

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

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

Results: Results are tabulated in Table 1 for the Cut Bank location, Table 2 is five year averages for selected varieties at the Cut Bank location. Table 3 is for the Devon site, and Table 4 data are from the Knees location, Table 5 is three year averages for selected varieties at the Knees. Table 6 is of the soil test values for the off station plots. The Choteau site was lost due to drowning.

Grain yields averaged 78.8 bu/a at Cut Bank, 57.8 bu/a north of Devon, and 67.7 bu/a at the Knees. Test weight at all locations was 50 lbs/bu or greater. Kernel plumpness averaged 91.9% at Cut Bank, 83.9% at Devon, and 72.2% at the Knees. Top yielding varieties at Cut Bank were MT061035, Haxby, and Goldeneye with the top yielding malt barleys being Conrad and Hockett. Top yielding barleys north of Devon were MT020162, Goldeneye, and MT061035. While top yielding barleys at the Knees location were MT061035, MT020155, and Goldeneye.

Summary: Yields ranged from 66 to 80 bu/acre at Cut Bank, 50 to 65 bu/a at Devon, and 62 to 76 bu/a at the Knees. Plumps varied by location, possibly due to soil fertility. Lodging in the barley plot at Devon was caused by wheat stem sawfly cutting. No long term data are reported for north of Devon as this was the second year of growing plots at this location. Protiens at the Knees were high possibly due to a high soil test for nitrogen and early rain followed by hot and dry conditions, this also reduced kernel plumpness.

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 barley variety trial located north of Cut Bank, MT. Glacier County. Western Triangle Ag. Research Center. 2011.

Variety	Spike	Yield bu/a	Test Wt lb/bu	Plump %	Thin %	Plant Height (in)	Protein %
MT061035	2	87.5	50.3	93.1	2.1	23.0	12.0
Haxby	2	87.5	52.8	91.2	3.5	26.0	12.9
Goldeneye	6	86.2	49.4	93.8	1.9	27.0	11.8
Conrad	2	82.4	49.7	95.5	1.1	26.0	14.3
Hockett	2	81.9	52.4	92.6	2.3	26.3	13.4
MT070175	2	80.8	51.3	93.4	2.1	28.3	12.2
Geraldine	2	80.5	51.8	91.4	2.5	24.0	12.3
Metcalfe	2	79.7	51.4	91.6	2.5	27.3	13.9
MT010160	2	78.5	49.9	88.7	3.5	26.0	14.0
MT020155	2	77.8	49.9	89.9	3.1	24.3	13.8
Pinnacle	2	77.2	51.1	96.4	1.2	28.3	11.5
Harrington	2	76.9	50.3	92.1	2.2	26.0	13.3
Gallatin	2	76.5	51.2	92.0	2.4	25.3	13.1
MT020162	2	71.5	49.9	82.4	6.4	26.7	14.0
MT010158	2	69.7	50.9	91.6	2.4	26.7	14.1
Tradition	6	65.7	50.1	94.3	1.3	29.7	12.6
Average		78.8	50.8	91.9	2.5	26.3	13.1
LSD (.05) =		9.6	1.5	2.9	1.2	2.4	
C.V. =		7.3	1.7	1.9	25.1	5.5	
P-Value (0.05)		0.002	0.001	0.000	0.000	0.001	

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, plus 46 lbs/a N applied by commercial applicator about the 1st 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.

Conducted by MSU Western Triangle Ag. Research Center.

Table 2. 5-year averages, dryland Barley varieties, Cut Bank, MT, 2006-2009 and 2011.

Variety	5-Year Average					
	Yield bu/a	Test Wt lb/bu	Plump %	Thin %	Protein %	Height in.
Haxby	80.3	52.6	77.3	13.4	12.7	29.2
Goldeneye	80.1	48.6	79.7	9.9	11.6	28.5
Geraldine	78.9	50.5	77.4	15.6	12.5	27.8
Harrington	77.0	49.2	79.2	11.7	12.6	29.4
MT020155	76.3	49.8	78.0	16.1	13.3	25.3
Hockett	76.2	50.9	80.7	10.4	12.6	28.2
Conrad	75.5	49.2	81.3	9.3	13.0	29.1
Metcalf	74.1	49.8	80.0	10.7	13.2	29.8
MT010158	70.4	50.2	79.2	12.1	13.2	27.4
average	77.2	50.2	79.3	11.9	12.8	27.3

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

Table 3. Off-station spring barley variety trial located in the Devon area. Eastern Toole County. Western Triangle Ag. Research Center. 2011.

Variety	Spike	Yield bu/a	Test Wt lb/bu	Plump %	Thin %	Plant Height (in)	Lodging %	Protein %
MT020162	2	64.8	52.6	84.8	5.0	25.3	4.3	9.6
Goldeneye	6	63.0	50.5	81.5	6.3	27.3	1.3	9.3
MT061035	2	61.6	51.0	76.1	10.0	22.7	3.7	8.8
Haxby	2	61.5	54.3	81.6	7.1	25.7	3.7	9.4
MT020155	2	60.1	52.2	82.5	7.4	26.3	2.3	9.8
Pinnacle	2	59.4	53.0	93.7	2.0	24.3	2.0	8.4
Conrad	2	58.8	51.4	86.3	4.6	24.0	4.7	10.4
Harrington	2	57.1	51.5	88.7	4.1	23.3	1.7	9.5
Gallatin	2	56.9	51.5	82.5	6.8	27.0	2.7	9.4
MT070175	2	56.8	52.9	89.1	4.3	26.0	1.7	9.2
Geraldine	2	56.5	51.6	70.9	13.0	24.0	3.7	9.8
Tradition	6	55.9	51.0	83.0	6.8	27.7	2.7	10.2
MT010160	2	55.7	52.3	87.0	3.6	25.3	3.7	9.4
Metcalfe	2	55.3	52.1	86.8	4.4	26.0	2.7	9.6
Hockett	2	50.5	52.0	78.5	9.6	26.3	7.0	9.9
MT010158	2	50.3	52.8	89.7	3.1	23.3	1.7	10.5
Average		57.8	52.0	83.9	6.1	25.3	3.1	9.6
LSD (.05) =		7.6	1.0	8.6	3.7	2.1	NS	
C.V. =		7.9	1.2	6.1	36.5	5.0	71.7	
P-Value (0.05)		0.024	0.000	0.001	0.000	0.000	0.254	

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.
 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.
 Conducted by MSU Western Triangle Ag. Research Center.

Table 4. Off-station spring barley variety trial located in the Knees area. Western Chouteau County. Western Triangle Ag. Research Center. 2011.

Variety	Spike	Yield bu/a	Test Wt lb/bu	Plump %	Thin %	Plant Height (in)	Protein %
MT061035	2	76.0	49.6	66.0	11.2	22.0	13.9
MT020155	2	75.7	50.1	75.0	7.9	24.7	13.4
Goldeneye	6	71.2	48.8	58.2	15.2	24.3	13.9
MT070175	2	70.5	51.6	85.1	5.6	25.7	12.1
Haxby	2	69.5	53.5	67.5	9.0	25.0	13.3
MT020162	2	69.3	51.5	66.1	12.5	25.3	14.3
Tradition	6	68.5	50.0	61.2	10.4	27.3	13.7
Harrington	2	67.5	50.8	80.0	5.7	24.0	14.1
Pinnacle	2	67.1	52.5	95.1	2.6	26.3	11.8
MT010160	2	66.2	51.9	79.2	6.3	26.0	13.8
Metcalfe	2	65.5	51.0	77.1	6.6	25.0	14.5
Hockett	2	64.4	51.9	80.1	8.4	26.0	13.2
Conrad	2	64.0	51.1	74.7	8.8	23.0	14.9
Gallatin	2	63.3	51.3	72.0	10.7	26.0	13.5
Geraldine	2	62.6	49.0	39.3	29.2	23.0	15.0
MT010158	2	61.9	52.6	82.1	5.6	25.3	14.2
Average		67.7	51.1	72.2	9.7	24.9	13.7
LSD (.05) =		7.1	0.8	7.3	3.2	1.3	
C.V. =		6.3	1.0	6.0	19.7	3.1	
P-Value (0.05)		0.005	0.000	0.000	0.000	0.000	

Cooperator and Location: Aaron Killion, western Chouteau County.

Planted: May 12, 2011 on chem-fallow. Harvested: August 25, 2011.

Fertilizer, actual lbs/a: 11-22.5-0 with seed at planting.

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.

Precipitation, rain gauge cracked.

Conducted by MSU Western Triangle Ag. Research Center.

Table 5. 3-year averages, dryland Barley varieties, Knees, MT, 2009 - 2011.

Variety	5-Year Average					
	Yield bu/a	Test Wt lb/bu	Plump %	Thin %	Protein %	Height in.
MT020155	79.2	49.5	85.8	5.2	12.9	25.3
Goldeneye	76.7	49.0	80.6	7.1	12.4	28.5
Conrad	75.3	50.5	85.5	5.3	13.8	29.1
Haxby	74.1	52.8	84.9	4.7	13.0	29.2
Harrington	72.9	50.4	87.6	4.8	13.1	29.4
Geraldine	72.3	50.2	69.5	14.4	13.5	27.8
Hockett	67.3	50.4	87.3	5.6	12.8	28.2
Metcalf	67.2	50.5	86.4	4.9	13.3	29.8
MT010158	64.6	51.3	89.0	3.9	12.9	27.4
average	72.2	50.5	84.1	6.2	13.1	27.3

Cooperator and Location: Aaron Killion, western Chouteau County.
 Conducted by MSU Western Triangle Ag. Research Center.

Table 6. Soil test values for off station plots, 2011.

Location	N (lbs/a) ¹	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

¹Nitrogen soil samples were to a depth of four feet in one foot increments. All other soil tests were for zero to six inches in depth.