

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

Year: 2003

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and Pat Hensleigh, MSU Plant Science Dept.

Off-station barley 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.

Results: Data for the off-station locations are presented in Tables 1-8, and include the 2003 data and five-year averages.

Moisture stress was prevalent by mid-season, resulting in below-average test weights except for Haxby and Conlon.

Averaged over several locations and years, dryland field performance of Haxby (2-row feed) was excellent, with yield and test weight being the highest of all varieties. Eslick (MT960228), a 2-row feed type, showed good field performance, especially in the higher moisture environments. Eslick is currently under evaluation in feeding trials for potential high nutritional value.

Yield and test weight of Conlon (2-row malt) were substantially higher than for Harrington. Conlon was 4 days earlier to head than Harrington, which may have contributed to its high relative yield performance under the moisture-stress conditions encountered in most of these trials.

Future Plans: Variety trials will be repeated in 2004 in similar environments.

Table 1

**Dryland Barley** variety trial grown north of  
**Cut Bank**, 2003. Mont. Agr. Expt. Sta., Western  
 Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% Thin	% Protein
Conlon	67.9	50.3	34	89	3	13.9
MT 960099	59.5	46.9	32	14	47	14.1
Hays	58.3	43.3	30	18	45	14.1
MT 970155	58.0	46.9	30	30	23	13.6
Haxby	57.3	48.2	33	8	43	13.8
MT 970116	55.7	48.3	35	39	25	13.8
MT 970229	55.1	49.2	31	53	14	14.5
MT 970148	54.8	44.2	31	31	25	13.9
WPB Xena	51.0	45.2	32	13	46	16.1
Valier	50.8	46.1	34	8	54	15.4
Gallatin	49.8	44.3	30	23	43	15.1
Eslick (MT960228)	47.7	44.0	31	12	52	15.2
Baronesse	47.6	42.1	30	7	58	15.9
Harrington	46.4	44.0	31	20	40	15.8
MT 960101	46.1	43.7	29	14	53	15.1
Haybet	44.0	39.7	33	2	87	15.5

Cooperator: Kevin Bradley.

Location: Fifteen miles north of Cut Bank, MT. (Glacier Co.)

Applied fertilizer: 71-52-0 (N-P-K)

Date seeded: April 24, 2003.

Date harvested: August 18, 2003.

Previous crop: No-till chem fallow (wheat stubble)

Yield experimental mean: 53.12

Error degrees of freedom: 30 F test for var: 2.11

C.V. 2: 8.19 LSD (0.05): 12.56

Table 2

**Five-year** summary for **Dryland Barley** varieties grown near **Cut Bank, MT.** 1999 - 2000 - 2001 - 2002 - 2003. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

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5 - year comparable average						
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Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt.* inches	% Plump	% thin	% Protein
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XENA	52.7	50.5	29	61	15	14.7
CONLON	52.4	52.0	31	69	13	14.5
HAXBY	49.7	52.4	30	52	18	14.7
Eslick (MT960228)	47.5	50.2	28	50	22	15.0
MT 960099	49.6	50.7	27	37	28	14.9
GALLATIN	48.4	50.0	30	54	19	15.6
BARONESSE	48.1	49.3	27	48	23	15.7
VALIER	46.9	50.4	29	37	28	16.2
HARRINGTON	44.7	49.4	27	46	22	16.2
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Cooperator: Kevin Bradley.

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

\* = Plant heights based on 4 years average. (1999-00-01-2003)

Table 3 **Dryland Barley** variety trial grown east of **Oilmont**  
 2003. Mont. Agr. Expt. Sta., Western Triangle Ag.  
 Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% Thin	% Protein
MT 970229	46.2	45.9	26	9	50	19.4
Baronesse	44.5	43.5	24	4	66	18.6
MT 970116	43.5	45.6	28	13	49	18.2
MT 970155	42.7	43.5	25	5	57	18.7
Haxby	42.4	43.1	26	14	41	18.4
Eslick (MT960228)	40.4	43.1	23	3	70	18.2
Valier	38.8	45.4	26	3	66	19.3
Conlon	37.0	47.2	26	68	9	16.7
Haybet	34.0	39.7	26	2	77	17.9
Metcalf	33.9	43.2	26	-	-	-
Gallatin	33.3	43.9	26	7	59	18.7
Hays	32.0	40.9	23	6	55	17.3
WPB Xena	31.7	49.0	26	11	47	17.5
Harrington	28.8	43.4	26	22	34	18.0
MT 960101	28.4	41.8	23	4	69	19.2
MT 960099	27.9	43.6	23	6	64	18.3
MT 970148	27.4	43.6	23	22	32	17.5

Cooperator: Terry Alme.  
 Location: Eight miles east of Oilmont, MT. (Toole County)  
 Fertilizer: 100# 11-52-0 with the seed.  
 Previous crop: Fallow.  
 Date seeded: April 22, 2003.  
 Date harvested: August 5, 2003.  
 Stored soil mixture at seeding was 5 inches.  
 Yield experimental mean: 36.19  
 Error degrees of freedom: 30  
 F test for var.: 10.94  
 C.V. 2: 5.47  
 LSD (0.05): 5.72

Table 4

**Four-year** summary for **Dryland Barley** varieties grown near **Oilmont**. ( 1998 - 1999 - 2000 - 2003 ) Montana Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

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4 - year comparable average

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Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
HAXBY	55.4	48.3	26	45	27	15.5
Eslick (MT960228)	52.4	45.3	25	20	43	15.8
BARONESSE	48.0	46.7	22	28	41	16.9
XENA	46.8	48.4	26	33	31	15.6
CONLON	46.1	50.4	24	44	19	15.0
GALLATIN	44.1	46.6	25	29	40	16.4
VALIER	43.9	47.8	24	14	46	17.1
MT 960099	42.9	47.3	23	10	50	16.5
HARRINGTON	40.8	46.2	24	37	28	16.5

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Cooperator: Terry Alme.

Location: Eight miles east of Oilmont, MT. (Toole County)

Table 5 **Dryland Barley** variety trial grown northeast of **Choteau**, 2003. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% Thin	% Protein
MT 970229	76.2	47.2	32	38	20	16.9
MT 970116	74.7	48.1	36	41	22	16.9
Conlon	74.0	48.9	30	77	8	15.3
Haxby	72.6	50.0	32	16	32	16.5
MT 960099	71.9	43.8	27	6	67	17.0
MT 970148	71.5	44.5	30	34	23	15.8
Eslick (MT960228)	67.1	45.0	31	42	9	16.4
MT 970155	65.8	45.9	32	26	21	17.4
Gallatin	65.6	45.8	32	16	35	17.5
Hays	65.4	39.2	31	8	52	16.9
MT 960101	65.3	43.2	30	6	61	17.7
WPB Xena	64.4	44.0	30	18	35	18.1
Valier	64.2	45.2	32	5	58	17.8
Harrington	64.0	42.3	32	12	41	17.4
Baronesse	62.0	43.2	29	6	50	17.7
Haybet	61.3	40.6	34	2	68	18.3

Cooperator: Roy Inbody.  
 Location: Twelve miles northeast of Choteau, MT.(Teton, County)  
 Applied fertilizer: 130-52-0 (N-P-K)  
 Previous crop: No-till chem fallow.  
 Date seeded: April 22, 2003.  
 Date harvested: Aug. 6, 2003.  
 Rainfall: From May 10 to harvest was 3.5 inches.  
 Yield experimental mean: 67.88  
 Error degrees of freedom: 30  
 F test for var.: 6.63  
 C.V. 2: 2.75  
 LSD (0.05): 5.39

Table 6

**Five-year** summary for **Dryland Barley** varieties grown near **Choteau**. ( 1998 - 1999 - 2000 - 2001 - 2003 ) Montana Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

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5 - year comparable average						
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Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
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HAXBY	68.6	51.6	34	16	41	17.1
CONLON	64.6	48.7	31	38	37	17.1
Eslick (MT960228)	61.0	47.0	33	24	38	17.1
XENA	59.5	47.1	31	28	37	16.8
MT 960099	58.8	46.0	28	5	70	18.6
BARONESSE	58.4	48.1	30	31	31	18.4
VALIER	56.3	48.0	32	8	62	18.2
GALLATIN	54.9	47.3	31	15	47	18.1
HARRINGTON	48.3	45.2	32	19	45	18.1
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Cooperator: Roy Inbody.

Location: Twelve miles northeast of Choteau, MT. (Teton County)

Table 7 **Dryland Barley** variety trial grown east of the **Knees**,  
 2003. Mont. Agr. Expt. Sta., Western Triangle Ag.  
 Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% Thin	% Protein
MT 970116	69.8	47.5	38	44	19	15.0
MT 970148	69.4	44.2	31	29	24	14.6
Conlon	67.7	51.9	33	90	2	14.3
Gallatin	67.1	46.1	34	20	31	15.6
Haxby	66.7	50.4	32	23	24	14.5
WPB Xena	64.5	43.2	32	18	38	16.5
Baronesse	63.3	44.5	32	5	58	16.5
Hays	63.3	42.1	33	15	41	15.0
MT 970229	63.2	43.3	31	50	12	14.7
Eslick (MT960228)	62.8	44.9	32	15	30	15.0
Haybet	62.7	41.6	36	2	67	15.9
Valier	62.0	44.2	32	4	55	16.3
MT 960099	61.9	44.0	28	8	56	15.4
MT 970155	60.7	44.0	31	13	36	16.5
Harrington	60.5	41.7	32	17	38	16.7
MT 960101	54.9	41.8	30	2	76	16.5

Cooperator: Dan Picard.

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

Applied fertilizer: 51-52-0 (N-P-K)

Previous crop: No-till chem fallow (wheat stubble).

Date seeded: April 22, 2003.

Date harvested: July 28, 2003.

Stored soil moisture at seeding: 7 inches.

Rainfall: From June 1 to harvest was 2.1 inches.

Yield experimental mean: 63.78

Error degrees of freedom: 30

F test for var.: 3.04

C.V. 2: 3.38

LSD (0.05): 6.22



Table 8

**Five-year** summary for **Dryland Barley** varieties grown near the **Knees**. ( 1999 - 2000 - 2001 - 2002 - 2003 ) Montana Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

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5 - year comparable average

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Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
BARONESSE	52.9	46.9	25	33	33	17.1
HAXBY	52.1	51.4	27	43	24	15.5
Eslick (MT960228)	50.9	47.4	26	33	28	15.7
XENA	50.9	46.7	28	41	26	15.7
MT 960099	49.9	46.9	24	23	46	16.6
GALLATIN	49.5	47.4	28	35	31	16.2
VALIER	46.6	47.7	27	30	37	17.1
CONLON	47.4	48.3	26	47	19	15.7
HARRINGTON	44.7	45.7	26	39	28	16.8

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Cooperator: Dan Picard.

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