

Title: Off-station **Spring Wheat** variety evaluations in the Western Triangle Area.

Year: 2008

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 and Glacier County near Cut Bank. These locations have different environments with Teton having a warmer, longer growing season than Cut Bank. The trials were no-till planted on chem-fallow.

**Results:** Data for the Choteau and Cut Bank locations are presented in Tables 1 - 4, and include 2008 and multi-year averages. Table 5 is a summary of tests at three Western Triangle locations over the past six years, and is equivalent to 16 tests.

The growing season was unusually cool in 2008, resulting in heading-dates six days later than average. The cooler temperatures and prolonged growing period allowed for increased survival of emerging sawfly wasps, and for an extended time-frame for females to distribute their eggs more effectively. Consequently, sawfly infestation and stem-cutting were severe for susceptible varieties.

At the Choteau location (Table 1) and on-station at Conrad (presented in “Statewide Variety” section of this report), correlations between percent sawfly cutting and yield were highly significant, with most solid or partially-solid stemmed varieties ranking in the upper half for yield. Most cut stems were recovered during the harvest operation, indicating that yield reductions were largely associated with larval-feeding damage to the plant’s vascular system. The Cut Bank location was harvested before lodging was fully completed, and stem-cutting data were not obtained. However, most varieties with stem solidness ranked in the upper half for yield (Table 3).

Averaged over five or six years at each location, nearly all top-ranking varieties for yield had either solid or partially-solid stems (Tables 2, 4 and 5). Although the partially-solid stem varieties resisted sawfly cutting at Conrad 2008 (Statewide Variety section), they most often have exhibited much higher stem-cutting levels.

**Future Plans:** Off-station variety testing in the Western Triangle area for 2009 is uncertain, pending staff and project replacements.

Table 1. Off-station **Spring Wheat** variety trial near Choteau, 2008.

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Protein %	Sawfly cutting %
VIDA	+	48.1	57.1	27	14.4	28.3
ONEAL		44.8	59.0	30	14.6	50.0
CORBIN	+	42.8	60.0	27	14.9	43.3
CHOTEAU	++	42.4	58.3	27	15.2	2.0
Hank/Chot <small>pf906408</small>	+	42.1	56.9	26	15.1	13.3
FORTUNA	++	41.3	59.6	32	15.2	5.7
CONAN	+	37.3	59.0	26	14.9	60.0
HANK		35.6	57.6	27	14.8	97.7
JEDD	CL	35.3	59.0	27	14.3	83.3
VOLT		34.9	60.0	28	13.7	96.3
MTHW0471	HW	33.9	57.8	30	14.4	81.7
REEDER		31.4	58.0	27	14.9	97.7
OUTLOOK		29.9	55.7	27	14.1	91.7
MCNEAL		29.7	57.4	28	14.3	97.7
NORPRO		29.5	54.2	24	14.8	96.3
EXPLORER	HW	28.8	58.2	29	14.5	96.3
KELBY		27.9	59.9	25	15.2	99.0
MT0415		26.5	58.2	27	15.7	99.0
FREYR		25.8	56.7	27	14.2	98.0
KUNTZ		24.9	56.9	27	14.0	99.3
Average		34.7	58.0	27.4	14.7	71.8
C.V. %		9.64				7.51
LSD .05		9.50				15.40

Correlation, sawfly cutting vs yield = -0.848 p<0.0001

Correlation, sawfly cutting vs test wt = -0.222 p=0.347

++ = sawfly resistant (solid stem score 19 or higher).

+ = partial sawfly resistance.

HW = hard white.

Cooperator & location: Scott & Roy Inbody, east of Choteau, MT

Planted April 29, 2008. Harvest: Aug 23, 2008. Fertilizer actual: 11-52-0

Table 2. Five-year averages, **Spring Wheat** varieties, Choteau area, Teton Co. 2004 - 08.

Variety	Source	Class	5-Year Average			
			Yield bu/a	Test weight	Height in.	Protein %
Corbin	WestBred	+	53.0	59.0	32	16.0
Vida	MSU	+	51.7	56.6	32	15.5
Agawam	WestBred	++ HW	48.9	60.3	30	14.7
Outlook	MSU		48.0	55.8	32	15.4
Choteau	MSU	++	47.3	57.3	30	16.0
Conan	WestBred	+	44.7	57.2	29	15.8
McNeal	MSU		44.6	55.9	32	16.0
Reeder	N. Dak.		43.4	57.4	32	16.1
Hank	WestBred		43.1	55.0	30	16.3
Fortuna		++	41.9	59.4	38	16.1
MT0415			40.7	57.9	32	16.6
Explorer	MSU	HW	40.1	57.3	31	15.7
Norpro	AgriPro		39.8	54.5	29	16.0
Freyr	AgriPro		38.0	57.0	33	15.3
average			44.5	56.8	31.7	15.9

++ Sawfly resistant (solid stem score of 19 or higher).

+ Partial sawfly resistance

HW = Hard White

Cooperator & Location: Scott & Roy Inbody, Choteau, MT. Teton Co.  
 Conducted by MSU Western Triangle Agr Research Center.

Table 3. Off-station **Spring Wheat** variety trial, Cut Bank, 2008

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Protein %
VIDA	+	39.2	58.3	30	14.4
CHOTEAU	++	36.9	58.1	28	15.0
ONEAL		36.0	58.3	28	14.5
FORTUNA	++	35.8	59.9	36	13.8
REEDER		35.0	58.0	30	15.0
MT0415		34.3	57.8	30	15.2
Hank/Chot pf906408	+	33.4	59.0	25	13.8
VOLT		33.3	60.2	30	13.1
CORBIN	+	32.7	61.1	28	13.8
MCNEAL		32.4	58.8	29	14.7
JEDD	CL	32.4	60.5	26	13.3
KUNTZ		32.2	58.5	28	14.0
MTHW0471	HW	30.3	59.8	35	13.6
OUTLOOK		29.6	58.2	26	14.2
NORPRO		29.2	58.2	29	14.9
HANK		29.0	57.6	29	14.0
EXPLORER	HW	29.0	59.7	28	14.6
CONAN	+	28.0	58.8	29	14.8
FREYR		25.8	57.3	29	14.8
KELBY		25.0	60.0	26	16.3
Average		32.0	58.9	29.0	14.4
LSD .05		5.2			
C.V. %		5.67			

++ = sawfly resistant (solid stem score 19 or higher).

+ = partial sawfly resistance.

HW = hard white.

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

Planted April 28, 2008. Harvest: Sept 8, 2008. Fertilizer actual: 71-52-0

Table 4. Five-year averages, **Spring Wheat** varieties, Cut Bank area, Glacier Co. 2004 - 08.

Variety	Source	Class	5-Year Average			
			Yield bu/a	Test weight	Height in.	Protein %
Agawam	WestBred	++ HW	50.8	61.8	30	12.4
Vida	MSU	+	49.6	57.5	32	12.8
Choteau	MSU	++	48.9	59.7	29	13.0
Fortuna		++	48.9	60.5	39	13.1
MT0415			47.8	58.7	32	13.3
Corbin	WestBred	+	47.6	60.4	31	12.6
Hank	WestBred		46.1	57.6	30	12.6
Outlook	MSU		44.6	57.0	32	12.5
Reeder	N. Dak		44.1	58.4	32	13.1
Explorer	MSU	HW	44.0	59.2	32	12.9
Conan	WestBred	+	42.3	58.0	30	13.3
McNeal	MSU		41.7	58.0	32	12.9
Freyr	AgriPro		41.7	58.3	33	12.7
Norpro	AgriPro		39.5	56.9	30	13.0
average			45.0	58.4	31.9	12.9

++ Sawfly resistant (solid stem score of 19 or higher).

+ Partial sawfly resistance

HW = Hard White

Cooperator & Location: Kevin Bradley, north of Cut Bank, MT  
 Conducted by MSU Western Triangle Agr Research Center.

Table 5. Multi-Year x Location Averages - **Spring Wheat** Varieties.  
Western Triangle Area

Variety	Source	Class	16 Year x Location Average*				
			Yield bu/a	Test weight	Height in.	Protein %	Head date**
Agawam	WestBred	++ HW	51.9	61.4	30	13.4	180
Vida	MSU	+	51.9	57.6	32	14.0	183
Corbin	WestBred	+	50.5	59.7	32	14.3	182
Choteau	MSU	++	49.6	58.8	30	14.5	182
Outlook	MSU		47.5	56.6	32	14.0	184
MT0415	MSU		46.0	58.7	33	14.9	183
Reeder	N. Dak		46.0	58.3	32	14.5	182
Fortuna		++	45.8	60.0	38	14.4	182
Hank	WestBred		45.5	56.6	31	14.4	181
Conan	WestBred	+	45.2	58.1	30	14.5	182
McNeal	MSU		45.1	57.6	32	14.3	183
Explorer	MSU	HW	43.8	58.6	30	14.3	180
Freyr	AgriPro		43.0	58.4	33	14.1	182
Norpro	AgriPro		42.6	56.4	29	14.4	182
			46.5	58.1	31.8	14.3	182.0

++ Sawfly resistant (solid stem score of 19 or higher).

+ Partial sawfly resistance

HW = Hard White

\*\* Head date, Conrad only.

\* Conrad 6-yr + Choteau 5-yr + Cut Bank 5-yr.

Years included: 2003 to 2008. Comparable average calculations.

Cooperators: Kevin Bradley, Cut Bank; Roy and Scott Inbody, Choteau;  
Conducted by MSU Western Triangle Agr Research Center.