

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

Year: 1998

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, and Glacier County near Cut Bank. These three locations represent diverse environments with Choteau having deep soil and typically favorable moisture, Oilmont having less than favorable moisture, and Cut Bank with short growing season. The Cut Bank trial was no-till planted on chem-fallow. Data for the three locations are presented in Tables 1 to 6, and include the 1998 data and five-year averages.

Results: Rainfall was nearly twice the normal during June and July, followed by hot dry conditions in late July and August. This weather pattern contributed to high yield but reduced kernel plump.

Baroness ranked number one for yield at all locations, except at Oilmont where it ranked fourth. The exception at Oilmont was likely due to the late maturity of Baroness coupled with moisture depletion.

Chinook ranked high at all locations, averaging 7 bu/a higher than Harrington. Harrington ranked near the bottom at all locations, averaging 11 bu/a less than Baroness over the past five years.

The MTLB lines (Lewis/Baroness) were not as consistent as Baroness across locations, but approached Baroness yield at Cut Bank and Choteau.

Future Plans: Variety trials will be repeated in 1999 at these same locations.

Table 1. **Dryland Barley variety trial grown north of Cut Bank, 1998. 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	89.7	53.3	36	79	5	7.5
Chinook	89.4	55.4	38	93	2	8.8
MT910189	87.6	55.9	38	96	1	9.3
MTLB 32	86.0	54.9	38	87	4	9.4
MTLB 57	84.4	55.1	39	94	2	8.4
MT910150	84.2	56.0	40	92	3	8.9
MTLB 5	83.8	54.4	40	80	6	8.5
MT920073	83.2	54.7	37	96	2	8.4
Stark	79.9	54.8	40	95	2	10.0
Lewis	79.5	55.9	41	92	2	8.9
Harrington	79.3	53.8	38	89	3	8.7
MTLB 6	78.9	55.1	39	91	3	8.9
Gallatin	78.5	55.7	38	90	3	9.0
Hector	78.2	55.7	42	92	2	8.9
Logan	75.6	54.8	37	95	2	9.5
Bowman	73.7	54.0	37	97	2	10.1

Cooperator: Don Bradley.

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

Fertilizer: 100# 11-52-0 with seed, and 50# N-urea topdressed.

Rainfall: 6.5 inches from May 12 to harvest.

Previous crop: Wheat stubble, no-till chemical fallow.

Date seeded: April 20, 1998.

Date harvested: August 13, 1998.

Yield experimental mean: 82.00

Error degrees of freedom: 30

F test for var: 7.04

C.V. 2: 2.19

LSD (0.05): 5.2

Table 2. **Five-year summary for Dryland Barley varieties grown near Cut Bank, MT. 1994 - 1995 - 1996 - 1997 - 1998. 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	67.6	50.7	31	75	10	9.9
BARONESSE	66.0	49.7	28	72	13	9.5
LOGAN	64.4	51.6	32	94	4	10.1
STARK	64.3	52.4	32	86	5	10.5
GALLATIN	62.4	50.6	31	77	9	9.9
BOWMAN	59.8	51.6	31	93	2	10.2
LEWIS	59.1	50.9	31	74	12	10.3
HARRINGTON	58.8	48.9	30	73	12	10.1
HECTOR	58.2	49.6	32	73	12	10.1

Cooperator: Don Bradley.

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

** = Test weights based on four years average. (1994-95-96-1997)

Table 3. Dryland Barley variety trial grown east of Oilmont, 1998. 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
Lewis	74.7	51.8	27	88	4	13.4
Bowman	73.5	50.7	29	90	5	12.9
Chinook	72.1	51.6	24	87	4	13.5
Baronesse	71.8	49.0	23	68	13	13.1
Hector	70.8	51.1	30	78	10	13.4
MT920073	70.1	50.8	22	90	5	14.0
Gallatin	70.0	51.3	30	74	8	13.6
MT910189	69.1	52.3	21	93	2	12.5
Stark	68.8	51.0	28	90	5	13.2
MT910150	68.1	51.5	21	85	4	14.1
MTLB 57	65.4	50.5	19	79	6	13.0
Harrington	63.1	50.4	25	82	7	13.3
MTLB 6	61.8	50.5	19	78	7	13.9
Logan	60.2	49.2	21	79	8	13.0
MTLB 5	55.0	50.1	20	65	11	14.1
MTLB 32	54.0	49.7	19	70	9	13.5

Cooperator: Terry Alme.

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

Fertilizer: 50# N + 30# P, and 100# 11-52-0 with the seed.

Previous crop: Fallow.

Date seeded: April 14, 1998.

Date harvested: August 6, 1998.

Rainfall: From May 12 to harvest was 6.32 inches.

Yield experimental mean: 66.76

Error degrees of freedom: 30

F test for var.: 1.28

C.V. 2: 8.34

LSD (0.05): 16.08

Table 4. Five-year summary for Dryland Barley varieties grown near Oilmont, MT. 1994 - 1995 - 1996 - 1997 - 1998. 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

BOWMAN	59.0	47.5	29	71	17	12.6
STARK	58.5	46.7	29	51	32	13.1
CHINOOK	57.7	46.8	28	44	39	13.9
BARONESSE	56.5	46.6	24	39	40	14.1
HECTOR	55.7	46.1	30	43	37	13.7
LEWIS	55.4	47.2	29	48	37	13.4
LOGAN	54.3	47.2	25	61	27	13.0
GALLATIN	53.1	45.9	30	38	43	13.6
HARRINGTON	51.0	46.0	27	43	38	14.4

Cooperator: Terry Alme.

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

** = Test weights based on 4 years average. (1994-95-96-1997)

Table 5. Dryland Barley variety trial grown northeast of Choteau, 1998. 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	82.0	48.8	37	57	20	13.8
MTLB 6	81.3	50.8	38	82	9	14.8
MT920073	78.1	49.5	39	79	12	14.1
Chinook	77.9	50.1	39	66	15	14.6
Stark	75.6	51.4	40	82	7	14.7
MTLB 5	74.2	50.5	41	42	25	15.9
MTLB 57	73.7	48.7	36	65	18	14.0
MTLB 32	71.5	48.8	39	46	21	15.4
MT910150	70.3	52.5	39	77	11	15.0
Hector	70.2	49.9	39	69	18	14.1
Bowman	70.1	50.8	35	74	14	14.2
MT910189	69.6	51.0	40	70	14	13.9
Lewis	68.3	52.3	40	78	9	14.6
Logan	64.9	50.6	39	70	14	14.3
Gallatin	58.5	49.4	37	41	24	15.6
Harrington	57.8	45.7	38	45	26	15.3

Cooperator: Roy Inbody.

Location: Twelve miles northeast of Choteau. (Teton Co.)

Fertilizer: 100# 11-52-0 with the seed, + 60# actual 34-0-0.

Previous crop: Fallow.

Date seeded: April 20, 1998.

Date harvested: August 10, 1998.

Yield experimental mean: 71.49

Error degrees of freedom: 30.00

F test for var.: 3.9

C.V. 2: 4.97

LSD (0.05): 10.26

Table 6. **Five-year summary for Dryland Barley varieties grown near Choteau, MT. 1994 - 1995 - 1996 - 1997 - 1998. 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

BARONESSE	87.0	51.4	31	70	10	12.8
STARK	86.7	53.3	34	90	3	12.6
CHINOOK	82.5	51.8	33	68	11	12.9
LEWIS	81.1	53.0	34	77	7	13.0
HECTOR	80.5	52.0	36	74	10	12.8
BOWMAN	78.7	52.6	33	90	4	12.6
GALLATIN	78.5	51.6	34	68	11	13.1
LOGAN	76.8	52.1	33	86	6	12.6
HARRINGTON	73.3	50.6	33	68	11	13.0

Cooperator: Roy Inbody.

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

** = Test weights based on 4 years average. (1994-95-96-1997)