

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

Year: 2004

Location: Western Triangle Research Center, Conrad, MT.

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Dryland off-station barley variety trials were grown in Teton County near Choteau, Glacier County near Cut Bank, and Chouteau County in the Knees Area. An irrigated trial was grown at Conrad. 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; 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 individual off-station locations are presented in Tables 1-8, and include the 2004 data and five-year averages. Table 9 is a summary of all the Western Triangle area dryland barley tests over the past five years, and is equivalent to 19 tests on each variety.

Averaged across all dryland locations over the past five years, the feed barley 'Haxby' had the highest yield and test weight (Table 9). Dryland multi-year averages for some of the newer malt varieties are limited, but in 2004, the 2-row 'Metcalf' averaged 4 bu/a higher yield than 'Copeland' and 'Harrington'; and the 6-row 'Tradition' averaged 3 bu/a higher than 'Lacey' across all locations (Tables 1, 3 & 5).

Under irrigation, 'Merit' and Metcalf averaged higher yields over the past four years than other 2-row malt varieties; and Lacey and Tradition were the highest yielding 6-row malt varieties (Table 8).

Future Plans: Variety trials will be repeated in 2005 in similar environments.

Table 1. Off-station Barley varieties. Cut Bank, 2004.

VARIETY	Yield bu/ac	Height in.	Test wt.	Plump %	Thin %	Protein %
Hays ++	87.9	35	47.8	90	3	9.6
Valier	87.3	35	52.2	97	1	9.6
Eslick	86.1	35	51.5	98	1	9.2
Baronesse	85.7	35	51.7	97	1	9.0
Haxby	83.4	34	53.0	98	1	9.6
MT970116	82.3	37	52.5	98	1	10.0
Metcalfe	82.3	36	52.3	98	1	9.5
Gallatin	82.1	36	52.7	98	1	10.3
Tradition, BA, 6-row	80.7	38	48.9	97	1	9.7
MT910189	79.5	33	53.4	98	1	9.9
MT970229	78.9	33	52.8	99	1	9.5
Lacey, 6-row	78.6	38	48.3	98	1	9.8
Harrington	77.8	34	51.8	98	1	9.5
Copeland	77.7	37	50.1	98	1	9.4
Conlon	70.1	36	51.6	99	1	10.7
Haybet ++	68.6	39	47.7	78	6	11.2
MEANS	80.6		51.2	96.3	1.4	9.8
C.V.1 =	5.99					
C.V.2 =	3.46					
LSD (0.05) =	8.05 bu		1.49	6.65	2.05	

++ Awnless Hay Barley. BA = Busch Ag.

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. Five-year averages, off-station **Barley** varieties. Cut Bank 2000-2004

Variety	5-Year Averages					
	Yield bu/a	Height in.	Test wt.	Plump %	Thin %	Protein %
Xena, WestBred	56.0	31	50.4	67	14	13.7
Haxby	55.2	30	52.2	59	17	13.7
Hays ++	54.8	29	47.4	52	22	13.7
MT970116	54.6	33	52.0	68	10	13.8
Valier	53.5	30	50.5	48	26	14.8
Gallatin	53.3	30	50.0	58	18	14.5
MT970229	53.1	28	52.1	68	7	13.9
Baronesse	52.3	28	49.4	56	21	14.3
Conlon	51.7	32	51.4	71	13	13.9
Eslick, MT960228	51.3	29	50.0	55	22	13.8
Harrington	49.0	28	49.5	59	18	14.8
Haybet ++	44.1	31	45.4	39	43	15.4
Mean	52.4	29.6	50.2	58.7	19.2	14.2

Awnless Hay Barley ++

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

Conducted by MSU Western Triangle Ag Research Center.

Table 3. Off-station Barley varieties. Choteau, 2004.

VARIETY	Yield bu/ac	Height in.	Test wt. %	Plump %	Thin %	Protein %
Haxby	101.9	45	51.2	80	6	16.6
MT910189	99.6	43	50.1	83	4	16.0
MT970229	97.0	44	50.1	87	3	16.4
Hays ++	94.6	43	42.8	50	20	16.7
Conlon	93.4	44	51.8	97	1	16.4
Tradition, BA, 6-row	89.1	46	44.4	41	21	18.1
MT970116	89.0	47	49.8	76	9	17.5
Gallatin	88.9	45	49.9	90	2	12.8
Eslick	87.7	44	47.3	67	11	16.8
Valier	83.3	45	47.3	32	9	18.7
Lacey, 6-row	81.6	45	42.8	25	27	17.3
Haybet ++	80.5	44	43.0	11	42	19.4
Baronesse	80.0	42	44.5	54	16	17.7
Harrington	77.5	45	45.2	51	20	18.4
Metcalfe	77.4	44	43.9	50	22	18.9
Copeland	72.5	45	44.4	41	24	18.7
MEANS	87.1	44.4	46.8	58.4	14.8	17.3
C.V.1: =	6.26					
C.V.2: =	3.62					
LSD (0.05) =	9.10 bu.					
++ Awnless Hay Barley.						
BA = Busch Ag.						

Cooperator & Location: Roy Inbody, east of Choteau, MT.
 Conducted by MSU Western Triangle Ag Research Center.
 Planted Apr 19, 2004, no-till chem. fallow. Harvested Aug 16, 2004.
 Fertilizer, actual: 11-52-0 with seed.

Table 4. Four-year averages, off-station **Barley** varieties. Choteau, 2000-2004.

Variety	4-Year Averages					
	Yield bu/a	Height in.	Test wt.	Plump %	Thin %	Protein %
Haxby	71.5	34	51.5	31	32	17.6
MT970229	67.9	32	50.0	44	17	17.9
Conlon	66.0	31	49.4	51	30	17.6
MT970116	64.2	36	50.0	33	40	17.9
Eslick, MT960228	62.6	33	47.4	33	28	17.9
Xena, WestBred	62.0	31	47.2	37	30	17.6
Hays ++	61.9	31	42.3	20	52	18.0
Gallatin	60.4	33	48.0	30	37	17.5
Valier	57.7	33	47.9	13	49	19.2
Baronesse	56.7	30	46.8	29	31	19.1
Haybet ++	55.0	33	43.1	5	79	20.0
Harrington	52.0	33	45.5	24	39	19.0
Mean	60.8	32.5	47.2	28.0	37.4	18.4

Awnless Hay Barley ++
2002 not included.

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

Conducted by MSU Western Triangle Ag Research Center.

Table 5. Off-station **Barley** varieties. Knees area, 2004.

VARIETY	Yield bu/ac	Height in.	Test wt.	Plump %	Thin %	Protein %
Hays ++	82.9	34	46.2	46	22	13.4
Eslick	81.5	34	52.1	89	2	11.1
Haxby	78.8	34	54.3	70	6	12.1
MT970229	78.8	35	51.9	89	3	13.5
Conlon	77.3	31	51.9	87	4	14.1
MT910189	76.8	34	52.5	88	3	12.7
Lacey, 6-row	76.1	35	48.2	46	16	12.8
Valier	75.8	32	52.2	60	9	12.4
Metcalfe	73.9	33	49.4	62	11	14.0
Baronesse	73.4	31	50.3	70	8	11.7
Tradition, BA, 6-row	72.8	34	49.2	47	14	13.0
Gallatin	72.1	34	52.6	77	7	12.3
MT970116	71.9	33	52.0	77	8	13.0
Haybet ++	71.8	38	48.4	18	37	14.9
Copeland	70.4	31	48.7	59	16	13.4
Harrington	70.1	35	49.8	84	5	12.3
MEAN	75.3	33.6	50.6	66.8	10.7	12.9
C.V.1 =	8.35					
C.V.2 =	4.82					
LSD (0.05) =	10.48 bu					
++ Awnless Hay Barley.						
BA = Busch Ag.						

Cooperator & Location: Dan Picard, Knees area east of Brady, MT.
 Conducted by MSU Western Triangle Ag Research Center.
 Planted Apr 13, 2004, no-till chem. fallow. Harvested Aug 6, 2004.
 Fertilizer, actual: 11-52-0 with seed.

Table 6. Five-year averages, off-station **Barley** varieties. Knees 2000-2004.

Variety	5-Year Averages					
	Yield bu/a	Height in.	Test wt.	Plump %	Thin %	Protein %
Haxby	53.6	28	52.0	50	20	15.0
Eslick, MT960228	53.6	28	48.2	48	20	15.0
Baronesse	53.4	27	47.2	43	28	16.1
MT970229	53.4	28	48.7	69	7	15.8
Xena, WestBred	52.7	29	47.1	52	21	15.3
Hays ++	52.1	29	44.6	32	34	15.8
Valier	51.5	28	48.5	39	31	16.4
Gallatin	51.2	29	48.4	47	24	15.5
MT970116	51.0	30	49.9	61	11	15.5
Conlon	51.0	27	49.0	59	14	15.7
Haybet ++	49.6	31	45.3	10	56	17.1
Harrington	48.9	28	46.4	50	22	16.1
Mean	51.3	28.0	48.1	46.5	25.6	15.9

Awnless Hay Barley ++

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

Conducted by MSU Western Triangle Ag Research Center.

Table 7. Irrigated **Malt Barley** varieties, Conrad 2004.

Variety	Yield bu/a	Head date	Plant height	Lodge 0-9	Test weight lb/bu	Plump %	Thin %	Protein %
Merit	111.6	184	32	5.0	50.9	90	3	12.1
Baronesse	109.2	182	33	3.0	52.8	91	4	13.0
Coors 37	108.2	184	26	0.0	52.9	91	3	12.3
Lacey	107.4	179	38	5.7	51.9	91	3	13.6
Tradition	105.6	181	39	6.7	51.7	94	2	13.7
Drummond	104.1	181	41	5.3	51.4	91	2	13.8
Gallatin	102.4	181	36	4.3	54.2	92	3	13.6
MT981238	98.7	181	36	1.7	54.9	97	2	15.0
Stander	97.9	180	39	5.3	52.3	90	3	13.3
Copeland	97.5	184	39	4.3	52.1	93	2	12.8
MT981210	97.4	182	34	4.0	54.3	97	1	14.0
Metcalfe	97.3	182	32	4.7	53.5	93	3	13.0
Haxby	96.7	181	37	4.3	55.7	95	2	13.2
MT970116	96.4	180	39	4.0	55.1	95	2	13.2
BA1202	96.3	183	33	5.0	52.5	94	2	12.9
Legacy	95.3	181	39	7.7	50.9	87	4	13.2
Foster	92.9	179	39	7.0	50.9	96	1	12.8
Conlon	91.6	178	35	1.3	53.8	96	1	13.3
Excel	89.8	180	40	5.7	50.2	79	7	13.1
Harrington	89.2	183	35	5.0	51.9	87	6	12.4
MT910189	88.2	180	35	7.3	54.2	92	3	13.8
Kendall	85.5	183	36	7.3	52.4	90	4	13.6
Robust	77.7	179	40	7.3	51.0	85	4	14.2
Morex	72.4	180	43	5.7	49.0	74	9	14.2
Mean	96.2	181.2	36.5	4.9	52.5	91	3	13.3
LSD (0.05) =	14.6			3.4	1.1	5	2	
C.V.2 =	5.4							

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

Planted Apr 21, 2004 on fallow. Harvested Aug 17, 2004.

Fertilizer, actual: 11-52-0 with seed. Lodging: 0 = none, 9 = flat.

Table 8. Four-year averages **Irrigated Malt Barley** varieties. Conrad 2001 - 2004.

Variety	4-Year Average						
	Yield bu/a	Head date	Height in.	Test weight	Plump %	Thin %	Protein %
Haxby +	104.4	181	31	54.2	96	2	12.7
Lacey, 6-row	104.0	178	33	51.2	94	3	12.0
Baronesse, WB +	103.4	181	28	53.0	95	2	11.8
MT970116	100.5	180	34	53.4	96	2	12.8
Merit, BA	99.1	184	29	50.0	92	3	11.8
Tradition, BA, 6-row	99.1	181	32	50.4	95	1	12.4
Metcalfe	97.5	182	31	52.2	94	2	12.0
MT981210	97.2	183	30	53.1	96	1	12.6
Foster, 6-row	96.9	178	33	49.8	96	1	11.9
MT981238	96.8	180	31	53.0	94	2	13.7
Gallatin +	96.4	180	32	53.5	95	1	12.2
MT910189	95.9	180	30	52.6	95	2	12.3
Kendall	95.2	183	30	51.9	95	2	12.4
Coors 37	94.8	182	25	52.1	94	2	12.1
BA1202	94.7	182	28	51.0	95	1	12.3
Drummond, 6-row	92.6	180	35	50.1	93	2	12.4
Excel, 6-row	92.3	180	34	49.2	86	4	11.7
Legacy, BA, 6-row	91.7	181	34	49.3	86	4	11.8
Conlon	89.0	178	30	52.9	96	2	12.1
Stander, 6-row	88.8	181	33	50.6	92	2	12.0
Harrington	87.4	182	30	50.6	91	3	11.8
Robust, 6-row	80.2	179	35	49.9	87	3	12.4
Morex, 6-row	69.8	180	35	49.1	83	5	12.9
Mean	94.4	180.8	31.1	51.5	92.9	2.1	12.1

BA = Busch Ag; WB = WestBred; + = feed barley.

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

Table 9. Nineteen-Year x Location Averages - **Barley** Varieties. W. Triangle.

Dryland

Variety	19-Year x Location Average *					
	Yield bu/a	Height in.	Test wt.	Plump %	Thin %	Protein %
Haxby	62.3	30	52.2	52	20	15.0
MT970229	61.1	29	50.8	66	10	15.5
MT970116	59.5	33	51.1	62	16	15.2
Eslick, MT960228	59.2	29	49.0	51	20	15.2
Baronesse	58.7	28	48.3	50	22	15.9
Xena, WestBred	58.5	30	48.6	56	20	15.2
Valier	58.2	29	49.5	41	30	16.4
Gallatin	57.4	30	48.9	49	24	15.5
Conlon	56.6	29	50.0	65	16	15.4
<u>Harrington</u>	<u>53.6</u>	<u>29</u>	<u>47.7</u>	<u>52</u>	<u>22</u>	<u>16.1</u>
Mean	41.1	29.5	48.8	49.8	23.7	15.8

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

Conducted by MSU Western Triangle Ag Research Center.