

PROJECT TITLE: Offstation Spring Wheat Variety Evaluation

YEAR/PROJECT: 1990/756

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

OBJECTIVE: Evaluation of new and introduced spring wheat varieties in various growing conditions of western Montana.

RESULTS: 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 non-existent in all areas. There was no lodging at the Hamilton and Ronan nursery sites.

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 a little 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 had been controlled by an Avenge application. Table 1.

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 2.

SUMMARY:

The top yielding varieties averaged across all the offstation nursery locations were Penawawa and Owens which both exceeded 90.0 bu/A. Table 3. The average yield for all entries comparing all locations was 76.38 bu/A. Test weights averaged 56.09 lb/bu.

FUTURE PLANS:

Offstation nursery trials are planned in the future to continue building the long term database for varieties in the varied environments of Montana.

Table 1. Agronomic data from the Offstation Spring Wheat Nursery grown on the Christ farm in Hamilton, MT ( Ravalli Co.) in 1990.  
Planted: April 12, 1990                      Harvested: September 6, 1990

CI/STATE NUMBER	VARIETY	TYPE 2/	YIELD BU/A	TEST WT LB/BU	HEIGHT IN
WA 6920	PENAWAWA	SW	113.94a	56.07	33.46
CI 17904	OWENS	SW	113.76a	58.00	35.70
ND 582	STOA	HR	101.08a	57.67	41.99a
CI 15930	OLAF	HR	95.48	57.07	36.35
CI 17828	PONDERA	HR	92.50	57.63	35.04
CI 17790	LEN	HR	89.02	57.23	35.04
CI 17430	NEWANA 1/	HR	88.29	57.67	33.73
ND 606	AMIDON	HR	86.87	56.07	44.36a
C982-324	RAMBO	HR	84.98	58.60	33.46
ND 618	GUS	HR	84.03	58.33	37.01a
WPB 926R	WESTBRED 926R	HR	80.67	57.03	30.45b
ND 626	GRANDIN	HR	77.88	58.53	36.75
WPB 906R	WESTBRED 906R	HR	77.03	57.20	29.66b
PI483235	GLENMAN	HR	74.39b	53.77b	35.96
MT 8402	MT7336/SHORTANA	HR	72.69b	56.50	32.41
CI 13596	FORTUNA	HR	71.93b	55.93	43.57a
NDCUT	CUTLESS	HR	69.32b	52.77b	38.32a
CANLANC	LANCER	HR	68.44b	49.80b	43.96a
CI 17910	ALEX	HR	60.02b	55.50	39.76a
CI 17429	LEW	HR	43.88b	48.77b	37.66a
EXPERIMENTAL MEANS			82.31	56.01	36.73
F TEST FOR VAR.			14.88**	10.75**	15.60**
C.V. 2: (S OF MEAN/MEAN)*100			5.30	1.49	2.93
LSD (0.05)			12.49	2.39	3.08

1/ Check variety

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

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

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

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

Table 2. Agronomic data from the Offstation Spring Wheat nursery grown on the Starkle farm, Ronan, MT in Lake County.  
Planted: April 20, 1990                      Harvested: September 6, 1990

CI/STATE NUMBER	VARIETY	TYPE 2/	YIELD BU/A	TEST WT LB/BU	HEIGHT IN
ND 606	AMIDON	HR	85.72	59.10	42.39a
WPB 926R	WESTBRED 926R	HR	83.62	55.57	30.05
WPB 906R	WESTBRED 906R	HR	82.03	55.33	29.66
ND 618	GUS	HR	80.43	57.20	35.43a
MT 8402	MT7336/SHORTANA	HR	79.42	57.57	30.18
ND 582	STOA	HR	78.33	56.30	40.42a
CI 15930	OLAF	HR	78.13	56.10	34.38a
CI 17828	PONDERA	HR	74.20	57.77	31.89
ND 626	GRANDIN	HR	72.63	56.73	35.83a
CI 17910	ALEX	HR	72.43	58.20	42.65a
CI 17904	OWENS	SW	72.28	52.67b	33.33a
CI 17430	NEWANA 1/	HR	72.22	56.53	30.84
WA 6920	PENAWAWA	SW	71.70	53.17b	31.76
C982-324	RAMBO	HR	70.80	57.47	32.94
CI 17790	LEN	HR	68.67	55.13	31.63
CI 13596	FORTUNA	HR	57.42b	54.97	43.70a
CANLANC	LANCER	HR	54.72b	55.83	42.26a
PI483235	GLENMAN	HR	53.32b	53.67b	34.78a
NDCUT	CUTLESS	HR	52.05b	57.63	35.43a
CI 17429	LEW	HR	48.77b.	56.70	40.94a
EXPERIMENTAL MEANS			70.44	56.18	35.52
F TEST FOR VAR.			4.75**	3.52**	31.91**
C.V. 2: (S OF X/X)*100			7.31	1.60	2.38
LSD (0.05)			14.75	2.58	2.42

1/ Check variety

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

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

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

\*\* Indicates statistical significance at the .01-level of probability

Table 3. Data Summary for 1990 Lake and Ravalli County Offstation Spring Wheat Nurseries.

CI/STATE NUMBER	TYPE 2/	VARIETY	YIELD BU/A	TEST WT. LB/BU	HEIGHT INCHES
CI 17429	HR	LEW	46.33	52.74	39.30
ND CUT	HR	CUTLESS	60.69	55.20	36.88
CANLANC	HR	LANCER	61.58	52.82	43.11
PI483235	HR	GLENMAN	63.86	53.72	35.37
CI 13596	HR	FORTUNA	64.68	55.45	43.64
CI 17910	HR	ALEX	66.23	56.85	41.21
ND 626	HR	GRANDIN	75.26	57.63	36.29
MT 402	HR	MT7336/SHORTANA	76.06	57.04	31.30
C982-324	HR	RAMBO	77.89	58.04	33.20
CI 17790	HR	LEN	78.85	56.18	33.34
WPB 906R	HR	WESTBRED 906R	79.53	56.27	29.66
CI 17430	HR	NEWANA 1/	80.26	57.10	32.29
WPB 926R	HR	WESTBRED 926R	82.15	56.30	30.25
ND 618	HR	GUS	82.23	57.77	36.22
CI 17828	HR	PONDERA	83.35	57.70	33.47
ND 606	HR	AMIDON	86.30	57.59	43.38
CI 15930	HR	OLAF	86.81	56.59	35.37
ND 582	HR	STOA	89.71	56.99	41.21
WA 6920	SW	PENAWAWA	92.82	54.62	32.61
CI 17904	SW	DWENS	93.02	55.34	34.52
Mean			76.38	56.09	36.13

1/ Check variety

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