

Title: Off-station spring wheat variety evaluations in the Western Triangle Area.

Year: 1998

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and Dr. Luther Talbert, MSU Plant Science Dept.

Off-station spring wheat variety trials were grown in Teton County near Choteau, Toole County near Oilmont, and Glacier County near Cut Bank. These three locations represent diverse environments with Choteau having deep soil and typically favorable moisture, Oilmont having less than favorable moisture, and Cut Bank with short growing season. The Cut Bank trial was no-till planted on chem-fallow. Data for the three locations are presented in Tables 1 to 6, and include the 1998 data and five-year averages.

Results: Rainfall was nearly twice the normal amount during June and July, followed by hot dry conditions in late July and August. This weather pattern contributed to high yield but low test weight.

Sawfly wasps were active at Choteau, but no stem cutting was observed. This was likely due to parasitism of the sawfly larvae. McNeal, Westbred 936, Fergus and Hiline performed consistently well across all locations for yield and protein. Among these four varieties, McNeal and WB936 had a slight yield advantage in higher moisture conditions, while Fergus and Hiline maintained higher test weight under moisture stress.

Scholar showed slight advantages over Amidon for yield, test weight and protein, and had a slightly shorter straw height and similar maturity date. Scholar has medium sawfly resistance that is slightly better than Amidon.

Future Plans: Variety trials will be repeated in 1999 at these same locations.

Table 1. Dryland Spring Wheat variety trial grown near Cut Bank, 1998. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
MTHW9420	63.2	61.5	35	8.8
GLENMAN *	62.9	62.2	35	9.5
LEN	62.1	61.7	37	10.8
HI-LINE	61.9	62.7	34	10.0
MT 9609	61.5	62.4	41	10.2
RAMBO *	60.0	62.0	33	10.1
WESTBRED EXPRESS	59.7	62.3	30	9.6
PIONEER 2375	59.4	62.8	39	10.1
MCNEAL	58.6	61.0	34	10.5
WESTBRED 936	58.4	61.5	31	10.2
FERGUS	58.2	62.2	33	9.7
GRANDIN	58.1	61.5	37	10.7
WESTBRED 926	58.0	61.0	35	10.1
STOA	57.4	62.9	44	10.3
NEWANA	56.8	60.2	32	9.6
SCHOLAR (MT 9433) *	55.1	61.9	43	10.5
AMIDON *	54.5	61.9	45	10.3
ERNEST *	51.8	63.6	43	10.6
FORTUNA *	49.7	62.9	43	9.8
TRENTON	49.5	61.8	47	10.8
LEW *	47.6	62.9	43	9.8

Cooperator: Don Bradley.

Location: Fifteen miles north of Cut Bank. (Glacier County)

Fertilizer: 50 # N topdressed & 100# 11-52-0 with the seed.

Previous crop: No-till chemical fallow. (wheat stubble)

Date seeded: April 20, 1998.

Date harvested: August 17, 1998.

Rainfall: 6.5 inches from May 12 to harvest.

* = Sawfly resistant varieties. (Amidon, Rambo, and Scholar have partial resistance.) (Also, most experimental lines are resistant).

Yield experimental mean: 57.34

Error degrees of freedom: 40

F test for var: 10.95

C.V. 2: 2.38

LSD (0.05): 3.9

Table 2. Five-year summary for dryland Spring Wheat varieties grown near Cut Bank, MT. 1994 - 1995 - 1996 - 1997 - 1998. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.

Variety	5 - year comparable average			
	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
GLENMAN *	45.6	60.0	32.2	10.1
FERGUS	44.9	60.0	30.4	11.5
MCNEAL	44.7	59.6	31.8	11.4
PIONEER 2375	43.9	61.0	34.8	11.0
WESTBRED 936	43.8	59.6	28.4	10.5
WESTBRED EXPRESS	43.2	60.3	26.2	11.1
HI-LINE	43.1	60.5	29.6	11.0
GRANDIN	43.0	59.3	33.2	11.6
LEN	42.9	59.5	32.0	11.7
AMIDON *	42.8	59.5	38.8	11.0
STOA	42.4	60.7	36.6	11.3
FORTUNA *	42.2	61.1	37.2	10.7
NEWANA	41.6	59.3	29.8	10.7
RAMBO *	41.8	59.5	29.0	10.9
SCHOLAR (MT 9433) *	41.3	60.5	37.2	12.1
WESTBRED 926	41.3	59.0	30.2	11.5
LEW *	41.2	60.3	37.0	10.8
TRENTON	39.5	59.9	39.4	11.3
ERNEST *	39.1	60.6	36.8	11.6

Cooperator: Don Bradley.

Location: Fifteen miles north of Cut Bank. (Glacier County)

* = Sawfly resistant varieties. (Amidon, Rambo and Scholar have partial resistance.)

Table 3. Dryland Spring Wheat variety trial grown near Oilmont, 1998. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% protein
MCNEAL		49.7	58.2	30	16.1
GLENMAN	*	48.3	58.6	30	14.4
HI-LINE		47.6	59.5	27	16.0
NEWANA		46.0	60.0	30	15.1
FORTUNA	*	45.8	60.0	34	14.8
MT 9609		44.7	60.0	27	15.2
RAMBO	*	44.7	61.2	27	15.7
LEW	*	44.4	59.7	35	15.4
MTHW9420		43.3	59.7	24	15.1
WESTBRED EXPRESS		43.3	58.6	24	15.5
PIONEER 2375		43.1	61.3	25	15.6
WESTBRED 936		42.2	58.7	24	16.8
GRANDIN		42.0	61.2	28	16.4
SCHOLAR (MT 9433)	*	40.8	60.8	26	16.4
AMIDON	*	40.5	58.6	33	15.6
FERGUS		39.6	59.7	26	16.1
LEN		39.5	60.3	30	16.3
ERNEST	*	39.2	61.2	27	16.5
STOA		37.5	59.7	27	16.9
WESTBRED 926		37.2	58.9	24	16.9
TRENTON		36.7	61.3	28	16.5

Cooperator: Terry Alme.

Location: Eight miles east of Oilmont. (Toole County)

Fertilizer: Topdress 50# N - 30# P, and 100# 11-52-0 with seed.

Previous crop: Fallow.

Date seeded: April 14, 1998.

Date harvested: August 6, 1998.

Rainfall: From May 29 to harvest was 6.3 inches.

* = Sawfly resistant varieties. (Amidon, Rambo and Scholar have partial resistance.) (Also, most experimental lines are resistant).

Yield experimental mean: 42.67

Error degrees of freedom: 40

F test for var: 4.14

C.V. 2: 4.26

LSD (0.05): 5.2

Table 4. **Five-year summary for dryland Spring Wheat varieties grown near Oilmont, MT. 1994 - 1995 - 1996 - 1997 - 1998. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.**

Variety	5 - year comparable average			
	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
MCNEAL	36.5	54.4	29.2	15.7
WESTBRED 936	34.9	55.1	24.3	16.0
HI-LINE	34.5	55.0	26.6	15.8
WESTBRED EXPRESS	34.3	55.7	23.8	14.9
GLENMAN *	34.3	54.6	28.8	14.1
PIONEER 2375	33.0	56.9	28.6	14.7
GRANDIN	32.8	55.3	30.2	15.5
NEWANA	32.7	55.0	27.4	14.3
WESTBRED 926	32.6	55.4	26.6	16.2
LEW *	32.0	56.4	33.0	15.5
SCHOLAR (MT 9433) *	31.9	58.0	30.4	15.5
FORTUNA *	31.9	57.8	34.4	14.5
FERGUS	31.4	55.7	26.0	15.7
RAMBO *	31.1	56.9	27.2	15.3
ERNEST *	31.0	57.2	31.6	15.7
AMIDON *	30.9	56.7	34.4	14.9
LEN	30.0	55.2	29.8	15.4
STOA	29.5	55.1	31.0	16.0
TRENTON	28.0	56.6	33.0	15.3

Cooperator: Terry Alme.

Location: Eight miles east of Oilmont, MT. (Toole County)

* = Sawfly resistant varieties. (Amidon, Rambo and Scholar have partial resistance.)

Table 5. Dryland Spring Wheat variety trial grown near Choteau, 1998. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% protein
FERGUS	58.2	58.1	34	15.1
WESTBRED EXPRESS	54.8	59.0	28	14.1
ERNEST *	53.4	60.4	38	15.5
WESTBRED 936	52.6	56.4	29	15.8
FORTUNA *	51.5	60.5	41	14.3
PIONEER 2375	51.3	58.8	35	15.3
MTHW9420	50.5	56.5	36	14.5
GRANDIN	49.8	54.8	39	15.9
WESTBRED 926	49.4	56.2	34	15.4
MCNEAL	48.1	56.0	38	15.8
HI-LINE	46.4	56.3	36	15.2
RAMBO *	45.0	57.3	34	14.0
AMIDON *	44.8	56.6	42	15.1
MT 9609	43.6	56.2	40	16.0
GLENMAN	42.8	54.9	38	15.0
TRENTON	42.8	56.9	43	15.9
STOA	42.6	55.6	44	16.2
SCHOLAR (MT 9433) *	42.1	57.0	38	16.7
LEW *	42.1	59.8	43	15.6
NEWANA	42.0	57.0	35	14.1
LEN	41.0	55.3	37	15.9

Cooperator: Roy Inbody.

Location: Twelve miles northeast of Choteau. (Teton County)

Fertilizer: 100 # 11-52-0 with the seed, + 60 #N actual 34-0-0.

Previous crop: Fallow.

Date seeded: April 20, 1998.

Date harvested: August 10, 1998.

* = Sawfly resistant varieties. (Amidon, Rambo and Scholar have partial resistance.) (Also, most experimental lines are resistant).

Yield experimental mean: 47.37

Error degrees of freedom: 40

F test for var: 1.76

C.V. 2: 7.98

LSD (0.05): 10.81

Table 6. Five-year summary for dryland Spring Wheat varieties grown near Choteau, MT. 1994 - 1995 - 1996 - 1997 - 1998. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.

Variety	5 - year comparable average			
	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
FERGUS	53.2	58.6	30.6	14.3
MCNEAL	52.8	56.8	32.6	14.5
WESTBRED 936	52.4	57.6	27.7	14.9
HI-LINE	52.1	59.0	30.0	14.3
NEWANA	51.8	54.6	30.2	13.6
GLENMAN *	50.7	56.1	32.2	13.7
FORTUNA *	50.3	60.3	37.8	14.7
PIONEER 2375	50.2	60.0	32.9	14.2
WESTBRED 926	50.1	57.6	29.8	14.8
RAMBO *	49.4	56.7	29.0	13.6
GRANDIN	49.3	57.7	33.4	15.0
WESTBRED EXPRESS	49.0	58.5	26.6	13.7
ERNEST *	48.3	60.5	35.8	15.2
SCHOLAR (MT 9433) *	47.5	57.1	35.7	15.2
LEN	46.5	57.4	32.8	14.8
STOA	45.8	57.7	37.0	15.1
AMIDON *	45.4	57.6	37.2	14.2
LEW *	45.0	59.1	37.8	14.5
TRENTON	44.7	58.7	38.6	15.3

Cooperator: Roy Inbody.

Location: Twelve miles northeast of Choteau, MT. (Teton County)

* = Sawfly resistant varieties. (Amidon, Rambo and Scholar have partial resistance.)