

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 3. Agronomic data from the Advanced Yield 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	HEAD DATE	HEIGHT INCHES
PI469271	WHEATON	119.83a	59.53	163.33	31.50b
TREA0000	TREASURE	109.03	56.30b	165.33a	33.73
MT 8363	MT7448/MT703	108.90	57.77	162.00b	33.20
MT 8336	PM 23/ MT7448	108.30	60.70a	165.00a	35.83
MT 8520	DLAF/MT7336	106.07	58.83	164.00	34.65
MT 8182	YDING "S"/PCI "S"-287	105.72	57.70	163.33	37.14
CI 17430	NEWANA	105.03	59.43	165.67a	32.68
WFBLAKER	LAKER	104.28	61.77a	166.67a	31.89b
MT 8626	CI15838/MT7418//PONDERA	104.12	59.27	162.33b	33.60
PI486349	SUCCESS	103.95	59.30	166.00a	35.96
MT 8434	MT7421/NEWANA	102.68	60.87a	162.67	34.65
MT 8407	SU73/MT7336	102.32	60.17a	162.67	39.24a
MT 8564	DLAF/LEW	102.32	60.37a	166.00a	41.08a
MT 8446	MT7336/SHORTANA	100.73	59.50	163.00	33.0a
MT 8561	DLAF/MT7336	100.08	57.43b	165.67a	34.38
MT 8602	CI15838/MT7418//PONDERA	99.97	59.63	162.00b	33.46
MT 8664	UNKNOWN	99.62	59.00	165.67a	33.46
MT 8320	PM 23/ MT7448	99.40	58.87	164.67	33.46
MT 8550	RS6880/PONDERA	98.57	59.20	165.67a	36.75
ND 606	Su28-1*2/3/LEW//TIOGA/RL6	98.22	59.60	165.33a	39.63a
MT 8601	NEWANA/MT7746	98.07	60.80a	161.67b	33.60
MT 8447	SU73/MT7336	97.58	60.43a	163.67	37.93
CI 17828	PONDERA	97.50	59.03	162.33b	33.33
PNR02369	PIONEER 2369	96.65	60.07	163.67	31.50b
MT 8647	MT7635/NAC0ZARI'S	96.63	59.03	162.00b	35.04
CI 17904	DWENS	95.37	58.77	163.67	35.30
CI 10003	THATCHER	95.08	58.53	164.00	35.70
CI 17282	CROSBY	94.90	60.50a	162.33b	40.55a
MT 8623	FAVON76/LEW	94.53	59.60	165.67	36.75
MT 8515	MT7421/NEWANA	94.30	60.53a	163.00	36.48
MT 8666	LEN/MT7632	94.08	58.03	161.33b	31.76b
MT 8402	MT7336/SHORTANA	93.73	59.03	162.67	31.89b
COFF0000	COPPER	93.55	59.27	162.33b	31.23b
MT 7926	ND 681/MT 6830	93.47	60.27a	165.00a	41.47a
MT 8537	RS6880/MT7746	92.93	60.37a	162.67	34.51
ND 597	BUTTE86	92.63	59.93	161.67b	35.30
MT 8529	CI15838/MT7418//PONDERA	92.20	60.20a	163.00	32.94
CI 13596	FORTUNA	90.77	60.03	164.00	39.37a
MT 8327	N2211/MT7448	90.75	58.27	163.00	33.73
MT 8429	MT7421/MT7031	90.75	58.93	165.00a	37.53
CI17429	LEW	90.55	59.43	165.67a	38.45

Table 3. (Cont'd) Agronomic data from the Advanced Yield Spring Wheat

CI or State #	VARIETY	YIELD BU/A	TEST WT LBS/BU	HEAD DATE	HEIGHT INCHES
PI 15892	WARD	90.35	59.53	162.00b	41.08a
PI483235	GLENMAN	90.18	56.70b	165.00a	34.25
MT 8424	MT7336/NORANA	89.45	57.87	164.33	34.78
C982-324	RAMBO	88.30	59.93	165.00	33.46
MT 8533	CI15838/MT7418//PONDERA	86.23	59.60	162.67	34.12
NDCUT	CUTLESS	85.85	59.50	162.67	36.22
MT 8616	MT7635/ANGUS	80.70	60.77a	164.00	34.65
CANLANC	LANCER	79.68	58.87	165.67a	44.23a

\bar{X}	96.86	59.37	163.81	35.44
F value 2/	1.43	5.24**	10.65**	6.99**
C.V. %	6.55	.80	.27	3.20
L.S.D.	17.81	1.34	1.26	3.18

Table 4. Agronomic data from the Advanced Yield Spring Wheat Nursery, Disease and lodging data.

CI or State #	VARIETY	LF RUST	LF RUST	STFRUST	STPRUST	LODGING	LODGING
		TYPE	PREV	TYPE	SEVER	PREV	SEVER
PI469271	WHEATON	.00b	.00	.20	5.00	.00b	.00b
TREA0000	TREASURE	.67	18.33	.33	16.67	30.00	2.00
MT 8363	MT7448/MT703	.87	15.00	.07	3.33	.00b	.00b
MT 8336	FM 23/ MT7448	1.00	21.67	.00	.00	.00b	.00b
MT 8520	DLAF/MT7336	.53	3.33	.20	1.67	.00b	.00b
MT 8182	YDING "S"/PCI "S"-287	.53	18.33	.07	6.67	33.00	1.67b
CI 17430	NEWANA	.87	5.00	.87a	5.00	.00b	.00b
WPBLAKER	LAKER	.00b	.00	1.00a	36.67a	.00b	.00b
MT 8626	CI15838/MT7418//PONDERA	.60	6.67	.27	3.33	33.00	1.67b
PI486349	SUCCESS	.00b	.00	.07	5.00	89.67	6.67
MT 8434	MT7421/NEWANA	.00b	.00	.73a	11.67	49.67	3.67
MT 8407	SU73/MT7336	.67	1.83	.00	.00	3.33b	1.33b
MT 8564	DLAF/LEW	.07b	1.67	.00	.00	93.00a	4.33
MT 8446	MT7336/SHORTANA	.33	10.00	.00	.00	.00b	.00b
MT 8561	DLAF/MT7336	.00b	.00	.87a	15.00	.00b	.00b
MT 8602	CI15838/MT7418//PONDERA	.53	5.00	.07	1.67	.00b	.00b
MT 8664	UNKNOWN	1.00	16.67	.13	5.00	30.00	1.67b
MT 8320	FM 23/ MT7448	.47	11.67	.00	.00	.00b	.00b
MT 8550	RS6880/PONDERA	1.00	21.67	.07	1.67	.00b	.00b
ND 606	Su28-1*2/3/LEW//TIOGA/R	.00b	.00	.73a	10.00	6.67	1.33b
MT 8601	NEWANA/MT7746	1.00	28.33a	.00	.00	.00b	.00b
MT 8447	SU73/MT7336	.33	1.67	.07	6.67	.00b	.00b

Table 4. (Cont'd) Agronomic data from the Advanced Yield Spring Wheat

Disease and lodging data.

CI or State #	VARIETY	LF TYPE	RUSTLF PREV	RUSTST TYPE	PRUSTST SEVER	PRUSTL PREV	LODGING SEVER
CI 17828	PONDERA	.87	41.67a	.00	.00	.00b	.00b
PNR02369	PIONEER 2369	.00b	.00	.60a	20.00a	.00b	.00b
MT 8647	MT7635/NACDZARI'S ^{1/}	.60	11.67	.00	.00	28.33	1.67b
CI 17904	DWENS	.67	5.00	.07	1.67	48.33	5.00
CI 10003	THATCHER	.67	16.67	.40	10.00	61.67	2.33
CI 17282	CROSBY	.20	1.67	.87a	13.33	5.00b	1.33b
MT 8623	PAVDN76/LEW	.33	3.33	.60a	20.00a	55.00	3.33
MT 8515	MT7421/NEWANA	1.00	26.67a	.00	.00	3.33b	1.00b
MT 8666	LEN/MT7632	.67	5.00	.67a	3.33	.00b	.00b
MT 8402	MT7336/SHORTANA	.73	8.33	.00	.00	.00b	.00b
COPP0000	COPPER	.53	3.33	.07	1.67	3.33b	1.33b
MT 7926	ND 681/MT 6830	.40	3.33	.07	3.33	46.67	3.00
MT 8537	RS6880/MT7746	.87	13.33	.00	.00	.00b	.00b
ND 597	BUTTE86	.00b	.00	.33	3.33	.00b	.00b
MT 8529	CI15838/MT7418//PONDERA	1.00	21.67	.00	.00	33.00	1.67b
CI 13596	FORTUNA	.00b	.00	.13	11.67	97.67a	5.00
MT 8327	N2211/MT7448	.00b	.00	.40	11.67	.00b	.00b
MT 8429	MT7421/MT7031	.67	18.33	.67a	11.67	.00b	.00b
CI17429	LEW	.00b	.00	.60a	16.67	97.67a	5.00
PI 15892	WARD	.33	6.67	.53	23.33a	.00b	.00
PI483235	GLENMAN	.40	20.00	.00	.00	94.67a	6.67
MT 8424	MT7336/NORANA	.67	16.67	.40	6.67	6.67	2.33
C982-324	RAMBO	.00b	.00	.87a	28.33a	.00b	.00b
MT 8533	CI15838/MT7418//PONDERA	1.00	26.67a	.00	.00	31.67	4.00
NDCUT	CUTLESS	.00b	.00	.00	.00	96.00a	6.33
MT 8616	MT7635/ANGUS	.00b	.00	.07	3.33	68.33	6.00
CANLANC	LANDER	.00b	.00	.73a	21.67a	99.00a	6.67
	\bar{X}	.45	8.91	.28	7.07	25.40	1.78
	F value 2/	3.37**	2.32**	3.64**	2.25**	5.34**	4.48**
	C.V.%	44.87	73.65	59.60	80.84	59.01	58.93
	L.S.D.	.57	18.43	.47	16.06	42.08	2.94

1/ Check variety

2/ F value for variety 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