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

Year: 2002

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and
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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: Barley data for the harvested off-station locations are presented in Tables 1-4, and include the 2002 data and five-year averages. An unusual spring storm severely stressed the nursery at Cut Bank, resulting in substantial reductions in tillering and plant height. Stress on the nursery is reflected in the unusually high coefficient of variation (C.V.=9.70), and therefore, little information can be gained from the 2002 data. The Oilmont trial was not established due to drought, and the Choteau trial was lost to hail.

The feed varieties Haxby and Baroness were among the top yielding entries at all locations over the 5-year period. Haxby yielded about 3% less than Baroness, and had the heaviest test weight of all entries. Valier ranked about medium for yield. The malt variety Conlon ranked lowest in 2002, yielding substantially lower than Harrington.

The experimental feed barley lines MT960228 and MT960099 were also among the top yielders for the 5-year period across all locations. In some cases, MT960228 was superior to Baroness for yield and test weight. These two lines are currently under evaluation in feeding trials for their potential high nutritional value.

Future Plans: Variety trials will be repeated in 2003 in similar environments.

Table 1 **Dryland Barley** variety trial grown north of **Cut Bank,** 2002. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	Yield bu/ac	Test wt. lbs/bu.	% Plump	% Thin	% Protein
H3860224	45.2	51.1	97	1	14.7
Xena	44.0	51.6	96	2	12.8
Valier	44.0	50.7	95	2	14.5
Harrington	41.3	50.5	95	2	14.4
MT 970229	40.4	51.4	96	2	13.8
Gallatin	40.2	49.0	93	3	14.7
MT 960100	38.4	50.9	95	2	13.6
Baronesse	38.3	51.5	95	2	13.7
MT 970116	37.3	52.5	97	1	13.4
MT 960226	36.4	51.8	98	1	13.8
Lewis	36.1	50.6	95	2	14.8
MT 960099	36.0	50.9	94	2	12.2
MT 960228	35.1	51.4	96	2	12.8
MT 960101	33.7	50.3	94	2	13.9
Conlon	32.5	51.8	94	2	13.0
HAXBY (MT950186)	28.1	53.1	96	2	14.2

Cooperator: Kevin Bradley.
Location: Fifteen miles north of Cut Bank, MT. (Glacier Co.)
Applied fertilizer: 11-52-0 (N-P-K)
Date seeded: May 2, 2002.
Date harvested: September 11, 2002.
Previous crop: No-till chem fallow (wheat stubble)
Rainfall: From planting to harvest was 12 inches.
Stored soil misture at seeding: 5 inches.
Yield experimental mean: 37.93
Error degrees of freedom: 30
F test for var: 1.54
C.V. 2: 9.70
LSD (0.05): 10.62

Table 2 **Five-year** summary for **Dryland Barley** varieties grown near **Cut Bank, MT**. 1998 - 1999 - 2000 - 2001 - 2002. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

	5 - year comparable average					
Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt.* inches	% Plump	% thin	% Protein
XENA	61.3	52.5	31	80	6	13.0
BARONESSE	56.6	51.6	28	62	13	14.0
HAXBY	55.1	54.2	32	70	10	13.6
MT 960228	54.7	52.4	30	65	13	13.5
GALLATIN	54.1	52.3	32	68	11	14.5
VALIER	53.0	52.2	30	49	19	14.9
MT 960099	52.5	52.3	27	45	22	13.8
LEWIS	51.8	52.9	32	61	14	14.8
HARRINGTON	51.3	51.4	29	60	15	14.8

Cooperator: Kevin Bradley.
Location: Fifteen miles north of Cut Bank. (Glacier County)
* = Plant heights based on 4 years average. (1998-99-00-2001)

Table 3 **Dryland Barley** variety trial grown east of the **Knees**, 2002. 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
Baronesse	51.1	45.7	25	64	11	17.2
MT 970229	50.5	49.2	25	94	1	16.8
Gallatin	50.3	47.4	27	66	12	16.8
MT 960228	49.9	45.7	25	64	9	15.9
Valier	48.8	47.2	25	55	17	17.6
Xena	48.6	46.6	26	73	7	15.1
Lewis	47.2	47.1	26	51	22	17.4
MT 960100	46.6	46.4	22	49	19	18.1
HAXBY (MT950186)	46.5	50.4	25	85	4	15.8
MT 960226	45.5	47.8	25	87	2	15.7
MT 960099	44.8	47.1	22	48	20	16.8
MT 970116	44.5	49.2	26	88	3	16.3
Harrington	42.9	46.3	25	70	9	17.3
H 3860224	42.4	46.2	25	75	9	17.4
MT 960101	41.2	46.4	22	63	17	17.2
Conlon	40.2	44.5	25	45	20	16.3

Cooperator: Dan Picard.
Location: Thirty miles east of Brady, MT. (Chouteau, County)
Applied fertilizer: 11-52-0 (N-P-K)
Previous crop: No-till chem fallow (wheat stubble).
Date seeded: April 22, 2002.
Date harvested: Aug. 11, 2002.
Stored soil moisture at seeding: 5 inches.
Rainfall: From planting to harvest was 7.5 inches.
Yield experimental mean: 46.31
Error degrees of freedom: 30
F test for var.: 2.33
C.V. 2: 4.87
LSD (0.05): 6.52

Table 4 **Four-year** summary for **Dryland Barley** varieties grown near the **Knees.** (1999 - 2000 - 2001 - 2002) Montana Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

	4 - year comparable average					
Variety	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
BARONESSE	50.2	47.5	24	40	27	17.2
HAXBY	48.5	51.7	26	48	24	15.8
MT 960228	48.0	48.0	25	38	27	15.9
XENA	47.5	47.6	27	47	23	15.5
MT 960099	46.8	47.9	22	27	43	16.9
GALLATIN	45.1	47.7	27	39	31	16.4
VALIER	42.8	48.5	25	37	32	17.2
LEWIS	42.3	48.6	25	37	34	17.0
HARRINGTON	40.7	46.7	24	44	26	16.8

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