

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

Year: 1996

Location: Western Triangle Research Center, Conrad, MT.

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Off-station barley variety trials were grown in Teton County near Choteau, Toole County near Oilmont, and Glacier County near Cut Bank. Data for the three locations are presented in Tables 1 to 6, and include the 1996 data and five-year averages.

Results: The season started with good soil moisture but rainfall was below average for the season. The Choteau location was able to produce good yields, which was attributed to deep soil moisture and timeliness of rainfall. Yields at Oilmont were limited by moisture depletion early in the season. In addition to moisture shortages, Cut Bank yields were limited by insufficient nitrogen levels.

The varieties Stark and Baronesse ranked high at each location. This was expected in the case of Stark, as it has shown good adaptation to dry conditions in previous years. Baronesse is somewhat late to mature, and performed surprisingly well under the dry conditions of 1996. Chinook had superior performance in 1996 only at the high yield location of Choteau, but performed well in previous years at Oilmont and Cut Bank as indicated in the 5-year averages.

Future Plans: Variety trials will be repeated in 1997 at these same locations. The soil nitrogen problem at Cut Bank will be corrected.

Table 1                      Dryland Barley variety trial grown northeast of Choteau, 1996. 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)	81.5	42.8	26	54	16	10.2
Stark	81.4	53.5	29	92	1	12.1
Baronesse	81.3	50.5	27	63	9	13.1
Chinook	79.6	50.9	27	46	18	13.1
Hector	79.1	51.5	32	61	14	12.7
Targhee	78.6	49.8	27	74	7	12.7
MT886610	76.9	50.9	28	56	13	13.4
Lewis	76.1	52.1	28	61	11	13.5
Bowman	75.4	52.4	28	95	1	12.4
Gallatin	75.3	50.9	29	71	8	13.2
Logan	75.1	51.1	28	86	4	12.8
Piroline	74.5	52.8	28	51	14	13.7
H3860224	73.1	49.1	28	73	8	13.8
Harrington	72.9	50.4	29	69	8	13.4
H1851195	72.3	51.2	30	81	4	13.1
Stander	58.0	47.1	31	77	8	12.2

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 29, 1996.

Date harvested: August 13, 1996.

Rainfall: From May 22 to harvest was 2.9 inches.

Yield experimental mean: 75.70

Error degrees of freedom: 30.00

F test for var.: 3.06

C.V. 2: 4.27

LSD (0.05): 9.33

Table 2

Five-year summary for Dryland Barley varieties grown near Choteau, MT. 1991 - 1993 - 1994 - 1995 - 1996. 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
BARONESSE	90.8	51.4	31	78	6	12.0
STEPTOE	87.8	44.9	32	79	7	10.5
STARK	87.4	52.8	33	93	2	11.8
CHINOOK	83.3	51.4	32	72	9	11.9
LEWIS	83.1	52.6	33	80	6	12.0
HECTOR	82.7	51.8	35	80	7	12.1
GALLATIN	82.3	51.8	33	80	6	12.0
MT 886610	82.3	51.4	39	73	8	12.1
BOWMAN	79.2	52.1	32	94	2	12.0
PIROLINE	78.0	51.9	33	68	10	12.5
HARRINGTON	75.6	49.9	33	78	7	11.9

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Cooperator: Roy Inbody in 1994 -1995 - 1996, and Rick Corey in 1991 - 1993.

Location: Northeast of Choteau. (Teton County)

Table 3      Dryland Barley variety trial grown east of Oilmont,  
1996. 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
Bowman	37.2	42.9	30	14	56	15.9
Baronesse	34.5	42.3	26	1	92	17.6
Stark	34.2	41.6	30	4	82	14.8
Steptoe (6-row)	33.6	32.5	26	3	81	12.5
Logan	33.5	40.8	27	3	80	16.2
H1851195	31.7	41.4	29	1	89	16.6
Hector	31.3	41.0	29	3	84	15.5
Pirolina	30.8	39.9	31	3	97	15.0
Chinook	29.7	41.5	29	1	93	17.2
H3860224	28.1	45.4	28	5	76	18.6
Targhee	27.4	42.3	28	1	92	16.9
Gallatin	27.4	40.5	29	1	95	17.0
Lewis	27.0	41.4	30	1	94	17.7
Harrington	26.3	41.2	28	1	92	17.1
MT886610	24.8	41.1	28	1	91	17.5
Stander	21.8	44.2	28	45	29	15.3

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, 1996.

Date harvested: August 12, 1996.

Rainfall: From May 21 to harvest was 3.75 inches.

Yield experimental mean: 29.95

Error degrees of freedom: 30

F test for var.: 10.24

C.V. 2: 4.30

LSD (0.05): 3.72

Table 4

Five-year summary for Dryland Barley varieties grown near Oilmont, MT. 1992 - 1993 - 1994 - 1995 - 1996. 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	66.6	47.9	24	58	30	12.9
CHINOOK	64.1	47.7	27	57	32	13.2
HECTOR	63.4	48.0	30	57	30	12.6
BOWMAN	63.0	47.3	29	73	15	12.1
LEWIS	60.3	47.9	29	58	32	12.4
STEPTOE	58.9	40.9	26	58	30	11.1
STARK	59.5	47.3	29	61	27	12.3
PIROLINE	59.3	47.9	30	55	38	12.2
MT 886610	58.9	47.6	27	53	33	13.9
GALLATIN	58.0	47.5	29	57	33	12.4
HARRINGTON	58.0	47.7	27	60	28	13.1

Cooperator: Terry Alme.

Location: Eight miles east of Oilmont, MT.

(Toole County)

Table 5

Dryland Barley variety trial grown north of  
Cut Bank, 1996. 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	48.9	54.5	30	89	2	
H1851195	47.5	51.4	28	83	4	
MT886610	46.6	52.2	28	72	8	
Baronesse	45.8	52.7	25	82	5	
Logan	45.4	53.1	27	92	2	
Targhee	45.0	51.0	26	70	9	
H3860224	44.4	50.7	25	74	7	
Gallatin	40.9	51.0	26	81	4	
Harrington	40.6	51.9	27	80	2	
Steptoe (6-row)	40.5	47.8	25	81	6	
Lewis	39.9	52.3	26	76	8	
Stander	39.8	51.4	25	72	7	
Bowman	39.5	53.7	27	95	1	
Pirolina	39.4	53.8	26	77	4	
Chinook	39.3	51.4	23	60	15	
Hector	32.9	50.5	25	59	16	

Cooperator: Don Bradley.

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

Fertilizer: 100# 11-52-0 with the seed.

Previous crop: Fallow.

Date seeded: May 15, 1996.

Date harvested: August 27, 1996.

Yield experimental mean: 42.21

Error degrees of freedom: 30.00

F test for var: 1.21

C.V. 2: 9.20

LSD (0.05): 11.22

Table 6 Five-year summary for Dryland Barley varieties grown near Cut Bank, MT. 1992 - 1993 - 1994 - 1995 - 1996. 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	65.2	51.0	25	88	3	8.0
STEPTOE	60.3	45.0	25	83	6	8.6
MT886610	58.1	51.9	29	89	4	8.2
CHINOOK	55.5	51.7	28	86	5	8.6
HARRINGTON	55.1	51.4	28	89	2	8.2
HECTOR	54.8	51.1	28	83	6	8.9
PIROLINE	54.1	52.5	29	89	2	8.6
LEWIS	53.2	52.1	27	88	3	8.6
GALLATIN	52.4	51.7	27	88	3	8.5
STARK	52.1	52.9	29	94	1	9.1
BOWMAN	49.5	52.4	27	96	1	9.5

Cooperator: Don Bradley.

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

\* = Plant height averages based on four years only. (1992-1994-1995-1996)