

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

Year: 2003

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 Teton 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, cool growing season. The Cut Bank, Knees and Choteau trials were no-till planted on chem-fallow.

Results: Data for the off-station locations are presented in Tables 1-8, and include the 2003 data and five-year averages. Moisture stress was prevalent by mid-season, resulting in test weights in the low to mid-50's. At Oilmont, where conditions were especially dry, test weights were in the 40's.

Averaged over several locations and years, field performance of the semi-dwarf sawfly-resistant variety 'Choteau' (MT9929) was excellent. Yield and test weight of 'Choteau' were among the highest; with yield equal to McNeal, Reeder and Outlook, and 10% higher than Fortuna and Ernest. Heading date for 'Choteau' was 2 days earlier than McNeal, 1 day earlier than Ernest, and 1 day later than Fortuna. Stem-solidness (sawfly resistance) rating for 'Choteau' was 22, compared to 20 for Fortuna, and 16 for Ernest. (Maximum rating = 25).

Future Plans: Variety trials will be repeated in 2004 at these same locations.

Table 1

Dryland Spring Wheat variety trial grown near
Cut Bank, 2003. Mont. Agr. Expt. Sta., Western
 Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant Hgt. inches	% Protein
MCNEAL		38.8	54.3	32	14.8
OUTLOOK		38.0	55.0	32	13.7
CHOTEAU (MT 9929)	*	35.7	57.6	30	13.8
NEWANA		35.5	56.0	30	13.5
RAMBO	*	34.8	55.1	30	13.9
HI-LINE		34.4	53.6	29	15.3
FORTUNA	*	34.1	54.3	37	14.6
Reeder		33.1	57.2	32	14.2
LEW	*	31.9	54.9	37	14.7
HANK		31.7	54.1	30	14.8
EXPLORER	**	31.3	57.4	29	14.5
WESTBRED 926		30.2	53.9	28	15.4
Conan	*	29.8	56.1	28	15.0
WESTBRED 936		29.6	55.7	28	14.9
ERNEST	*	29.6	55.5	35	14.9
SCHOLAR	*	28.5	56.2	37	14.5
MT 9918		26.3	55.7	37	13.8
MTHW 9420	**	24.2	55.0	29	14.1
AMIDON	*	22.3	55.6	37	14.3
WESTBRED EXPRESS		16.4	55.5	26	14.1

Cooperator: Kevin Bradley.

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

Fertilizer: 71-52-0 (N-P-K).

Previous crop: No-till chemical fallow.

Date seeded: April, 24, 2003.

Date harvested: Aug. 18, 2003.

Rainfall from planting to harvest: 00 inches.

Stored soil moisture at planting: 0 inches.

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

** = Hard white wheat.

Yield experimental mean: 30.80

Error degrees of freedom: 38.00 F test for var: 3.41

C.V. 2: 9.17 LSD (0.05): 8.09

Table 2 **Five-year summary** for dryland **Spring Wheat** varieties grown near **Cut Bank, MT.** 1999 - 2000 - 2001 - 2002 - 2003. 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	35.1	56.5	30	16.1	
OUTLOOK	34.8	55.5	28	15.6	
REEDER	32.7	58.4	29	15.9	
RAMBO	*	31.3	57.8	27	15.3
SCHOLAR	*	31.3	57.6	31	16.0
HI-LINE		31.3	56.9	27	15.9
NEWANA		30.8	57.4	27	14.9
FORTUNA	*	30.5	57.8	32	15.9
LEW	*	30.5	57.3	32	15.6
WESTBRED 926		30.5	56.0	28	16.1
ERNEST	*	30.4	58.3	31	16.7
WESTBRED 936		30.1	56.9	26	16.0
CHOTEAU	*	29.6	58.5	26	16.1
AMIDON	*	29.6	57.1	33	15.7
EXPLORER	**	29.4	57.7	26	15.9
CONAN	*	29.1	58.4	26	15.7
HANK		27.2	55.4	27	16.0
MTHW9420	**	26.8	56.3	26	15.1
WESTBRED EXPRESS		25.1	57.1	25	15.3

Cooperator: Kevin Bradley.

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

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

** = Hard white wheat.

@ = Plant heights based on 4 years average. (1999-00-01-03)

Table 3

Dryland Spring Wheat variety trial grown near
Oilmont, 2003. Mont. Agr. Expt. Sta., Western
 Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
WESTBRED EXPRESS		23.6	47.2	27	18.4
HANK		22.7	46.5	28	20.4
WESTBRED 936		22.5	46.4	26	20.1
FORTUNA	*	22.4	48.5	35	18.7
Reeder		22.0	47.2	30	19.2
EXPLORER	**	21.8	47.4	29	19.7
OUTLOOK		20.8	44.8	30	19.5
ERNEST	*	20.7	50.9	32	20.1
WESTBRED 926		20.3	44.9	27	20.2
MTHW 9420	**	19.8	44.0	30	19.4
MT 9918		19.6	48.2	32	19.5
CHOTEAU (MT 9929)	*	19.5	50.7	28	18.9
MCNEAL		19.4	43.5	26	20.3
NEWANA		18.7	47.0	26	18.9
Conan	*	18.6	47.6	27	19.3
SCHOLAR	*	18.5	47.5	32	20.4
AMIDON	*	18.4	48.8	34	19.4
RAMBO	*	18.3	49.8	26	19.0
HI-LINE		17.7	44.9	26	20.3
LEW	*	16.3	48.3	35	20.9

Cooperator: Terry Alme.

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

Fertilizer: 100# 11-52-0 (N-P-K).

Previous crop: Fallow.

Date seeded: April 22, 2003.

Date harvested: Aug. 5, 2003.

Stored soil moisture at planting: 5 inches.

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

** = Hard white wheat.

Yield experimental mean: 20.07

Error degrees of freedom: 38.00

F test for var: 2.12

C.V. 2: 6.66

LSD (0.05): 3.83

Table 4 **Four-year summary** for dryland **Spring Wheat** varieties grown near **Oilmont, MT.** 1998 - 1999 - 2000 - 2003
 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
HANK		30.6	52.3	26	18.3
EXPLORER	**	30.2	52.1	27	17.7
REEDER		29.6	53.5	28	17.7
FORTUNA	*	28.6	53.9	31	16.7
MCNEAL		28.2	50.9	26	18.1
OUTLOOK		28.0	50.4	27	17.5
WESTBRED EXPRESS		27.1	52.7	24	16.8
CONAN	*	27.1	51.7	26	17.2
MTHW9420	**	26.6	50.9	26	17.5
NEWANA		26.5	53.3	26	17.2
SCHOLAR	*	26.4	52.5	28	18.1
CHOTEAU	*	26.3	57.1	26	16.9
WESTBRED 936		26.2	52.9	24	18.1
HI-LINE		26.1	52.1	25	18.1
RAMBO	*	26.0	54.4	25	17.2
AMIDON	*	25.7	53.7	30	17.4
LEW	*	25.3	53.1	31	17.9
ERNEST	*	25.2	54.9	28	18.3
WESTBRED 926		24.9	52.3	25	18.5

Cooperator: Terry Alme.

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

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

** = Hard white wheat.

Table 5

Dryland Spring Wheat variety trial grown near
Choteau, 2003. Mont. Agr. Expt. Sta., Western
 Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
FORTUNA	*	39.8	55.4	39	17.6
HI-LINE		39.3	51.5	32	18.5
CHOTEAU (MT 9929)	*	39.3	53.6	29	18.3
MCNEAL		39.0	51.2	33	18.3
Conan	*	38.0	54.5	28	18.0
WESTBRED 936		37.3	53.1	30	18.3
Reeder		36.9	52.0	32	18.4
OUTLOOK		36.9	51.1	30	18.0
HANK		36.1	49.9	29	19.7
RAMBO	*	35.8	53.7	28	18.0
ERNEST	*	35.6	54.4	38	18.6
EXPLORER	**	35.5	52.7	30	17.8
WESTBRED 926		35.1	52.4	30	18.5
MT 9918		34.7	53.6	34	18.1
LEW	*	34.3	56.0	40	18.1
NEWANA		33.8	50.5	28	17.9
SCHOLAR	*	33.5	53.8	35	18.7
MTHW 9420	**	33.5	50.0	29	17.6
AMIDON	*	32.4	53.6	37	17.7
WESTBRED EXPRESS		31.9	52.8	26	17.2

Cooperator: Roy Inbody.

Location: Twelve miles northeast of Choteau (Teton County)

Fertilizer: 130-52-0 (N-P-K).

Previous crop: No-till chemical fallow.

Date seeded: April 22, 2003.

Date harvested: Aug. 13, 2003.

Rainfall from May 10 to harvest was 3.5 inches.

Stored soil moisture at planting: 7 inches.

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

** = Hard white wheat.

Yield experimental mean: 35.95

Error degrees of freedom: 38.00

F test for var: 0.96

C.V. 2: 6.68

LSD (0.05): 6.87

Table 6

Five-year summary for **Dryland Spring Wheat** varieties grown near **Choteau**. (1998 - 1999 - 2000 - 2002 - 2003) Montana Agr. Expt. Sta., Western Triangle Ag. Res. Center, Conrad, MT.

5 - year comparable average					

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

CHOTEAU	*	43.4	55.7	28	16.6
MCNEAL		42.4	55.2	29	17.1
FORTUNA	*	41.3	58.1	34	16.6
OUTLOOK		41.3	54.4	29	16.6
REEDER		40.6	56.2	31	17.2
EXPLORER	**	40.3	55.9	28	16.6
ERNEST	*	39.8	57.4	32	17.3
CONAN	*	39.6	56.8	28	16.8
HI-LINE		39.6	54.9	28	16.9
WESTBRED 936		39.5	55.1	27	17.7
RAMBO	*	39.4	56.4	26	16.3
HANK		38.9	52.5	26	18.3
SCHOLAR	*	38.4	56.4	33	17.2
MTHW9420	**	38.4	54.4	28	16.4
NEWANA		38.2	55.5	26	16.1
WESTBRED 926		37.6	55.1	27	17.4
LEW	*	36.8	57.1	34	16.5
WESTBRED EXPRESS		35.5	55.3	25	16.3
AMIDON	*	34.2	54.7	33	16.1

Cooperator: Roy Inbody.

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

Table 7 **Dryland Spring Wheat** variety trial grown near the **Knees**, 2003. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
WESTBRED EXPRESS		39.8	51.8	29	16.0
MT 9918		39.2	53.4	38	16.3
HI-LINE		39.1	50.7	30	16.8
WESTBRED 926		38.7	51.2	31	17.6
CHOTEAU (MT 9929) *		38.7	54.0	30	16.3
EXPLORER **		38.5	52.2	32	16.8
FORTUNA *		38.1	54.7	39	16.0
WESTBRED 936		38.0	51.6	31	16.7
HANK		37.9	50.8	32	17.2
MTHW 9420 **		36.7	49.2	32	16.7
Reeder		35.7	52.2	33	16.7
MCNEAL		34.8	51.8	32	16.3
AMIDON *		33.8	53.1	39	16.6
SCHOLAR *		32.4	54.8	38	17.6
LEW *		30.5	52.8	39	16.8
Conan *		29.6	51.7	30	16.7
ERNEST *		29.6	53.9	35	16.9
NEWANA		29.0	50.7	30	14.5
OUTLOOK		28.1	50.2	32	16.2
RAMBO *		25.8	51.6	30	16.6

Cooperator: Dan Picard.

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

Fertilizer: 51-52-0 (N-P-K).

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

Date seeded: April 22, 2003.

Date harvested: August 5, 2003.

Rainfall: June 1 to harvest was 2.1 inches.

Stored soil moisture at seeding: 7 inches.

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

** = Hard white wheat.

Yield experimental mean: 34.69

Error degrees of freedom: 38.00

F test for var: 5.14

C.V. 2: 5.69

LSD (0.05): 5.65

Table 8 **Five-year summary on dryland Spring Wheat** varieties grown near the **Knees**. 1999 - 2000 - 2001 - 2002 2003. Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, Montana.

5 - year comparable average					

Variety		Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein

CHOTEAU	*	27.9	53.8	25	16.4
FORTUNA	*	27.6	55.6	32	16.2
HI-LINE		27.0	53.9	26	16.8
HANK		26.5	53.1	26	16.9
MCNEAL		26.1	52.6	28	16.3
WESTBRED 926		25.6	53.6	27	17.1
EXPLORER	**	25.4	54.9	27	16.5
REEDER		25.4	54.2	28	16.4
CONAN	*	24.8	54.0	26	16.4
LEW	*	24.2	54.7	31	16.4
ERNEST	*	23.8	54.4	31	17.0
WESTBRED 936		23.7	54.2	26	16.9
OUTLOOK		23.6	52.4	28	16.0
MTHW9420	**	23.6	52.4	27	15.9
RAMBO	*	22.7	53.2	26	16.1
SCHOLAR	*	22.6	52.7	30	16.7
NEWANA		22.5	53.0	26	15.3
AMIDON	*	20.9	52.8	31	16.3
WESTBRED EXPRESS		20.4	53.2	24	15.8

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.