

**Title:** 2011 Off-Station Spring Wheat evaluations in the Western Triangle Area

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**Objectives:** Evaluate spring Wheat varieties and promising new lines in the Western Triangle area.

**Results:** Results are tabulated in Table 1 for the Cut Bank location and Table 2 is five year averages for selected varieties at the Cut Bank location. Table 3 is for the location north of Devon. Tables 4 and 5 are for the Knees location, with Table 5 being five year averages for the Knees location. Table 6 is irrigated spring wheat with Table 7 being the long term data for the irrigated spring wheat nursery. Table 8 is of the soil test values for the off station plots. The Choteau location was lost due to drowning.

Top yielding varieties at Cut Bank were Volt, Choteau, and Kelby with protein averaging 13.8% across all varieties. Volt, Fortuna, and WB Gunnison were the high yielding varieties at Devon while averaging 14.0% protein across all varieties. The Knees high yielders were Duclair, Choteau, and IMICHT79 with 13.9% protein across all varieties. The top yielders in the irrigated trial were Duclair, WB Gunnison, and SY Tyra, with protein averaging 12.8 percent. Heading date for the irrigated nursery was about 10 days later than usual.

**Summary:** Yields ranged from 25 to 63 bu/acre at Cut Bank, 26 to 43 bu/acre north of Devon, and 21 to 45 bu/a at the Knees. Yields in the irrigated trial ranged from 55 to 90 bu/a. No long term data are reported for the location north of Devon as this was the second year for variety trial plots at this location.

Rust was not sprayed at the Cut Bank, Devon, and WTARC irrigated locations. Rust was sprayed for by the farmers at the Knees and Pendroy locations as the crop surrounding the plots were winter wheat infested with rust. Some varieties at Cut Bank and Devon were highly affected by the rust. Test weights were lower than might be expected at Cut Bank and Devon.

**Funding Summary:** Office of Special Projects will provide expenditure information. No other grants support this project.

**MWBC FY2013 Grant Submission Plans:** A similar project will be proposed for FY 2013.

Table 1. Off-station spring wheat variety trial located north of Cut Bank, MT.  
Glacier County. Western Triangle Ag. Research Center. 2011.

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Protein %
Volt		62.7	62.8	31.7	13.3
Choteau	**	56.9	55.4	31.0	14.0
Kelby		55.0	60.6	31.7	14.1
AP604CL	CL	55.0	59.8	34.0	12.9
WB Gunnison		54.2	59.2	31.0	12.7
Corbin	*	51.7	57.3	32.3	13.2
Kuntz		51.3	56.6	33.0	13.1
Reeder		46.4	58.0	32.3	13.4
Vida		46.3	54.6	32.3	14.3
IMICHT79		46.1	55.7	30.3	13.8
Duclair	**	45.9	51.6	32.3	14.6
Conan	*	43.4	55.4	29.7	13.6
Fortuna	**	42.4	60.9	36.3	13.2
Mott		41.6	58.0	35.7	13.3
SY Tyra		40.5	52.3	28.7	12.8
Outlook		38.5	50.4	32.3	13.7
ONeal		34.5	50.1	33.0	15.6
Hank		30.7	48.4	30.0	15.6
McNeal		29.7	50.8	31.0	13.9
Jedd	CL	25.2	46.8	27.0	15.2
Mean		44.9	55.2	31.8	13.8
LSD (.05)		10.7	2.2	4.1	
C.V. 1 (%) (S/mean)*100		14.4	2.4	4.8	

Cooperator and Location: Bradley Farms, northern Glacier County.

Planted May 11, 2011 on chem-fallow. Harvested September 28, 2011.

Fertilizer, actual lbs/a: 11-22.5-0 with seed at planting, topdressed with 150-0-20 on 6/6/2011, plus 46 lbs/a N applied by commercial applicator about the 1<sup>st</sup> of June.

Sprayed with Huskie at 11 oz/a and Axial XL at 16.4 oz/a on 6/22/2011.

Precipitation from 5/11/2011 until harvest was: 6.75 inches.

\*\* = Sawfly tolerant (solid stem score of 19 or higher). \* = implies partial sawfly tolerance.

Conducted by MSU Western Triangle Ag. Research Center.

Table 2. Five-year averages, Spring Wheat varieties, Cut Bank area, northern Glacier County. 2007-2011.

Variety	Class	5-Year Average			
		Yield bu/a	Test weight	Height in.	Protein %
Choteau	++	61.1	58.4	29.2	14.3
Corbin	+	57.3	59.4	31.4	13.8
Vida	+	57.0	56.5	32.3	14.3
Reeder		52.5	57.8	31.7	14.2
Fortuna	++	51.7	60.8	37.7	13.9
Outlook		51.2	55.3	31.1	13.9
Hank		51.0	55.7	30.0	14.4
Conan	+	50.4	56.7	29.7	14.5
McNeal		46.2	56.1	31.4	14.0
average		53.5	57.4	31.6	14.2

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

+ = Partial sawfly resistance.

Cooperator and Location: Bradley Farms, northern Glacier County.  
 Conducted by MSU Western Triangle Ag. Research Center.

Table 3. Off-station spring wheat variety trial located north of Devon.  
eastern Toole County. Western Triangle Ag. Research Center. 2011.

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Protein %	Lodging %
Volt		42.5	61.9	25.3	13.2	6.7
Fortuna	**	41.9	60.0	32.0	13.2	6.7
WB Gunnison		41.4	58.1	26.0	14.6	0.3
Vida		40.8	58.2	26.0	12.2	8.3
Corbin	*	40.0	57.5	26.7	13.3	6.0
IMICHT79		37.8	58.4	25.0	14.3	4.0
Duclair	**	36.4	54.8	26.7	12.8	4.7
Conan	*	36.0	59.5	25.3	15.4	5.0
ONeal		35.8	57.9	27.3	14.7	3.7
Outlook		35.3	56.0	26.7	14.2	4.3
Choteau	**	34.8	57.9	23.3	13.3	7.3
Reeder		34.4	57.2	26.0	14.6	5.7
AP604CL	CL	33.4	57.7	26.7	15.5	6.7
Kuntz		32.8	57.1	24.0	12.9	6.7
Mott		32.7	58.3	27.3	13.7	1.0
Jedd	CL	32.0	58.2	22.3	13.8	5.3
Kelby		31.8	61.2	22.7	14.2	5.0
McNeal		31.6	56.6	27.0	15.2	13.3
Hank		30.2	55.7	25.3	15.2	7.7
SY Tyra		25.7	56.3	21.7	12.9	10.0
mean		35.4	57.9	25.7	14.0	5.9
LSD (.05)		5.6	2.3	1.4		4.0
C.V. 1 (%) (S/mean)*100		9.6	2.4	3.3		41.3

Cooperator and Location: Brian Aklestad, eastern Toole County.

Planted April 27, 2011 on chem-fallow. Harvested August 16, 2011.

Fertilizer, actual lbs/a: 11-22.5-0 with seed at planting, topdressed with 150-0-20 on 5/20/2011.

Sprayed with Huskie at 11 oz/a and Axial XL at 16.4 oz/a on 6/13/2011.

Precipitation from 4/27/2011 until harvest was: 10.15 inches.

\*\* = Sawfly tolerant (solid stem score of 19 or higher).

Conducted by MSU Western Triangle Ag. Research Center.

Table 4. Off-station spring wheat variety trial located near the Knees.  
Chouteau County, Western Triangle Ag. Research Center, 2011.

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Protein %	Lodging %
Duclair	**	44.6	59.1	26.0	13.9	0.33
Choteau	**	41.3	59.7	24.3	13.8	1.7
IMICHT79		41.0	59.1	25.0	14.2	0.3
Outlook		40.6	57.3	26.3	13.7	3.7
WB Gunnison		40.5	59.9	24.7	13.3	1.0
Corbin		39.0	59.7	26.0	13.5	0.7
Volt		37.1	61.1	24.3	13.1	12.7
Kelby		36.0	61.9	22.7	14.6	1.3
Vida		35.7	60.3	26.7	13.6	2.3
Reeder		34.8	59.5	24.7	14.7	10.0
Mott		34.5	60.0	27.7	13.5	0.7
Fortuna	**	33.9	61.0	32.3	14.0	1.0
Conan		33.4	59.4	24.0	14.0	0.3
McNeal		33.1	57.4	26.7	14.2	40.0
Kuntz		32.2	57.3	23.7	13.3	8.3
AP 604 CL	CL	29.1	59.6	24.3	13.8	11.0
ONeal		28.8	57.9	26.0	13.3	3.0
Hank		26.6	55.7	23.0	14.3	3.0
SY Tyra		26.4	55.5	22.0	13.9	1.3
Jedd	CL	21.1	55.9	21.3	14.6	1.3
Mean		34.5	58.9	25.1	13.9	5.2
LSD (.05)		3.5	1.1	1.5		7.0
C.V. 1 (%) (S/mean)*100		6.2	1.1	3.6		81.2

Cooperator and Location: Aaron Killion, western Chouteau County.

Planted May 12, 2011 on chem-fallow. Harvested September 6, 2011.

Fertilizer, actual lbs/a: 41-22.5-20; 11-22.5-0 with seed at planting, topdressed with 30-0-20 on 6/6/2011.

Sprayed with Huskie at 11 oz/a and Axial XL at 16.4 oz/a on 6/22/2011. Tebustar was flown on at a rate of 4 oz/a on July 4, 2011 to control rust.

Precipitation, rain gauge cracked.

\*\* = Sawfly tolerant (solid stem score of 19 or higher).

Conducted by MSU Western Triangle Ag. Research Center.

Table 5. Three-year averages, Spring Wheat varieties, Knees area, western Chouteau County. 2009-2011.

Variety	Class	3-Year Average			
		Yield bu/a	Test weight	Height in.	Protein %
Duclair	++	51.2	59.7	26.9	14.1
Corbin	+	47.0	60.2	26.7	13.6
Choteau	++	46.2	59.5	26.1	14.3
Vida	+	45.3	59.9	28.0	13.8
Oneal		44.0	60.6	27.3	13.9
Volt		42.2	61.6	26.0	13.4
McNeal		42.1	58.5	29.0	14.1
Outlook		42.1	58.1	27.0	14.2
Reeder		41.0	60.0	27.0	14.7
Conan	+	40.6	60.4	25.0	14.5
Jedd		37.6	59.3	22.0	13.9
Kelby		36.0	60.8	23.3	15.0
AP 604 CL		35.1	60.3	26.0	14.3
Fortuna	++	34.9	60.6	32.3	14.6
Hank		31.1	57.8	25.0	14.3
average		40.9	59.8	26.5	14.2

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

+ = Partial sawfly resistance.

Cooperator and Location: Aaron Killion, western Chouteau County.

Conducted by MSU Western Triangle Ag. Research Center.

Table 6. 2011 Irrigated Spring Wheat variety trial, Conrad, MT. Western Triangle Ag. Research Center, Conrad, MT.

Variety	Class	Yield bu/a	Test Wt lb/bu	Height in.	Head date	Protein %
Duclair	++	90.3	62.0	31.3	196	13.7
WB Gunnison		85.0	61.8	32.0	199	12.6
SY Tyra		81.9	62.8	31.0	200	12.2
Volt		81.2	63.2	31.3	201	13.2
IMICHT79		80.8	61.2	33.0	199	13.4
Kuntz		77.5	62.4	30.3	199	12.5
Corbin		76.9	63.3	31.7	198	13.2
ONeal		71.8	61.5	34.3	199	12.2
AP 604CL		71.8	63.5	32.7	197	12.7
Choteau	++	71.6	61.5	32.0	197	14.2
McNeal		70.7	61.7	34.0	199	11.9
Vida		69.6	61.6	33.0	199	12.6
Hank		69.3	60.4	29.3	196	12.1
Jedd		68.5	61.6	27.0	197	11.5
Fortuna	++	67.0	63.0	40.0	200	13.3
Reeder		66.1	62.8	33.7	199	12.7
Conan	+	66.1	61.4	32.0	198	12.9
Kelby		61.6	62.4	26.7	195	14.3
Outlook		55.4	60.5	36.0	199	13.7
Mott		54.8	61.8	35.7	198	11.8
Mean		71.9	62.0	32.4	198	12.8
LSD (.05)		11.5	0.9	2.14	1.8	
C.V. (s/mean)*100		9.7	0.9	4.01	0.5	

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

+ = partial sawfly resistance.

HW = hard white.

Location: MSU Western Triangle Ag Research Center, Conrad, MT

Planted May 14, 2011 on fallow. Harvested September 23, 2011.

Fertilizer, actual: 221-22.5-20, 11-52-0 placed with seed, Urea and potash broadcast on 5/19/2011.

Sprayed with: Huskie @ 11 oz/a and Axial @ 16.4 oz/a on 6/18/11.

Total precipitation from planting to harvest: 10.34 inches with 8.75 inches irrigation water applied.

Table 7. Six-year averages, irrigated Spring Wheat varieties, Conrad area, Pondera County. 2005 - 07 and 2009 -2011.

Variety	Source	Class	5-Year Average				
			Yield bu/a	Test wt.	Height in.	Head date	Protein %
Duclair	MSU	++	94.3	61.0	32.5	183	14.4
Corbin	WestBred	+	76.9	61.7	34.2	184	14.0
Vida	MSU		74.6	60.4	33.7	185	14.0
Choteau	MSU	++	71.6	61.4	32.5	186	14.4
Reeder	ND		70.4	61.8	35.2	184	14.2
McNeal	MSU		69.4	60.5	34.5	186	13.8
Hank	WestBred		69.3	59.8	30.8	183	14.0
Conan	WestBred	+	68.5	60.7	32.3	184	14.0
Outlook	MSU		66.7	59.8	35.3	186	14.0
Fortuna	ND	++	65.2	61.8	40.3	185	14.3
Nursery Mean			72.4	61.0	34.2	185	14.1

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

+ Partial sawfly resistance

Location: MSU Western Triangle Ag. Research Center, Conrad, MT

Table 8. Soil test values for off station plots, 2011.

Location	N (lbs/a) <sup>1</sup>	Olsen-P (ppm)	K (ppm)	pH	OM (%)	EC (mmhos/cm)
Cut Bank	60.5	18	523	7.0	3.2	0.38
Devon	25.5	22	322	7.4	0.8	0.19
Knees	139.8	38	800	7.5	3.6	1.01

<sup>1</sup>Nitrogen soil samples were sampled to a depth of four feet in one foot increments with the exception of the Pendroy site where the samples were to a depth of two feet. All other soil tests were for zero to six inches in depth.