.41b
OR487355	JUP/BJY.S//DOVE.S	HR	81.97b	57.13b	175.67b	31.76b
UC 784	STA/YRR,CA770284-OD-	HR	80.20b	55.93b	174.00b	25.33b
UC 785	STA/YRR,CA770284-OD-	HR	79.38b	56.27b	176.00b	24.15b
NKF 8022	KLASIC	HW	73.25b	56.80b	174.33b	26.64b

EXPERIMENTAL MEANS

99.96

57.56

177.40

33.12

Statistics on following page

Statistical data from the Western Regional Spring Wheat nursery

CI/STATE NUMBER	VARIETY	YIELD BU/A	TEST WT LB/BU	HEAD DATE	HEIGHT IN
EXPERIMENTAL MEANS		99.96	57.56	177.40	33.12
F TEST FOR VAR.		4.66**	33.24**	16.89**	27.09**
C.V. 2: (S OF MEAN/MEAN)*100		5.73	.47	.20	2.46
LSD (0.05)		16.12	.76	1.02	2.29

1/ Check variety

2/ TYPE = HR (Hard red), SW (Soft white), HW (Hard white)

** Indicates statistical significance at the .01 probability level

a/ Values significantly greater than the check at the .01 level

b/ Values significantly less than the check at the .01 level