

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

Year: 2002

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, 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. Trials at the Knees included both spring wheat and durum.

Data for the harvested off-station locations are presented in Tables 1-6, and include the 2002 data and five-year averages.

Results: An unusual spring storm severely stressed the nursery at Cut Bank, resulting in substantial reductions in tillering and plant height. Stress on the nursery is reflected in the unusually high coefficient of variation (C.V.=12.07), and therefore, little information can be gained from the 2002 data. The Oilmont trial was not established due to drought, and the Choteau trial was lost to hail.

At the Knees location, the top yielders were Hiline, McNeal, Reeder, Hank, and the sawfly-resistant line MT 9929. The sawfly-resistant varieties Scholar and Ernest also ranked high. Sawfly resistance is highly desirable, if not essential, at the Knees location; and the performance of MT 9929 is encouraging. MT 9929 had a very solid stem, more so than Fortuna; and yielded higher than Ernest.

Future Plans: Variety trials will be repeated in 2003 at these same locations.

Table 1. **Dryland Spring Wheat** variety trial grown near **Cut Bank, 2002.** Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety		Yield bu/ac	Test wt. lbs/bu.	% Protein
AMIDON	*	31.5	56.5	15.7
RAMBO	*	30.2	57.6	15.3
LEW	*	30.1	58.0	14.2
MCNEAL		28.6	57.3	14.1
FORTUNA	*	26.8	58.0	15.7
ERNEST	*	26.5	59.5	16.4
SCHOLAR	*	26.5	56.6	14.9
OUTLOOK (MT 9874)		25.8	54.2	16.2
MT 9806		24.3	55.6	16.0
Reeder		23.4	57.6	15.1
EXPLORER	**	21.1	59.3	15.6
MT 9929	*	20.6	59.4	16.5
HI-LINE		19.8	61.0	15.6
WESTBRED 926		19.6	57.6	15.5
NEWANA		19.5	58.7	15.2
WESTBRED 936		19.3	58.4	15.3
CONAN	*	18.9	58.3	14.9
MTHW 9420	**	18.8	58.1	13.4
HANK		17.8	55.5	15.4
WESTBRED EXPRESS		11.8	58.9	15.7

Cooperator: Kevin Bradley.

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

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

Previous crop: No-till chemical fallow.

Date seeded: May 2, 2002.

Date harvested: Sept. 11, 2002.

Rainfall from planting to harvest: 12 inches.

Stored soil moisture at planting: 5 inches.

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

** = Hard white wheat.

Yield experimental mean: 23.04
Error degrees of freedom: 38.00
F test for var: 3.41
C.V. 2: 12.07
LSD (0.05): 7.96

Table 2. **Five-year summary** for dryland **Spring Wheat** varieties grown near **Cut Bank, MT.** 1998 - 1999 - 2000 - 2001 - 2002. Mont. Agr. Expt. Station, Western Triangle Ag. Research Center, Conrad, MT.

5 - year comparable average					

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

MCNEAL		39.0	57.9	30	15.2
REEDER		38.2	60.0	31	15.1
HI-LINE		36.9	58.7	28	14.8
SCHOLAR	*	36.6	58.7	33	15.2
RAMBO	*	36.4	59.2	27	14.5
AMIDON	*	36.1	58.3	35	14.9
WESTBRED 926		36.1	57.4	30	15.1
WESTBRED 936		35.8	58.1	26	15.0
NEWANA		35.1	58.2	27	14.1
ERNEST	*	34.9	60.0	33	15.8
MTHW9420	**	34.6	57.6	28	14.0
FORTUNA	*	33.5	59.5	34	14.9
LEW	*	33.6	58.9	33	14.6
CONAN	*	34.1	59.9	28	14.6
EXPLORER	**	33.9	58.5	27	15.0
WESTBRED EXPRESS		33.8	58.5	26	14.4

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. (1998-99-00-01)

Table 3. **Dryland Spring Wheat** variety trial grown near the **Knees**, 2002. 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		30.8	59.3	25	16.8
MCNEAL		30.6	58.6	29	15.6
Reeder		29.2	59.3	24	16.3
MT 9929	*	28.9	58.0	24	15.9
HANK		28.5	59.8	24	16.1
SCHOLAR	*	27.3	60.5	27	16.0
MTHW 9420	**	27.1	58.1	26	14.9
ERNEST	*	27.0	58.6	32	15.9
OUTLOOK (MT9874)		26.7	58.1	28	15.6
AMIDON	*	25.9	58.8	31	15.5
WESTBRED 936		25.8	59.3	26	16.7
LEW	*	25.6	60.8	31	15.0
RAMBO	*	25.2	58.8	25	15.7
NEWANA		25.1	60.1	25	14.3
FORTUNA	*	24.6	59.2	31	16.6
EXPLORER	**	24.6	59.8	26	16.0
WESTBRED 926		23.7	59.1	26	16.9
MT 9806		23.4	59.5	26	17.5
CONAN	*	22.7	58.8	24	16.4
WESTBRED EXPRESS		19.0	59.3	22	16.3

Cooperator: Dan Picard.
 Location: Thirty miles east of Brady. (Chouteau, County)
 Fertilizer: 11-52-0 (N-P-K).
 Previous crop: No-till chem fallow. (wheat stubble)
 Date seeded: April 22, 2002.
 Date harvested: August 26, 2002.
 Rainfall: From planting to harvest was 7.5 inches.
 * = Sawfly resistant varieties. (Amidon, Rambo, Scholar and Conan have partial resistance.)
 ** = Hard white wheat.

Yield experimental mean: 26.08
Error degrees of freedom: 38.00
F test for var: 2.28
C.V. 2: 7.16
LSD (0.05): 5.35

Table 4. **Four-year summary** on dryland **Spring Wheat** varieties grown near the **Knees**. 1999 - 2000 - 2001 - 2002
 Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, Montana.

4 - year comparable average					

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

NEWANA		20.9	53.6	25	15.5
FORTUNA	*	25.0	55.9	30	16.3
LEW	*	22.6	55.1	29	16.4
AMIDON	*	17.6	52.8	29	16.2
RAMBO	*	21.9	53.6	25	16.0
HI-LINE		24.0	54.7	25	16.9
WESTBRED 926		22.3	54.2	26	16.9
MCNEAL		24.0	52.8	27	16.3
ERNEST	*	22.4	54.5	30	17.0
WESTBRED EXPRESS		15.6	53.5	23	15.8
WESTBRED 936		20.1	54.8	24	17.0
SCHOLAR	*	20.2	52.2	28	16.5
MTHW9420	**	20.3	53.2	26	15.8
EXPLORER	** , *	21.7	55.6	26	16.5
CONAN	*	23.6	54.6	25	16.3
REEDER		22.9	54.8	26	16.4

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.

Table 5. **Dryland Durum** variety trial grown near the **Knees**, 2002. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Protein
MONROE	29.8	59.7	32	16.1
KYLE	28.7	60.3	34	15.8
MOUNTRAIL	28.6	60.8	29	14.7
AC AVONLEA	28.0	60.9	30	16.2
SCEPTRE	27.8	59.3	28	14.7
MAIER	27.7	59.7	29	16.2
PLAZA	27.4	60.5	26	14.6
MEDORA	26.4	59.6	32	16.4
RENVILLE	26.4	60.5	34	15.1
LEBSOCK	24.9	61.7	27	14.5
BEN	24.7	59.5	30	17.2
Munich	23.6	58.7	27	16.1

Cooperator: Dan Picard.
 Location: Thirty miles east of Brady. (Chouteau, County)
 Fertilizer: 11-52-00 (N-P-K)
 Previous crop: No-till chem fallow. (wheat stubble)
 Date seeded: April 22, 2002.
 Date harvested: August 21, 2002.
 Rainfall: From planting to harvest was 7.5 inches.
 Yield experimental mean: 27.06

Table 6. **Three-year summary on Dryland Durum** varieties grown near the **Knees**. 1999 - 2001 - 2002 Mont. Agr. Expt. Sta., Western Tri. Ag. Research Center, Conrad, Montana.

3 - year comparable average				

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

MOUNTRAIL	26.5	56.1	27	16.4
MAIER	25.3	56.3	28	17.3
KYLE	24.7	57.3	32	16.8
MEDORA	24.3	57.3	30	17.5
MONROE	23.7	56.1	30	16.6
SCEPTRE	23.0	55.2	28	16.6
LEB SOCK	22.8	57.4	28	16.2
BEN	22.7	56.6	29	17.3
MUNICH	21.3	55.0	27	17.2
RENVILLE	22.1	56.3	31	16.7

Cooperator: Dan Picard.

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