

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

Year: 1997

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak and Ron Thaut, Research Center, Conrad; and Dr. Tom Blake, MSU Dept Plant, Soil & Environ Sci.

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. Data for the three locations are presented in Tables 1 to 6, and include the 1997 data and five-year averages.

Results: Good soil moisture and timely rainfall during the first half of the growing season promoted exceptional yields at each location, but test weights and percent plump were reduced at Cut Bank and Oilmont by moisture depletion before ripening.

The malt variety Chinook was among the top yielders at each location. The yield ranking of Baroness was much lower than in previous years, likely due to its late maturity coupled with a dry second-half of the growing season.

Future Plans: Variety trials will be repeated in 1998 at these same locations.

134
 Table 1 Dryland Barley variety trial grown northeast of
 Choteau, 1997. 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
Steptoe (6-row)	116.3	46.8	39	92	3	9.8
Stander (6-row)	107.2	50.1	39	89	3	11.4
Foster (6-row)	106.9	49.9	39	95	1	11.3
Stark	104.7	53.3	38	98	1	12.4
Chinook	104.2	52.6	37	91	2	12.5
H3860224	104.1	52.6	38	93	2	12.7
H1851195	103.9	52.4	37	96	1	13.0
MT886610	102.5	51.9	39	79	9	12.3
Baronesse	100.8	50.9	35	87	4	12.8
Gallatin	100.4	51.9	37	84	5	12.3
Targhee	100.4	51.1	36	88	5	12.3
Bowman	99.3	52.8	38	98	1	12.5
Lewis	98.4	53.3	36	89	3	13.0
Harrington	96.6	50.3	38	84	4	12.5
Logan	94.2	52.7	36	98	1	12.1
Hector	92.9	51.7	39	87	5	12.8

Cooperator: Roy Inbody.

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

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

Previous crop: Fallow.

Date seeded: May 8, 1997.

Date harvested: August 18, 1997.

Rainfall: From May 21 to harvest was 6+ inches.

Yield experimental mean: 102.04

Error degrees of freedom: 30.00

F test for var.: 3.41 ----- C.V. 2: 2.99 ----- LSD (0.05): 8.82

Table 2

Five-year summary for Dryland Barley varieties grown near Choteau, MT. 1993 - 1994 - 1995 - 1996 - 1997. 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
STARK	91.6	53.0	32.6	93	2	11.9
BARONESSE	91.4	51.5	29.8	78	6	12.3
STEPTOE	90.3	45.4	31.4	80	7	10.5
LEWIS	87.0	52.6	32.0	79	6	12.3
TARGHEE	86.6	51.0	31.2	83	6	12.0
MT 886610	85.9	51.6	32.7	73	9	12.2
CHINOOK	85.7	51.5	31.0	73	9	12.2
HECTOR	85.1	51.9	34.8	79	7	12.3
GALLATIN	85.1	51.7	32.6	79	7	12.1
H1851195	85.1	51.4	32.5	87	3	12.6
H3860224	83.7	51.4	31.6	85	4	12.3
BOWMAN	82.9	52.1	32.2	94	2	12.1
STANDER	79.4	48.7	34.1	85	5	11.4
HARRINGTON	78.3	50.4	32.2	77	7	12.1

Cooperator: Roy Inbody in 1994 -1995 - 1996 - 1997, and Rick Corey in 1993.

Location: Northeast of Choteau. (Teton County)

Table 3 Dryland Barley variety trial grown east of Oilmont, 1997. 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	70.1	48.0	32	44	30	12.9
Bowman	64.0	49.9	32	87	11	12.5
Logan	62.7	48.1	30	71	15	12.1
Chinook	62.2	47.1	31	28	43	12.8
Steptoe (6-row)	61.0	34.9	33	9	54	10.9
Foster (6-row)	60.5	41.9	32	23	38	11.9
Lewis	59.4	47.1	32	36	40	13.7
H1851195	58.1	44.9	31	20	43	13.9
Gallatin	57.3	44.3	33	9	55	12.8
H3860224	54.0	45.2	31	18	55	14.3
Hector	53.9	45.2	33	25	49	13.9
Baronesse	53.7	43.9	26	11	62	13.9
MT886610	54.0	44.2	31	28	48	14.4
Harrington	53.6	43.7	30	15	61	14.7
Targhee	52.7	42.5	31	10	62	13.7
Stander (6-row)	47.5	43.0	31	27	36	13.9

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 28, 1997.
 Date harvested: August 7, 1997.
 Rainfall: From May 29 to harvest was 2.7 inches.
 Yield experimental mean: 57.76
 Error degrees of freedom: 30
 F test for var.: 3.20 ----- C.V. 2: 5.40 ----- LSD (0.05): 9.01

Table 4 **Five-year summary for Dryland Barley varieties**
 grown near Oilmont, MT. 1993 - 1994 - 1995 -
 1996 - 1997. 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
BARONESSE	66.2	47.8	26.2	45	38	13.3
CHINOOK	64.3	47.5	29.2	44	40	13.2
BOWMAN	63.4	48.3	31.0	72	16	12.1
STARK	61.9	47.7	30.8	52	31	12.4
STEPTOE	61.3	39.1	28.6	41	39	11.0
H3860224	60.8	48.9	28.9	45	35	13.8
HECTOR	60.8	47.2	32.0	46	36	12.9
H1851195	60.6	46.9	29.9	44	35	13.0
LEWIS	60.1	48.2	31.2	49	36	12.6
TARGHEE	60.1	46.6	29.9	41	41	12.8
MT 886610	58.1	46.9	29.4	44	39	13.9
GALLATIN	57.8	47.0	31.2	42	42	12.6
HARRINGTON	57.7	47.5	28.8	46	37	13.5
STANDER	56.4	47.7	29.5	68	22	12.6

Cooperator: Terry Alme.

Location: Eight miles east of Oilmont, MT.

(Toole County)

Table 5

Dryland Barley variety trial grown north of
Cut Bank, 1997. 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
Chinook	76.0	48.5	34	44	28	14.7
Logan	70.5	47.8	38	65	14	14.3
Stark	70.2	48.4	36	59	16	14.9
Bowman	66.8	47.5	35	78	7	13.5
Gallatin	66.7	47.6	34	37	34	14.9
H1851195	61.3	46.4	37	48	22	16.6
Baronesse	60.7	44.5	28	24	48	15.5
Lewis	57.4	47.1	33	27	46	16.1
Stander (6-row)	55.1	42.3	34	23	42	14.9
Foster (6-row)	54.4	40.1	36	19	46	14.1
Harrington	53.7	43.2	31	21	50	16.5
Steptoe (6-row)	52.3	35.2	35	12	57	12.9
Targhee	51.2	43.3	36	20	50	16.5
Hector	50.5	45.7	33	38	33	14.8
H3860224	48.7	44.9	33	26	42	17.1
MT886610	46.1	44.0	33	21	53	16.6

Cooperator: Don Bradley.

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

Fertilizer: 100# 11-52-0 with seed, and 60# N-urea topdressed.

Rainfall: 6+ inches from seeding to harvest.

Previous crop: Fallow.

Date seeded: April 28, 1997.

Date harvested: ~~September 2~~, 1997. Aug 20

Yield experimental mean: 58.85

Error degrees of freedom: 30.00

F test for var: 4.49 ----- C.V: 2: 7.16 ----- LSD (0.05): 12.17

Table 6

Five-year summary for Dryland Barley varieties grown near Cut Bank, MT. 1993 - 1994 - 1995 - 1996 - 1997. 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
H1851195	63.2	50.1	32.3	83	7	10.8
BARONESSE	61.1	50.1	25.9	74	12	9.6
TARGHEE	58.7	49.2	30.7	68	14	10.3
CHINOOK	58.6	51.1	29.1	76	10	9.7
STEPTOE	57.2	42.9	28.1	68	16	9.4
STARK	56.0	52.4	30.3	86	5	10.3
GALLATIN	54.1	51.0	28.7	77	9	9.7
MT 886610	53.9	50.4	30.1	73	14	10.0
HARRINGTON	53.5	49.7	28.6	74	12	9.9
H3860224	53.1	50.1	27.1	73	11	10.8
LEWIS	52.9	51.2	29.0	75	12	10.1
HECTOR	52.7	50.2	29.2	73	12	10.0
BOWMAN	52.3	51.7	29.5	93	2	10.1
STANDER	51.7	48.4	28.3	63	12	10.3

Cooperator: Don Bradley.

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

* = Plant height averages based on four years only. (1994-1995-1996-1997)