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PROJECT TITLE: Evaluation of spring barley variety performance in off-station trials at Denton and Highwood.

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OBJECTIVES:

To evaluate the performance of spring barley varieties in environments and cropping methods representative of the southern triangle and central Montana.

RESULTS:

The Denton trial was recropped on tilled buckwheat residue, while Highwood was recropped on tilled field pea ground. Barley yields were below average at Denton and near average at Highwood.

Denton: Yields ranged from 32 to 25 bu/a, with Logan producing the highest yield. Test weights averaged 48.5 lbs/bu, while proteins averaged 13%. Data are presented in Tables 1 & 2.

Highwood: Yields ranged from 53 to 43 bu/a, with MT886610 producing the highest yield. Test weights averaged 47.9 lbs/bu, while proteins averaged 12.2%. Data are presented in Tables 3 & 4.

SUMMARY:

Varieties with high yield averages over 10 years at Denton are Steptoe, Lewis, Pirolina, and Chinook. Baronesse has also done well over the 6 years that it has been in the trial. The variety with the high average yield over 7 years at Highwood is Baronesse.

FUTURE PLANS:

Spring barley variety evaluations are to be continued at Denton and Highwood/Fort Benton.

Table 1 1996 Denton Barley Variety Performance Trial
 Exp. 3671 Central Agricultural Research Center, Moccasin, MT.

ID#	Variety	Plant Ht.	Grain Yield	Test Wt.	Protein Content
		"	bu/a	lbs/bu	%
N1123111	Logan	21	32.4	48.5	13.2
ND 9866	Stark	26	32.1	49.7	12.3
CI 15514	Hector	24	31.9	48.6	12.9
CI 15856	Lewis	22	31.5	49.6	13.0
CI 15229	Steptoe	19	31.0	45.6	11.4
PI491534	Gallatin	23	30.9	50.6	12.9
NS 78054	Baronesse	19	30.8	48.5	13.4
PI591823	Chinook	22	30.5	48.3	13.1
H1851195	H1851195	22	29.5	47.9	13.6
PI537438	Targhee	20	29.1	47.4	13.1
CI 9558	Pirolina	22	28.9	49.0	13.6
PI483237	Bowman	24	28.9	50.3	12.4
MT886610	MT886610	22	28.3	47.5	13.5
MN 56	Stander	19	27.9	47.5	12.5
H3860224	H3860224	20	27.4	48.7	14.2
SK 76333	Harrington	21	25.2	47.9	13.3
EXPERIMENTAL MEANS			29.77	48.48	13.01
F TEST FOR VAR. df=30			.78	4.94	6.43
C.V. 1: (S/MEAN)*100			12.96	1.99	3.42
LSD (0.05)			6.43	1.61	.74

Planted: 4-30-96 recrop following buckwheat.
 Fertilizer: 60 units N preplant
 Harvested: 8-14-96
 Growing Season Precipitation (April-July): 5.16 inches
April May June July
 0.72" 3.02" 1.37" 0.05"
 Producer: Richard Barber, Denton.

Table 2 Denton Off-Station Barley Multi-Year Summary
Central Agricultural Research Center, Moccasin, MT.

Variety	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	Ave.	Hector Same Yrs
						€				€		
							bu/a					
HECTOR	40	35	68	38	68	45	90	41	66	32	52	--
PIROLINE	47	34	73	43	63	37	99	41	65	29	53	52
HARRINGTON	56	28	53	37	59	37	102	33	70	25	50	52
LEWIS	66	24	59	46	68	33	101	41	69	31	54	52
BOWMAN	53	26	56	42	51*	37	99	42	67	29	50	52
STEPTOE	62	29	74	44	67	40	108	37	63	31	55	52
GALLATIN	67	35	59	42	65	39	100	40	68	31	50	52
CHINOOK		32	61	41	72	30	106	37	70	30	53	54
STARK				49	70	36	105	41	71	32	58	54
BARONESSE					71	37	121	38	73	31	62	57
TARGHEE									67	29	48	49
H3860224									74	27	50	49
H1851195									68	29	48	49
MT886610									66	28	47	49
Mean	57	31	62	41	65	37	104	38	68	30		

*Bowman suffered unidentified insect damage in 1991. Stark also showed some damage in one rep.

€Planted recrop on field pea ground in 1992, recrop following buckwheat in 1996, all other years on fallow.

Variety trials were located on Richard Barber farm.

Table 3 1996 Highwood Barley Variety Performance Trial
Exp. 3672 Central Agricultural Research Center, Moccasin, MT.

ID#	Variety	Plant Ht.	Grain Yield	Test Wt.	Protein Content
		"	bu/a	lbs/bu	%
MT886610	MT886610	21	52.8	48.8	12.3
PI537438	Targhee	20	52.3	48.4	12.3
CI 15856	Lewis	21	52.2	45.3	12.0
CI 9558	Pirolina	21	51.0	46.0	12.0
H3860224	H3860224	19	50.9	47.6	12.3
CI 15514	Hector	22	50.8	48.4	12.1
SK 76333	Harrington	20	50.4	48.3	12.6
H1851195	H1851195	21	49.9	48.1	12.0
MN 56	Stander	18	49.3	49.1	12.2
N1123111	Logan	21	49.1	46.1	11.9
NS 78054	Baronesse	18	48.6	47.3	12.6
CI 15229	Steptoe	17	48.1	49.5	12.5
ND 9866	Stark	23	48.0	48.1	12.3
PI591823	Chinook	21	46.2	47.6	12.7
PI483237	Bowman	22	46.0	48.7	11.9
PI491534	Gallatin	22	42.9	49.2	12.3
EXPERIMENTAL MEANS			49.29	47.90	12.24
F TEST FOR VAR. df=30			.32	1.20	.49
C.V. 1: (S/MEAN)*100			16.26	4.03	5.01
LSD (0.05)			13.36	3.22	1.02

Planted: 4-25-96 recrop on field pea ground.

Fertilizer: 50# 18-46-0 w/seed.

Harvested: 8-6-96

Producer: Ron Long, Shonkin.

Table 4 Highwood Off-Station Barley Multi-Year Summary
Central Agricultural Research Center, Moccasin, MT.

Variety	1990	1991	1992	1993	1994	1995	1996	Ave.	Hector Same yrs
HECTOR	65	42	21	69	65	56	51	53	--
PIROLINE	64	39	22	68	70	57	51	53	53
HARRINGTON	68	36	21	68	54	64	50	52	53
LEWIS	55	43	19	73	61	50	52	50	53
BOWMAN	57	41	20	75	59	59	46	51	53
STEPTOE	43	52	26	76	70	58	48	53	53
GALLATIN	62	39	28	66	63	52	43	50	53
CHINOOK	58	38	20	74	66	67	46	53	53
STARK	55	38	19	71	62	51	48	49	53
BARONESSE		41	24	75	72	73	49	56	51
TARGHEE						60	52	56	53
H3860224						70	51	60	53
H1851195						67	50	58	53
MT886610						67	53	60	53
Mean	58.8	39.9	22.5	71.2	63.0	62.2	49.3		

Variety trials were located at Ron Long farm.
The 1989 trial experienced severe hail damage.
All trials were planted on recrop ground.