PROJECT TITLE: 2004 Evaluation of barley variety performance in recrop following an oilseed or pulse crop near Moccasin, Denton and Geraldine.

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OBJECTIVES:
Evaluate the agronomic performance of spring barley varieties in recrop or continuous crop environments in the southern triangle and central Montana.

RESULTS:
The Geraldine location was established after winter wheat rather than a specialty crop. The post emerge wild oat control measure was not successful so the barley trial was abandoned due to variable wild oat stand. Barley stands at Moccasin (after mustard) and Denton (after lentils) were decent but not outstanding. Dry spring weather delayed emergence and hindered uniform emergence. However, yield were near expected levels at Moccasin (56.6bu/a) and below expectation at Denton (42.4 bu/a). Hays, Haxby, Tradition and MT970116 were the top grain producers at both locations. Haxby, Conlon and MT970116 had the highest test weights at both locations.

SUMMARY:
2004 Barley yields were suppressed by dry early spring conditions. However, the barley was able to respond positively to the cool June weather. Early seeding help the yields at both locations.

FUTURE:
The barley variety evaluations will continue at Moccasin and Denton but will be suspended at Geraldine due dilution of resources.

Table 1 2004 No-Till continuous crop spring barley variety trial.
Exp 3670 Central Agricultural Research Center. Moccasin, Montana.

Variety	ID code	Grain Yield	Test Weight	Plump	Thin	Protein Content
		bu/ac	lb/bu	%	%	%
MT970116	MT970116	61.9	52.9	11.6	32	13.1
Hays	MT981060	61.7	41.45	58.3	28.9	13.1
Tradition	6B952482	61.4	49.25	32.4	38.4	11.6
Haxby	MT950186	60.5	52.5	61.6	28.5	13.4
MT960228	MT960228	60.3	50.35	48.8	36.2	13.8
Conlon	ND13299	60.0	52.85	36.9	43.2	12.1
Baronesse	PI568246	58.9	48.7	29	35.1	14.3
MT970229	MT970229	57.7	52.25	77.2	18.4	13.6
Gallatin	PI491534	56.5	51.65	34.6	38.5	14.2
Valier	PI610264	56.2	51.5	68.1	23.5	13.9
Harrington	SK 76333	55.1	49.4	20.4	46.4	13.9
MT910189	MT910189	54.3	51.8	32.4	39.5	12.1
Lacey	PI613703	52.0	48.45	19.2	38.2	13.2
Haybet	PI533600	51.6	45.1	18.1	38.9	13.1
Metcalfe	TR232	50.6	47.2	90.8	7	13.2
Copeland	TR150	47.4	46.5	10	39.5	13
Means		56.62	49.49			
F TEST FOR VAR.		3.85	29.95			
C.V. 1: (S/MEAN)*100		6.95	1.67			
LSD (0.05)		6.56	1.77			

Planted: April 7, 2004 No-till CC after yellow mustard 03, spr wheat 02, and peas 01.
Fertilizer: Pre-plant topdress 30N as urea. W/seed 10-10-10-5.
Herbicide: Post plant 10 oz glyphosate. Bronate: barley @ 4-5 leaf on May 24
Precipitation: Sept -Aug 13.5 (ave 15.4)

Table 2 2004 Denton spring barleyperformance evaluations.
Exp. 3671 Central Agricultural Experiment Station.Moccasin, Montana.

Variety	ID	Plant Height	Grain Yield	Test Weight	Sieve Size			Protein Content
					Plump	Mids	Thin	
		"	bu/a	lbs/bu	%	%	%	%
Hays	MT981060	29.1	48.4	39.3	10.6	54.1	35.3	14.4
Haxby	MT950186	26.8	47.7	51.4	16.4	32.1	51.5	12.9
Tradition	6B952482	32.7	45.8	48.4	16.5	47.6	35.9	12.0
MT970116	MT970116	35.0	45.3	51.1	51.2	14.6	34.2	12.4
Valier	PI610264	28.4	45.0	49.3	10.1	52.4	37.6	13.6
Conlon	ND13299	30.7	43.6	51.4	91.7	3.6	4.6	12.5
Metcalfe	TR232	33.1	43.2	46.0	24.5	28.4	47.1	13.6
Baronesse	PI568246	27.2	43.1	46.3	9.4	50.5	40.1	12.2
Gallatin	PI491534	28.4	42.5	48.1	20.7	35.5	43.8	13.8
MT970229	MT970229	28.4	41.7	50.2	61.7	11.7	26.5	13.3
Lacey	PI613603	37.8	41.4	45.3	12.6	51.7	35.6	12.1
MT910189	MT910189	26.8	41.0	46.9	7.1	43.7	49.2	13.6
Copeland	TR150	35.0	39.2	45.3	23.5	32.9	43.7	12.5
MT960228	MT960228	28.0	39.0	47.4	15.3	40.8	43.9	12.4
Harrington	SK 76333	29.9	36.4	45.4	17.8	40.9	41.3	14.6
Haybet	PI533600	30.7	35.3	39.4	3.7	77.1	19.2	14.1
Mean		30.5	42.4	47.0	24.6	38.6	36.8	13.1
F test var			1.27					
C.V. 1:			13.37					
LSD (0.05)			9.46					

Planted: April 6, 2004 No-till in to continuous cro| 2" Soil temp: 15C
Fertilizer: N 45 lbs urea topdress. W/seed NPKS 10-10-10-05.
Herbicide:
Precipitation: 18" moist soil @ seeding.

Table 3 Moccasin recrop barley multi-year yield summary of selected varieties, 1993-2004
Exp. 3670 Central Agricultural Research Center, Moccasin, MT

Selected	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Ave.	Gallatin Same Yrs
Varieties	---------- bu/a ----------													
Gallatin	58	48	56	30	67	39	60	49	52	45	23	57	48.7	48.7
Harrington	62	44	65	31	71	36	50	51	57	44	24	55	49.2	48.7
Lewis	66	44	58	33	76	37	58	54	53	46			52.5	50.7
Baronesse	76	44	63	33	73	44	54	57	54	50	21	59	52.3	48.7
Xena							53	57	60	54	21		49.1	45.9
Valier							56	50	53	43	23	56	46.8	47.7
Haxby							53	57	50	48	31	60	50.0	47.7
Eslick	MT 960228						57	60	50	53	24	60	50.8	47.7
Hays	MT9601 *Seed available to seed growers in 2003.*							52	52	51	27	62	48.6	45.2
Mean	64.3	42.1	63.5	30.6	71.7	41.8	54.9	53.2	52.6	52.6	24.2	56.6		

Table 4 Denton recrop barley multi-year yield summary of selected varieties, 1993-2004
Exp. 3671 Central Agricultural Research Center, Moccasin, MT

Selected	1993	1994	1995	1996	1997	1998	1999	2000	2002	2003	2004	Ave.	Gallatin Same Yrs
Varieties	---------- bu/a ----------												
Gallatin	100	40	68	31	78	38	31	55	39	21	43	49.4	49.4
Harrington	102	33	70	25	68	40	33	47	40	20	36	46.8	49.4
Baronesse	121	38	73	31	73	41	27	52	39	24	45	51.2	49.4
Xena							34	56	42	28		39.8	36.5
Valier							27	48	40	25	45	46.8	37.7
Haxby							34	56	36	30	48	46.1	37.7
Eslick	MT 960228						27	51	42	16	39	46.0	37.7
Hays	MT960100							49	42	20	48	44.7	39.4
Mean	104	38	67.9	29.8	72.3	39.3	31.6	51.8	40.4	23.1	42.4		

* Trial was not harvested in 2001 because of extreme uneven germination throughout the nursery.
1996 trial was re-crop following buckwheat. 1997 trial was recrop following millet.
1998 through 2002 recropped on pulse stubble.