

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

Year: 2000

Location: Western Triangle Research Center, Conrad, MT.

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Off-station spring wheat variety trials were grown in Teton County near Choteau, Toole County near Oilmont, Glacier County near Cut Bank, and Chouteau County in the Knees Area. These four locations represent diverse environments with Choteau having deep soil and typically favorable moisture; the Knees with deep soil, intermediate moisture and warmer temperatures; Oilmont having less than favorable moisture; and Cut Bank with short growing season. The Cut Bank, Choteau and Knees trials were no-till planted on chem-fallow.

Results: Data for the four off-station locations are presented in Tables 1-8, and include the 2000 data and five-year averages. Rainfall was about 58% of normal during the growing season, resulting in drought stress at all sites. Test weights were in the low to mid 50 s range. Yields averaged about 32 bu/a for Cut Bank and Choteau, and 19 bu/a for the Knees and Oilmont.

Many of the wheat varieties were severely cut by sawfly at the Knees, including Rambo and Amidon. Exceptions were Conan and Scholar with medium stem cutting; and Fortuna, Lew and Ernest with slight cutting.

Yield differences between McNeal and Reeder were not significant in most cases. Likewise, Conan and Scholar were not significantly different, except at the Knees. Scholar and Conan were superior to Amidon for yield, agronomics and sawfly resistance at all locations (Scholar and Conan have medium sawfly resistance).

MT 9955 ranked high for yield at all locations, exceeding McNeal in most cases.

Future Plans: Variety trials will be repeated in year 2001 at these same locations.

Table 1 Dryland Spring Wheat variety trial grown near Cut Bank, 2000. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
MT 9955		34.9	56.4	28	15.2
REEDER		34.3	58.8	30	15.7
GRANDIN		34.3	57.3	33	15.9
CONAN	*	33.4	58.6	29	15.4
SCHOLAR	*	33.4	59.5	32	15.3
FORTUNA	*	33.2	58.1	33	14.6
MCNEAL		32.9	56.0	29	15.9
WESTBRED 936		32.6	56.6	27	15.2
ID377S		32.5	56.9	28	15.8
WESTBRED 926		32.4	56.2	29	16.0
MTHW 9710	*, **	31.5	56.8	26	15.4
HI-LINE		31.2	55.3	27	15.7
NEWANA		31.2	57.9	28	14.0
AMIDON	*	30.4	57.7	34	15.0
RAMBO	*	30.3	57.3	27	15.3
MTHW 9420	**	30.1	55.4	28	15.2
FERGUS		29.8	56.7	27	16.6
LEW	*	29.2	58.1	31	15.9
WESTBRED EXPRESS		28.7	56.2	26	15.0
ERNEST	*	27.8	56.9	31	16.8

Cooperator: Kevin Bradley.

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

Fertilizer: 106-31-0 (N-P-K)

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

Date seeded: April 25, 2000.

Date harvested: August 22, 2000.

Rainfall from planting to harvest: 1.5 inches.

Moist soil depth at planting: 30"

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

** = Hard white wheat.

Yield experimental mean: 31.69

Error degrees of freedom: 38

F test for var: 2.07

C.V. 2: 4.40

LSD (0.05): 4.00

Table 2 Five-year summary for dryland Spring Wheat varieties grown near Cut Bank, MT. 1996 - 1997 - 1998 - 1999 - 2000. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.

5 - year comparable average					
Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

MCNEAL		42.1	57.6	32	13.8
HI-LINE		41.0	58.3	30	13.2
WESTBRED EXPRESS		40.9	58.1	27	13.0
WESTBRED 936		40.9	58.0	28	13.0
FERGUS		40.1	57.8	29	14.0
WESTBRED 926		40.1	56.9	30	13.9
GRANDIN		39.9	57.4	33	14.1
MT HW9420	**	39.6	57.0	30	12.9
NEWANA		39.4	57.3	29	12.6
SCHOLAR	*	39.3	58.6	35	14.1
FORTUNA	*	38.2	59.8	36	12.9
RAMBO	*	38.1	58.0	29	13.2
AMIDON	*	37.2	58.2	37	13.5
ERNEST	*	36.8	59.3	35	14.4
LEW	*	35.9	58.2	35	13.2

Cooperator: Kevin Bradley.

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

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

** = Hard white wheat.

Table 3

Dryland Spring Wheat variety trial grown near Oilmont, 2000. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% protein
MT 9955		23.0	52.9	25	18.4
SCHOLAR	*	21.4	52.8	26	18.7
MTHW 9710	**	20.9	52.4	24	18.8
REEDER		20.1	54.0	25	19.0
CONAN	*	19.7	51.4	23	18.1
WESTBRED EXPRESS		19.0	50.8	22	17.7
MTHW 9420	**	18.9	51.9	23	18.7
MCNEAL		18.2	55.0	21	19.2
FERGUS		17.9	52.1	23	18.7
AMIDON	*	17.7	55.8	24	18.8
FORTUNA	*	17.6	55.2	24	18.2
WESTBRED 936		17.5	53.0	22	18.8
RAMBO	*	17.4	54.4	22	17.9
ERNEST	*	17.4	52.4	25	19.6
NEWANA		17.3	53.8	22	18.3
GRANDIN		17.3	54.3	24	18.9
WESTBRED 926		16.9	53.9	24	19.1
LEW	*	16.7	55.3	24	18.9
HI-LINE		16.0	55.5	20	19.1
ID377S		15.9	51.2	25	19.2

Cooperator: Terry Alme.

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

Applied fertilizer: 51-31-0 (N-P-K)

Previous crop: Fallow.

Date seeded: April 10, 2000.

Date harvested: August 1, 2000.

Rainfall: From planting to harvest was 2.75 inches.

Moist soil depth at planting: 24"

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

** = Hard white wheat.

Yield experimental mean: 18.34

Error degrees of freedom: 38

F test for var: 1.90

C.V. 2: 7.29

LSD (0.05): 3.83

Table 4 Five-year summary for dryland Spring Wheat varieties grown near Oilmont, MT. 1996 - 1997 - 1998 - 1999 - 2000. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.

5 - year comparable average					
Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

MCNEAL		30.2	51.5	27	16.9
WESTBRED EXPRESS		29.1	52.9	24	16.0
FORTUNA	*	29.0	54.9	32	15.8
HI-LINE		28.8	52.3	25	17.1
MT HW9420	**	28.4	51.4	26	16.4
SCHOLAR	*	28.1	53.6	29	16.9
NEWANA		27.9	52.7	26	16.4
WESTBRED 936		27.8	52.9	25	17.3
LEW	*	27.1	53.3	31	16.8
AMIDON	*	27.0	54.1	32	16.4
RAMBO	*	27.0	53.8	26	16.7
GRANDIN		26.9	53.3	29	16.8
WESTBRED 926		26.9	52.9	26	17.7
FERGUS		26.8	52.9	25	17.3
ERNEST	*	25.6	54.0	29	17.5

Cooperator: Terry Alme.

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

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

** = Hard white wheat.

Table 5

Dryland Spring Wheat variety trial grown near
Choteau, 2000. Mont. Agr. Expt. Sta., Western
Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% protein
HI-LINE		39.3	50.4	29	18.5
FORTUNA	*	38.3	56.2	36	17.7
MCNEAL		37.5	51.7	30	18.1
MT 9955		37.0	51.6	27	18.8
REEDER		34.8	54.5	31	18.4
WESTBRED EXPRESS		34.6	51.7	28	17.5
WESTBRED 936		34.1	51.2	28	19.6
WESTBRED 926		33.6	51.0	27	19.3
MTHW 9710	**	33.1	53.7	27	18.7
GRANDIN		32.4	51.4	31	18.5
SCHOLAR	*	31.6	54.0	35	18.7
FERGUS		31.5	52.4	30	18.9
CONAN	*	31.4	53.2	29	18.0
LEW	*	31.1	53.7	33	18.6
RAMBO	*	30.7	53.6	25	17.7
AMIDON	*	30.0	51.9	33	17.3
NEWANA		29.9	51.6	25	17.3
ERNEST	*	29.8	54.9	32	19.0
MTHW 9420	**	28.9	49.9	26	18.4
ID377S		28.2	52.1	27	18.7

Cooperator: Roy Inbody.

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

Fertilizer: 131-31-0 (N-P-K)

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

Date planted: April 24, 2000.

Date harvested: August 14, 2000.

Rainfall from planting to harvest: 3.25 inches

Moist soil depth at planting: 32"

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

Yield experimental mean: 32.89

Error degrees of freedom: 38

F test for var: 4.05

C.V. 2: 4.85

LSD (0.05): 4.57

Table 6 Five-year summary for dryland Spring Wheat varieties grown near Choteau, MT. 1996 - 1997 - 1998 - 1999 - 2000. 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	50.4	56.3	32	15.4
FORTUNA *	49.5	59.4	37	15.1
WESTBRED 936	49.2	56.3	28	16.0
FERGUS	49.0	57.0	30	15.4
NEWANA	48.6	54.5	29	14.2
HI-LINE	47.8	56.5	30	15.3
ERNEST *	47.5	58.8	35	15.7
RAMBO *	47.5	55.6	28	14.5
MT HW9420 **	47.0	55.8	29	14.6
GRANDIN	46.9	56.0	33	15.8
WESTBRED 926	46.7	56.3	29	15.9
SCHOLAR *	46.5	56.4	36	15.6
WESTBRED EXPRESS	43.7	56.6	27	14.7
LEW *	42.3	57.7	37	15.1
AMIDON *	41.2	55.6	36	14.9

Cooperator: Roy Inbody.

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

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

** = Hard white wheat.

Table 7 Dryland Spring Wheat variety trial grown near the Knees, 2000. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
FORTUNA	*	25.3	54.9	32	15.3
MT 9955		24.2	49.0	28	16.5
WESTBRED 926		24.2	51.3	27	17.2
HI-LINE		23.6	52.3	26	16.9
MCNEAL		22.5	47.8	29	16.3
FERGUS		22.5	52.5	25	17.5
MTHW 9710	**	22.4	54.1	26	17.2
WESTBRED 936		21.8	53.6	24	17.7
MTHW 9420	**	21.7	50.5	26	16.6
CONAN	*	20.9	47.8	26	16.5
LEW	*	19.8	51.2	31	16.3
RAMBO	*	19.6	48.4	26	15.8
WESTBRED EXPRESS		19.3	49.8	23	15.8
REEDER		16.9	50.4	27	16.7
ID377S		16.9	49.6	29	17.0
SCHOLAR	*	16.6	44.9	28	16.8
ERNEST	*	16.3	50.2	30	18.0
GRANDIN		15.6	51.0	29	16.8
NEWANA		14.4	46.9	26	15.9
AMIDON	*	12.9	46.4	32	17.2

Cooperator: Dan Picard.

Location: Thirty miles east of Brady. (Chouteau, County)

Fertilizer: 86-31-15 (N-P-K)

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

Date seeded: April 24, 2000.

Date harvested: August 1, 2000.

Rainfall: From planting to harvest was 3.75 inches.

Moist soil depth at planting: 24"

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

** = Hard white wheat.

Yield experimental mean: 19.86

Error degrees of freedom: 38

F test for var: 16.44

C.V. 2: 4.48

LSD (0.05): 2.55

Table 8 Two-year summary on dryland Spring Wheat varieties grown near the Knees. 1999 - 2000 Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, Montana.

2 - year comparable average					
Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

FORTUNA	*	28.2	53.7	32	15.5
CONAN	*	26.1	51.1	28	16.4
HI-LINE		25.2	51.8	27	17.0
WESTBRED 926		24.2	50.8	27	17.2
MCNEAL		24.0	48.6	29	16.7
LEW	*	21.8	51.4	31	16.7
REEDER		21.5	51.3	29	16.8
WESTBRED 936		20.8	51.8	25	17.5
MTHW 9420	**	20.5	48.9	27	16.5
ERNEST	*	20.1	51.5	31	17.6
RAMBO	*	20.0	49.6	26	16.8
FERGUS		19.9	51.2	26	17.1
NEWANA		19.9	49.2	27	16.3
GRANDIN		17.8	48.9	28	16.8
WESTBRED EXPRESS		17.1	49.7	24	15.6
SCHOLAR	*	16.0	46.6	30	17.0
AMIDON	*	13.2	47.8	30	16.8

Cooperator: Dan Picard.

Location: Thirty miles east of Brady. (Chouteau County)

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

** = Hard white wheat.