

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

Year: 1999

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and Dr. Tom Blake, 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 Choteau having deep soil and typically favorable moisture; the Knees with deep soil, intermediate moisture and higher temperatures; Oilmont having less than favorable moisture; and Cut Bank with short, cool growing season. The Cut Bank and Choteau trials were no-till planted on chem-fallow.

Results: Rainfall was about 83% of normal during the growing season, but cool temperatures allowed for high yield and test weight, except at Oilmont. The Choteau location was lost to hail damage.

Data are presented in Tables 1-5, and include 1999 results and 5-year averages. Baroness, Xena and MT960228 ranked near the top for yield at all dryland locations. At Oilmont, Baroness was slightly down from the top yielders, which was likely due to the late maturity of Baroness coupled with moisture depletion.

Chinook yielded higher than Harrington at all locations, except at Conrad where the two were similar. Valier yielded similar to Harrington in most cases.

Merit (Busch Ag), a 2-row malt variety, was grown only at Conrad, and ranked high in both dryland and irrigated trials; yielding higher than BA1202. Merit was late to mature (later than Harrington), suggesting that Merit be considered for irrigated conditions only.

The MTLB line #13 (Lewis/Baroness) was not as consistent as Baroness across locations, but approached Baroness yield in the Cut Bank, Conrad and re-crop trials.

Future Plans: Variety trials will be repeated in year 2000 at these same locations.

Table 1. **Dryland Barley** variety trial grown north of Cut Bank, 1999. 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
Xena	69.3	51.5	32	78	4	14.6
MT960228	67.5	52.4	32	71	5	14.9
Chinook	65.8	51.8	33	64	8	16.3
MT950186	65.8	54.3	34	67	6	14.8
MTLB 13	65.3	51.2	31	42	16	16.0
Baronesse	64.9	51.6	30	58	11	16.0
Bowman	63.5	53.3	34	94	1	14.6
MT920073	63.0	51.4	34	61	10	16.4
Hector	61.8	52.3	33	66	7	15.5
Stark	60.0	53.1	34	85	3	14.6
Gallatin	57.3	52.7	34	70	6	15.8
MTLB 5	56.9	52.0	32	43	16	16.5
Harrington	56.4	51.3	31	36	20	16.8
MTLB 6	56.4	51.5	30	48	16	16.2
Lewis	55.6	53.7	32	37	20	16.7
Valier	54.5	51.7	32	43	15	16.6

Cooperator: Kevin Bradley.

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

Fertilizer: 100# 11-52-0 with seed, and 45# N-urea topdressed.

Rainfall: 5.25 inches from April 1 to harvest.

Previous crop: No-till chemical fallow, barley stubble.

Date seeded: April 8, 1999.

Date harvested: August 26, 1999.

Yield experimental mean: 61.48

Error degrees of freedom: 30

F test for var: 1.97

C.V. 2: 5.54

LSD (0.05): 9.84

Table 2.

**Five-year summary for Dryland Barley varieties**  
 grown near **Cut Bank, MT.** 1995 - 1996 - 1997 -  
 1998 - 1999. Mont. Agr. Expt. Sta., Western  
 Triangle Ag. Research Center, Conrad, MT.

Variety	5 - year comparable average					
	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
CHINOOK	69.4	51.8	33	74	11	11.3
BARONESSE	66.9	51.0	29	68	14	10.8
STARK	64.6	52.8	34	84	5	11.4
GALLATIN	62.4	52.0	32	73	10	11.2
BOWMAN	60.4	52.4	32	92	2	11.1
HECTOR	59.1	51.3	33	70	12	11.3
LEWIS	59.0	52.5	33	65	16	11.8
HARRINGTON	57.8	50.2	31	62	16	11.7

Cooperator: Kevin Bradley.

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

Table 3. **Dryland Barley** variety trial grown east of Oilmont, 1999. 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
MT950186	48.2	47.3	26	29	32	13.8
Xena	46.9	43.8	29	15	44	14.6
Stark	46.1	47.3	29	53	23	13.5
MT960228	45.8	42.2	25	13	44	14.3
Baronesse	43.6	45.1	22	24	41	15.1
MT920073	41.0	43.5	26	34	38	13.8
Lewis	40.5	43.8	27	18	51	15.1
Hector	40.5	43.5	27	11	58	14.3
MTLB 6	40.4	44.7	24	21	44	15.3
Gallatin	39.9	43.0	26	21	45	14.3
Chinook	39.7	44.5	27	16	46	14.9
MTLB 5	39.3	43.5	24	11	59	15.3
Bowman	38.2	46.6	26	64	16	14.0
Harrington	36.3	44.4	25	19	37	15.1
Valier	35.7	44.5	24	8	63	15.7
MTLB 13	34.9	43.9	23	16	49	15.1

Cooperator: Terry Alme.

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

Fertilizer: 45# N urea topdressed & 100# 11-52-0 with the seed.

Previous crop: Fallow.

Date seeded: April 7, 1999.

Date harvested: August 3, 1999.

Rainfall: From May 17 to Aug. 3, was 4.15 inches.

Yield experimental mean: 41.05

Error degrees of freedom: 30

F test for var.: 1.42

C.V. 2: 8.28

LSD (0.05): 9.81

Table 4. **Five-year summary for Dryland Barley varieties** grown near **Oilmont, MT.** 1995 - 1996 - 1997 - 1998 - 1999. Mont. Agr. Expt. Sta., Western Triangle Ag. Research Center, Conrad, MT.

Variety	5 - year comparable average					
	Yield bu/ac	Test wt. lbs/bu.	Plant hgt. inches	% Plump	% thin	% Protein
STARK	59.0	48.1	30	58	28	12.6
BARONESSE	57.9	46.3	24	40	42	13.6
BOWMAN	57.8	48.2	29	70	18	12.7
CHINOOK	57.7	47.5	28	46	37	13.4
LEWIS	56.0	47.5	29	48	38	13.4
HECTOR	55.9	46.6	30	42	40	13.1
GALLATIN	53.6	46.4	30	40	41	13.4
HARRINGTON	52.3	46.2	27	43	40	13.6

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

Table 5. **Dryland Barley** variety trial grown east of the **Knees**, 1999. 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
Stark	80.1	51.4	31	57	16	14.0
Bowman	74.0	50.8	29	66	9	13.9
MT950186	71.3	51.4	29	37	28	14.9
Baronesse	70.5	48.6	25	21	34	16.3
MT960228	69.1	48.1	27	15	39	14.9
Xena	68.8	46.9	28	20	33	14.5
MT920073	67.4	48.9	28	35	32	15.6
Gallatin	63.9	47.8	28	14	43	15.9
MTLB 6	58.4	49.5	26	25	36	15.2
Lewis	57.9	49.4	27	34	33	15.5
MTLB 13	56.5	46.9	26	15	48	15.0
MTLB 5	56.3	49.3	26	16	44	16.0
Chinook	55.3	48.5	30	37	32	15.6
Valier	51.4	48.3	27	19	36	15.7
Hector	50.9	48.2	27	19	44	15.3
Harrington	49.1	46.4	25	27	37	15.5

Cooperator: Dan Picard.  
 Location: Thirty miles east of Brady, MT. (Chouteau, County)  
 Fertilizer: 45# N urea topdressed & 100# 11-52-0 with the seed.  
 Previous crop: Fallow.  
 Date seeded: April 7, 1999.  
 Date harvested: August 5, 1999.  
 Rainfall: From May 6 to Aug. 5, was 4.9 inches.  
 Yield experimental mean: 62.54  
 Error degrees of freedom: 30  
 F test for var.: 11.54  
 C.V. 2: 4.38  
 LSD (0.05): 7.91