

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

Year: 2004

Location: Western Triangle Research Center, Conrad, MT.

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Dryland off-station spring wheat variety trials were grown in Teton County near Choteau, Glacier County near Cut Bank, and Chouteau County in the Knees Area. An irrigated spring wheat variety trial was grown at Conrad. These locations represent diverse environments with Teton having deep soil and typically favorable moisture; the Knees with deep soil, intermediate moisture and warmer temperatures; 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 four locations are presented in Tables 1-9, and include the 2004 data and four-year averages. Table 9 is a summary of all the Western Triangle area spring wheat tests over the past five years, and is equivalent to 20 tests on each variety.

Due to unusual circumstances, nitrogen fertilizer was not applied to the dryland spring wheat trial at Cut Bank. Consequently, protein levels for this trial was very low in 2004.

Averaged across all of the Western Triangle area tests over the past five years, the top yielding spring wheat varieties were 'Choteau', 'Hank', 'Reeder', 'McNeal', 'Outlook' and 'HiLine' (Table 9). Choteau and Reeder had above average test weight, and average protein. Choteau had the highest stem-solidness (sawfly resistance) rating of 22, compared to 20 for Fortuna, and 16 for Ernest. (Maximum rating = 25). Choteau averaged 5 bu/acre higher yield than Fortuna and Ernest. Heading date for 'Choteau' was slightly earlier than McNeal and Ernest, and slightly later than Fortuna. Choteau is bearded and has a semidwarf height.

Future Plans: Variety trials will be repeated in 2005 at these same locations.

Table 1. 2004 OFFSTATION SPRING WHEAT VARIETIES, CUT BANK.

VARIETY		YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	% Protein
HI-LINE		47.4	63.9	33	9.8
MT 0249		47.3	63.8	31	9.8
MT 0245		46.1	64.1	33	10.0
FORTUNA	++	45.9	63.7	41	11.2
OUTLOOK		45.7	62.5	35	9.5
RAMBO	+	45.6	63.4	31	8.9
CHOTEAU	++	45.2	64.3	32	10.1
MCNEAL		44.1	63.1	34	10.4
MTHW 0202		42.3	64.7	33	9.3
Conan	+	42.1	64.1	31	10.0
EXPLORER	HW	39.8	63.1	32	9.0
HANK		39.4	62.9	32	9.1
Reeder		38.9	64.1	34	10.9
MT 0266		38.3	62.3	32	10.3
SCHOLAR	+	36.9	63.7	37	10.7
ERNEST	+	36.8	63.1	38	9.7
ALSEN		36.4	63.9	34	10.3
MTHW 9420		35.9	64.0	34	8.6
AMIDON	+	34.3	62.3	39	10.1
WESTBRED 926		34.0	62.4	31	10.1

Yield MEAN 41.1 bu C.V.1 = 10.49

LSD (0.05) 7.13 bu C.V.2 = 6.06

++ Sawfly resistant.

+ Partial sawfly resistance.

Cooperator & Location: Kevin Bradley, north of Cut Bank, MT.

Conducted by MSU Western Triangle Ag Research Center.

Planted Apr 19, 2004, no-till chem. fallow. Harvested Sept 4, 2004.

Fertilizer, actual: 11-52-0 with seed.

Table 2. Four-year averages, Spring Wheat varieties, Cut Bank, 2001-04

Variety	4-Year Average			
	Yield bu/a	Test weight	Height in.	Protein %
McNeal	35.1	58.0	31.0	14.4
Outlook	34.1	57.2	30.3	14.0
Rambo +	33.8	59.3	27.7	13.4
Fortuna ++	33.7	58.8	35.0	14.8
HiLine	32.2	58.8	28.7	14.5
Choteau ++	32.0	59.9	29.7	14.5
Reeder	30.6	59.6	29.7	14.3
Ernest +	29.4	59.6	33.0	14.6
Scholar +	29.2	59.1	33.0	14.6
Explorer HW	28.7	59.3	28.0	14.1
Conan +	28.6	59.8	27.0	14.2
Amidon +	28.4	58.2	34.3	14.2
Hank	28.0	57.3	29.7	14.1
WB 926	27.5	57.5	27.7	14.7
Mt 9420 HW	25.3	58.4	28.3	13.3
nursery mean	30.5	58.8	30.1	14.3

Sawfly resistant ++

Partial sawfly resistance +

Cooperator & Location: Kevin Bradley, north of Cut Bank, MT

Conducted by MSU Western Triangle Agr Research Center.

Table 3. 2004 OFFSTATION SPRING WHEAT VARIETIES, CHOTEAU.

VARIETY	YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	% Protein
MT 0245	77.0	61.0	39	14.9
OUTLOOK	74.9	60.0	39	15.0
MT 0249	71.5	59.7	36	15.6
Reeder	66.9	60.7	40	16.2
HANK	66.6	58.5	36	15.7
CHOTEAU ++	65.8	59.7	36	15.4
Conan +	65.5	60.7	35	15.0
ALSEN	65.2	60.7	37	15.9
MCNEAL	64.9	59.3	40	15.7
MT 0266	64.7	58.1	37	15.9
HI-LINE	63.4	58.2	36	15.3
WESTBRED 926	61.3	58.6	36	15.7
MTHW 0202	60.4	61.2	37	14.7
ERNEST +	60.0	60.2	45	16.2
MTHW 9420	58.6	59.3	36	14.5
EXPLORER HW	57.2	60.2	36	14.5
FORTUNA ++	54.7	61.2	46	16.1
RAMBO +	53.6	59.5	37	14.7
SCHOLAR +	52.9	60.5	44	16.6
AMIDON +	52.1	59.4	46	15.2

Yield MEAN 62.9 bu C.V.1 = 6.46

LSD (0.05) 6.71 bu C.V.2 = 3.73

++ Sawfly resistant.

+ Partial sawfly resistance.

Cooperator & Location: Roy Inbody, east of Choteau, MT
 Planted Apr 19, 2004 on chem. fallow. Harvested Sept 4, 2004.
 Fertilizer, actual: 11-52-0 with seed + 50 N topdress.
 Conducted by MSU Western Triangle Ag Research Center.

Table 4. Three-year averages, Spring Wheat varieties, Choteau, 2001-04

Variety	3-Year Average			
	Yield bu/a	Test weight	Height in.	Protein %
Outlook	44.9	56.2	29.7	16.7
Reeder	43.0	57.4	30.7	17.5
Choteau ++	42.9	57.0	28.3	16.9
McNeal	42.6	56.1	30.0	17.1
HiLine	42.3	56.4	28.3	17.0
Conan +	41.9	58.1	27.3	16.9
Hank	41.9	55.5	28.0	17.8
WB 926	39.6	56.5	28.0	17.3
Explorer HW	39.2	56.9	29.0	16.3
Mt 9420 HW	38.4	55.9	28.0	16.5
Ernest +	38.2	58.2	33.3	17.8
Fortuna ++	38.0	58.7	34.7	17.3
Rambo +	36.3	57.6	27.7	16.8
Scholar +	36.2	57.8	33.7	17.7
Amidon +	33.3	56.4	34.7	16.3
nursery mean	40.5	57.0	29.9	17.0

Sawfly resistant ++

Partial sawfly resistance +

Cooperator & Location: Roy Inbody, east of Choteau, MT. Teton Co.

Conducted by MSU Western Triangle Agr Research Center.

Table 5. 2004 OFFSTATION SPRING WHEAT VARIETIES, The "KNEES" area.

VARIETY	YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	% Protein
MT 0245	55.3	57.3	36	14.6
MT 0249	54.7	56.3	36	14.9
MT 0266	54.5	55.4	38	14.6
OUTLOOK	53.4	55.5	38	14.5
Reeder	52.8	56.6	37	16.3
MCNEAL	51.7	54.7	35	15.9
HANK	51.4	53.1	35	16.4
CHOTEAU ++	50.5	59.5	35	14.8
MTHW 0202	50.3	59.3	35	15.2
MTHW 9420	50.0	54.3	35	15.4
WESTBRED 926	49.0	53.8	33	17.4
EXPLORER HW	48.4	56.6	35	14.9
Conan +	48.3	56.4	33	15.5
FORTUNA ++	48.1	58.0	42	15.6
HI-LINE	47.9	55.3	32	15.6
ALSEN	47.4	57.1	38	16.6
SCHOLAR +	46.4	57.2	40	16.8
ERNEST +	44.5	59.5	40	15.6
ABBEY +	44.4	57.8	42	-
AMIDON +	43.3	59.1	39	13.5
RAMBO +	41.3	55.7	31	16.3

Yield MEAN 49.5 bu C.V.1 = 7.90

LSD (0.05) 6.46 bu C.V.2 = 4.56

++ Sawfly resistant.

+ Partial sawfly resistance.

Cooperator & Location: Dan Picard, Knees area east of Brady, MT.

Planted Apr 13, 2004 on chem. fallow. Harvested Aug 10, 2004.

Fertilizer, actual: 11-52-0 with seed + 50 N topdress.

Conducted by MSU Western Triangle Ag Research Center.

Table 6. Four-year averages, Spring Wheat varieties, Knees, 2001-04.

Variety	4-Year Average			
	Yield bu/a	Test weight	Height in.	Protein %
Choteau ++	35.3	56.9	27.5	15.9
Hank	34.5	54.9	28.3	16.5
Reeder	34.3	56.3	29.3	16.3
McNeal	33.6	55.2	29.5	16.0
HiLine	33.1	55.3	27.0	16.5
Outlook	32.5	54.9	30.5	15.5
Fortuna ++	32.4	57.2	34.0	16.4
Explorer HW	32.2	56.3	29.0	15.9
Scholar +	31.9	56.9	32.8	16.7
WB 926	31.8	55.1	28.0	17.1
Mt 9420 HW	31.8	54.6	28.8	15.5
Ernest +	30.9	57.1	33.0	16.3
Amidon +	30.3	56.9	33.5	15.4
Conan +	30.0	56.0	27.3	16.2
Rambo +	28.8	55.6	27.0	16.1
nursery mean	32.5	56.0	29.7	16.1

Sawfly resistant ++

Partial sawfly resistance +

Cooperator & Location: Dan Picard, Knees area, Chouteau County.

Conducted by MSU Western Triangle Agr Research Center.

Table 7. 2004 IRRIGATED SPRING WHEAT VARIETIES, CONRAD.

VARIETY		YIELD BU/AC	TESTWT LB/BU	HEAD DATE	Height In.	% Protein
CHOTEAU	++	105.7	63.5	184	35	12.6
HANK		104.5	61.6	183	36	13.4
MT 0249		101.7	62.1	184	35	14.1
WESTBRED 926		100.8	61.2	182	36	13.8
MCNEAL		99.4	62.7	184	37	13.3
MT 0245		96.8	62.2	185	37	13.8
MTHW 0202		96.1	64.1	181	36	11.7
HI-LINE		95.9	63.3	183	34	12.8
RAMBO	+	95.5	62.6	185	35	12.9
MTHW 9420		95.5	61.9	183	35	12.1
Reeder		95.4	62.2	184	39	14.6
MT 0266		94.6	61.4	182	37	12.8
OUTLOOK		93.0	61.5	185	35	12.9
EXPLORER	HW	89.1	62.5	182	35	12.7
ALSEN		88.0	63.0	183	37	13.9
SCHOLAR	+	86.2	62.8	185	42	14.5
Conan	+	86.1	62.7	183	38	12.9
ERNEST	+	86.1	62.4	184	44	14.6
AMIDON	+	84.2	62.0	184	45	14.3
ABBAY +		68.5	62.8	-	41	-
FORTUNA	++	67.5	62.6	183	41	14.3

Yield MEAN 93.1 bu C.V.1 = 7.89
LSD (0.05) 12.15 bu C.V.2 = 4.56
++ Sawfly resistant.
+ Partial sawfly resistance.

Location: MSU Western Triangle Ag Research Center, Conrad, MT
Planted Apr 21, 2004 on fallow. Harvested Sept 5, 2004.
Fertilizer, actual: 11-52-0 with seed + 60 N topdress.

Table 8. Four-year averages, Irrigated Spring Wheat varieties, 2001-04.

Variety	4-Year Average				
	Yield bu/a	Test wt.	Height in.	Head date	Protein %
Hank	82.2	61.7	31.0	180.3	13.9
WB 926	78.3	61.9	31.0	179.8	13.9
Choteau ++	77.1	62.4	31.3	181.8	13.9
HiLine	77.0	63.1	31.3	180.0	13.7
McNeal	75.6	61.5	34.3	182.3	13.7
Reeder	75.2	62.8	33.5	180.8	14.2
Rambo +	75.0	62.2	31.5	182.8	13.1
Mt 9420 HW	74.2	62.6	30.8	180.3	13.0
Outlook	73.9	60.8	32.8	182.5	13.7
Explorer HW	71.8	62.4	30.3	180.0	13.9
Scholar +	70.6	62.5	38.5	183.5	14.3
Conan +	70.0	62.1	32.5	181.5	13.9
Amidon +	67.7	61.8	39.5	182.0	14.1
Ernest +	67.7	62.4	39.3	181.5	14.8
Fortuna ++	62.1	62.6	37.8	180.3	14.4
nursery mean	73.4	62.2	33.6	181.3	13.9

Sawfly resistant ++

Partial sawfly resistance +

Location: MSU Western Triangle Agr Research Center, Conrad

Table 9. Twenty-Year x Location Averages - **Spring Wheat** Varieties.
Western Triangle Area

Variety	20-Year x Location Average *			
	Yield bu/a	Test weight	Height in.	Protein %
Choteau ++	46.3	59.3	29.0	15.2
Hank	45.9	57.6	29.2	15.3
Reeder	45.8	59.3	30.6	15.3
McNeal	45.6	58.1	30.8	15.1
Outlook	45.4	57.6	30.5	14.9
HiLine	45.0	58.7	28.5	15.3
WB 926	44.0	58.1	28.5	15.6
Rambo +	42.7	58.8	28.4	14.7
Explorer HW	42.3	59.0	28.7	15.0
Conan +	42.1	59.2	28.4	15.2
Mt 9420 HW	42.1	58.2	28.8	14.4
Scholar +	41.6	59.3	34.0	15.6
Fortuna ++	41.3	59.6	35.1	15.4
Ernest +	40.9	59.6	34.4	15.7
Amidon +	39.4	58.5	35.1	14.9
Mean	43.6	58.8	30.6	15.2

Sawfly resistant ++

Partial sawfly resistance +

HW = Hard White

* Conrad 5yr + Conrad Irr 4yr + Choteau 3yr + Knees 4yr + Cut Bank 4yr.

Years included are 2000 to 2004.

Conducted by MSU Western Triangle Agr Research Center.