

Motion to release MT981427 as a PVP variety to be sold to a private seed company/plant breeding company.

MT981427

MT981427 is a two rowed hooded spring barley developed for use as a hay or forage barley. MT981427 is a cross between 'Haybet' (P.I.533600) and 'NE760'. 'Haybet'(P.I.533600) was developed by USDA-ARS and the Montana Experiment Station and was released in April 1989. Haybet is a two-rowed, hooded, whitekerneled, spring barley developed as a forage barley and derived from the cross 'Betzes*7"/>'Strip Tease'. NE760 is a two rowed awned variety developed in Argentina that was part of a cooperative germplasm exchange. NE760 was tested at Bozeman under dryland conditions in the 1990's. It is approximately 5 inches shorter, 7 days earlier, yielded slightly lower (5 bu) and had lower test weights (0.5 lb/bu) than Gallatin under dryland conditions in Bozeman. The cross was made in 1993 and individual F1 plants were planted and harvested in 1994, F2 populations were planted and single heads were harvested in 1995. Single seed descent in the Montana State University ABS Plant Growth Center was utilized in 1995-1996 to advance two generations and F5 head rows were planted in the spring of 1996. F6 two row plots were planted in 1997 and selections were made based on agronomic and forage potential.

Agronomic Performance

'MT981427' was tested for forage and grain performance in Montana from 2004 through 2007.

Table 0.1 MT981427's Thirteen location forage yields regressed on location mean yield. Five Montana and one North Dakota locations in 2005, 2006 and 2007.

	Projected yields $y=a+b x$	$x= 1$ ton/acre	$x=2.545$	$x= 4$ ton/acre
MT981427	$Y=0.0737+1.0694 * (X)$	1.143	2.795	4.351
MT981384	$Y=0.0125+1.088 * (X)$	1.101	2.781	4.365
Stockford	$Y=0.5058+0.8845 * (X)$	1.390	2.757	4.044
Lavina	$Y=0.2073+0.9815 * (X)$	1.189	2.705	4.133
Hays	$Y=0.743+0.7412 * (X)$	1.484	2.629	3.708
Haybet	$Y=0.1438+0.9735 * (X)$	1.117	2.621	4.038
Red 1 Trit	$Y=0.2432+1.0692 * (X)$	0.826	2.478	4.034
		13 location mean:	2.545	

VARIABLE	MEAN	STD-DEV	SKEWNESS	KURTOSIS	MIN	MAX
MT981427	2.795	0.7476	-0.4179	2.56	1.275	4
Mean Yields	2.545	0.6619	0.4397	2.988	1.46	4
CORRELATION	0.9468					
DEPEND VARIAB	ENTRY Y					

FIT:

VARIABLE	R-PART	B	SE(B)	T	P-VALUE
Mean Yields	0.9468	1.0694	0.1096	9.76	0.000
INTERCEPT	0.07372				
ROOT MS RESID	0.2514				
R-SQUARED	0.896				
ADJ R-SQUARED	0.887				

SOURCE	DF	S.S.	M.S.	F-VALUE	P-VALUE
REGRESSION	1	6.0127	6.01270	95.16	0.000
RESIDUAL	11	0.69503	0.06319		
TOTAL	12	6.7077			

Spring Cereal Forage Relative Forage Yield section

Table 1 2004 Preliminary dry matter yield evaluation of hooded spring barley lines. Exp PreSCf 0 MSU Barley Program and Central Ag Research Center. Bozeman & Moccasin, Montana.

ID code	Pedigree	Bozeman		CARC	3 Loc	Bozeman		CARC	3 Loc	Frequency
		Irrigated	Dryland	Recrop dry	Average	Irrigated	Dryland	Recrop dry	Average	
		t/a	t/a	t/a	t/a	Yld Rnk	Yld Rnk	Yld Rnk	Yld Rnk	#
MT981060	Hays	4.670	3.852		4.261	7	1			
MT981427	Haybet/NE760A	6.000	3.509	1.780	3.763	1	3	5	2	2
MT981397	Haybet/Baronesse	5.330	3.589	2.142	3.687	2	2	1	3	3
MT981384	Haybet/Baronesse	5.000	3.479	1.925	3.468	4	4	2	4	1
MT981064	Haybet/MT889106	5.000	3.354	1.901	3.418	3	5	3	5	2
Haybet	Haybet	5.000	3.235	1.711	3.315	5	6	6	6	0
MT981062	Haybet/Baronesse	4.330	3.178	1.838	3.115	8	7	4	7	0
Westford	Westford	4.670	2.759	1.529	2.986	6	9	8	8	0
Horsford	Horsford	4.000	3.012	1.597	2.870	9	8	7	9	0
Mean		4.89	3.330	1.8030	3.341					
CV 1		8	7.03	11.6300						
LSD (0.05)		0.68	0.405	0.4837						

Table 2 2005 Montana uniform spring cereal forage variety trial dry matter yields.

Cultivar	Species	Post Farm	WARC	DREC	NWARC	CARC	CARC	Average
		Bozeman	Corvallis	Dickinson	Kalispell	Moccasin	Winifred	
		t/a						
MT981427	barley	3.470	3.541	2.494	3.25	2.187	3.264	3.034
MT981384	barley	3.464	3.520	2.269	3.27	2.186	2.992	2.951
Hays	barley	3.427	3.613	2.315	3.01	2.067	3.046	2.914
Red 1 trit	triticale	2.827	2.573	2.585	3.51	2.422	2.799	2.785
MT981397	barley	3.526	3.123	1.655	3.04	2.095	3.194	2.773
Bestford	barley	2.890	3.164	2.140	3.48	2.166	2.369	2.701
Stockford	barley	3.138	3.019	1.505	2.83	2.006	3.641	2.690
Haybet	barley	3.197	3.208	1.905	2.93	2.066	2.822	2.688
Westford	barley	2.876	2.782	2.356	2.79	2.083	2.751	2.606
Lucile	emmer	2.490	3.380	2.651	2.55	1.775	2.650	2.583
Awnless SW7	triticale	2.802	3.500	2.560	2.77	1.699	1.946	2.547
Horsford	barley	2.813	2.236	1.894	3.23	2.202	2.516	2.482
91002005	triticale	2.620	2.763	2.275	2.87	2.061	1.840	2.404
Kntz1094	spelt	2.826	2.408	2.393	2.92	1.676	1.760	2.330
MTCF 30	triticale	2.851	2.899	1.858	2.67	1.305	2.242	2.304
92L012020	triticale	2.429	2.791	2.101	2.36	1.853	2.201	2.289
SK3P Select	spelt	3.005	2.817	1.815	2.35	1.646	2.042	2.280
Mondak	emmer	2.147	2.886	1.825	1.85	0.983	1.639	1.888
Mean		2.933	3.012	2.144	2.87	1.915	2.540	2.569

Post Farm: air dry basis. Other locations: dry weight basis.
 DREC - Dickinson, ND Research and Extension Center
 CARC- Central Ag Research Center

WARC - Western Ag Research Center
 NWARC -Northwest Ag Research Center

Table 3 2005 forage yield rank of spring cereal lines at six Montana locations.

Variety	Species	Post	WARC	DREC	NWARC	CARC	CARC	6 loc	Ave Rank	Freqncy	
		Bzman	Corvlls	Dcknsn	Crstn	Moc	Wnfrd	Mean Yld	Across Loc	in top 5	
		rank					#				
MT981427	barley	2	2	4	4	3	2	1	2.8	7	
MT981384	barley	3	3	9	3	4	5	2	4.5	6	
Hays	barley	4	1	7	7	8	4	3	5.2	4	
Red 1 trit	triticale	11	16	2	1	1	7	4	6.3	4	
MT981397	barley	1	8	17	6	6	3	5	6.8	3	
Bestford	barley	8	7	10	2	5	11	6	7.2	2	
Stockford	barley	6	9	18	11	11	1	7	9.3	1	
Haybet	barley	5	6	12	8	9	6	8	7.7	1	
Westford	barley	9	14	6	12	7	8	9	9.3	0	
Lucile	emmer	16	5	1	15	13	9	10	9.8	1	
Awnless SW7	triticale	14	4	3	13	14	15	11	10.5	2	
Horsford	barley	13	18	13	5	2	10	12	10.2	2	
91002005	triticale	15	15	8	10	10	16	13	12.3	0	
Kntz1094	spelt	12	17	5	9	15	17	14	12.5	1	
MTCF 30	triticale	10	10	14	14	17	12	15	12.8	0	
92L012020	triticale	17	13	11	16	12	13	16	13.7	0	
SK3P Select	spelt	7	12	16	17	16	14	17	13.7	0	
Mondak	emmer	18	11	15	18	18	18	18	16.3	0	

Post Farm: air dry basis. Other locations: dry weight basis. DREC - Dickinson, ND Research and Extension Center
 NWARC - Northwestern Ag Research Center WARC - western Ag Research Center CARC - Central Ag Research Center

Table 4 2006 Multi-Location spring cereal forage dry matter yields
 Post Farm, Southern and Central Ag Research Centers. Bozeman, Huntley and Moccasin, MT

Variety/Line	Entry	NTRC	NTRC	SARC	SARC	NARC	Bzman	Six
		after Mustard	after winter cereal forage	Dryland Fallow	Irrigated Recrop	Dryland Fallow	Irrigated Recrop	Location Average
		t/a						
MT981397	3	2.350	1.799	3.221	4.461	1.632	2.943	2.734
MT981384	10	2.188	1.750	3.288	4.457	1.369	2.987	2.673
MF050501	9	2.277	1.715	3.362	4.057	1.403	3.075	2.648
MT981427	13	2.383	1.943	3.059	4.154	1.274	3.064	2.646
Stockford	4	2.430	1.718	2.898	3.705	1.666	3.395	2.635
MF050502	8	2.261	1.569	2.871	3.969	1.640	3.259	2.595
MF050507	7	2.240	1.642	2.927	3.867	1.398	3.152	2.538
Haybet	2	2.426	1.854	3.065	3.653	1.520	2.525	2.507
MF050505	5	2.245	1.687	2.822	3.518	1.680	2.863	2.469
MF0506	14	1.968	1.866	2.765	3.823	1.391	3.023	2.473
Hays	1	2.118	1.694	2.897	3.398	1.476	2.618	2.367
Red 1 trit	11	1.579	1.451	2.700	4.138	1.537	2.532	2.323
Bestford	12	1.796	1.857	2.660	3.721	0.961	2.097	2.182
Westford	6	1.828	1.700	2.387	3.383	1.494	2.069	2.144
Mean		2.149	1.732	2.923	3.879	1.46	2.829	
P value		0.0003	0.134	0.0032	0.0013	0.875		
CV 1 %		9.8	10.1	8.4	7.9	30.2	9.7	
LSD(0.05 by t)		0.3514	0.2935	0.4128	0.5117	0.740	0.392	

CARC - Central Ag Research Center near Moccasin SARC - Southrn Ag Research Center near Huntley
 NARC - Northern Ag Research Center near Havre NTRC - no till recrop

Table 5 2006 Spring cereal forage relative yield ranking across five Montana locations.

Variety/Line	NTRC after	NTRC after	SARC Dryland	SARC Irrigated	NARC Dryland	NARC Irrigated	Bzman 06 Ave Yld Rank	Average Rank	Frequency in top 5
MT981397	4	5	3	1	4	8	1	4.2	5
MT981384	9	6	2	2	12	7	2	6.3	2
MF050501	5	8	1	5	9	4	3	5.3	4
MT981427	3	1	5	3	13	5	4	5.0	5
Stockford	1	7	7	10	2	1	5	4.7	3
MF050502	6	13	9	6	3	2	6	6.5	2
MF050507	8	12	6	7	10	3	7	7.7	1
Haybet	2	4	4	11	6	12	8	6.5	3
MF050505	7	11	10	12	1	9	9	8.3	1
MF0506	11	2	11	8	11	6	10	8.2	1
Hays	10	10	8	13	8	10	11	9.8	0
Red 1 trit	14	14	12	4	5	11	12	10.0	2
Bestford	13	3	13	9	14	13	13	10.8	1
Westford	12	9	14	14	7	14	14	11.7	0
Previous crop	Mustard	WCF	Fallow	Recrop	Fallow	Recrop			

Table 6 2007 Spring cereal forage variety trial under no-till continuous crop.

Exp2370 Central Agricultural Research Center, Moccasin, Montana

Line	trt #	Head Date	Plant Height	Dry Matter		Test Weight	Grain Yield	D.M. Yield Rank	Grain Yld Rank
		d of y	cm	%	t/a	lbs/bu	lbs/a		
MF050501	6SCF9	183	68	0.391	2.777	48.2	2557	1	7
Stockford	6SCF4	180	79	0.351	2.747	48.3	2414	2	10
MT981384	6SCF10	181	70	0.382	2.739	50.5	2770	3	4
MF050505	6SCF5	180	68	0.369	2.670	50.0	3191	4	1
MT981427	6SCF13	180	83	0.339	2.465	51.4	2182	5	11
MT981397	6SCF3	180	72	0.36	2.454	50.8	2700	6	5
MF0506	6SCF14	181	75	0.326	2.402	51.1	2863	7	2
Hays	6SCF1	183	66	0.372	2.388	48.5	2473	8	9
Goose Wheat	6SCF8	181	68	0.358	2.265	50.9	2574	9	6
MF050507	6SCF7	179	64	0.349	2.132	51.2	2820	10	3
Bestford	6SCF12	183	86	0.286	2.062	43.6	2478	11	8
Haybet	6SCF2	180	70	0.362	2.044	49.8	1854	12	13
Red 1 trit	6SCF11	179	101	0.342	2.016	44.7	1725	13	14
Westford	6SCF6	184	72	0.316	1.870	44.1	2076	14	12
mean		181	74.43	0.3502	2.359	48.79	2477		
P value		0.0			0.0158	0.0	0.0		
CV 1		0.402			13.71	0	10.87		
LSD 0.05		1.221			0.543	0	451.9		

Seed date: 23-Apr-07

Field book FBScf07.dbf

Fertilizer: 10-10-10-5 NPKS w/seed

45 N topdress on 7-May-07

Harvest Date: 2 July and 6 July 2007

Cereal Forage Feed Quality Section

Table 8

Feed quality of 2004 spring cereal forage preliminary yield trial entries (1 rep)

	Crude		Net Main		Net. Gain		RFV	Nitrate
	ADF	NDF	Protein	TDN	Energy	energy		
	%	%	%	%	Mcal/lb	Mcal/lb		
MT981397	28.64	51.8	7.65	62.7	0.63	0.38	109	0.01
MT981384	27.27	51.6	8.97	63.9	0.65	0.40	110	0.05
MT981427	32.48	54.3	6.42	58	0.57	0.32	98	0.01
MT981064	28.50	53.7	7.56	63	0.63	0.38	105	0.02
MT981062	30.92	54.9	8.12	59.8	0.59	0.34	99	0.02
Westford	27.71	51.3	8.66	63.1	0.64	0.39	110	0.02
Haybet	27.05	52.5	8.94	64.4	0.65	0.41	109	0.02
Horsford	30.20	52.9	7.97	61.2	0.62	0.36	104	0.03

Table 9 2006 Spring cereal forage **ADF%** and ADF rank, **low to high**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	ve AD Rank	Ave Rank	Freq. in Top 5
	NPKS w/sc	no PKS	CC		JPKS w/s	no PKS	CC			
	ADF	ADF	ADF		ADF	ADF	ADF			
	%	%	%	%	#	#	#	#	#	#
MF050501	29.6	29.3	29.5	29.5	2	5	2	1	3.0	3
Bestford	30.5	27.8	30.1	29.5	6	1	3	2	3.3	2
Westford	30.1	27.9	30.4	29.5	5	2	4	3	3.7	3
Hays	30.1	28.9	30.7	29.9	3	3	6	4	4.0	2
Stockford	29.5	28.9	32.2	30.2	1	4	11	5	5.3	2
MF050507	31.3	30.4	30.8	30.8	8	7	7	7	7.3	0
MT981384	30.8	29.5	31.4	30.5	7	6	9	6	7.3	0
MF0506	32.4	31.5	29.3	31.0	12	10	1	8	7.7	1
Haybet	32.1	30.6	30.5	31.1	11	8	5	9	8.0	1
MF050502	30.1	32.6	30.8	31.2	4	12	8	10	8.0	1
MT981397	31.5	32.7	31.5	31.9	9	13	10	12	10.7	0
MF050505	31.6	30.9	32.5	31.7	10	9	13	11	10.7	0
MT981427	32.7	32.3	32.3	32.4	13	11	12	13	12.0	0
Red 1 trit	37.5	36.2	35.1	36.2	14	14	14	14	14.0	0
Mean	31.39	30.66	31.2	31.08						
P-value	0.0019	0.0016	0.2343	0						
CV 1	3.87	4.383	5.498	4.965						
LSD (0.05)	2.625	2.904	3.706	1.777						
N per mean	2	2	2	6						

Table 10 2006 Spring cereal forage **NDF %** and NDF rank, **low to high**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	Ave NDF	Ave Rank	Freq. in Top 5
	NPKS w/sd	no PKS	CC		NPKS w/sd	no PKS	CC			
	NDF	NDF	NDF	NDF	Rank	Rank	Rank	Rank	Rank	#
	%	%	%	%	#	#	#	#	#	#
Bestford	49.7	47.7	50.8	49.4	1	2	3	2	2.0	2
Stockford	50.2	49.8	52.2	50.7	2	3	6	4	3.7	2
Westford	52.1	46.5	52.3	50.3	7	1	7	3	5.0	1
MF050502	50.5	53.2	30.3	44.7	3	11	1	1	5.0	2
MF050501	51.8	50.3	52.7	51.6	5	4	9	6	6.0	2
MF0506	53.0	52.4	48.9	51.4	8	8	2	5	6.0	1
Hays	55.3	51.4	51.4	52.7	12	5	5	9	7.3	2
MF050505	51.4	52.1	53.4	52.3	4	7	13	7	8.0	1
Haybet	53.3	53.2	52.6	53.0	9	10	8	11	9.0	0
MF050507	53.7	53.0	52.7	53.1	10	9	10	12	9.7	0
MT981384	54.0	51.7	53.1	52.9	11	6	12	10	9.7	0
MT981427	51.8	53.4	52.7	52.6	6	12	11	8	9.7	0
Red 1 trit	59.6	58.3	51.2	56.3	14	14	4	14	10.7	0
MT981397	56.7	54.5	53.8	55.0	13	13	14	13	13.3	0
Mean	53.06	51.94	50.56	51.85						
P-value	0.0006	0.0046	0.6575	0.1626						
CV 1	2.708	3.652	18.63	10.77						
LSD (0.05)	3.104	4.098	20.35	6.432						
counts per mean	2	2	2	6						

Table 11 2006 Spring cereal forage **TDN %** and TDN rank, **High to low**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	Ave TDN	Ave Rank	Freq. in Top 5
	NPKS w/sd	no PKS	CC		NPKS w/sd	no PKS	CC			
	TDN	TDN	TDN	TDN	Rank	Rank	Rank	Rank	Rank	#
	%	%	%	%	#	#	#	#	#	#
Westford	60.2	61.4	59.7	60.43	4	1	3	1	2.7	3
MF050501	60.3	60.55	60.3	60.38	3	5	2	2	3.3	3
Bestford	60.1	61.25	59.7	60.35	5	2	4	3	3.7	3
Hays	59.8	61.25	59.6	60.22	7	3	5	4	5.0	2
Stockford	60.4	60.75	58.9	60.02	2	4	11	6	5.7	2
MT981384	60.65	60.5	59.2	60.12	1	6	10	5	5.7	1
MF050507	59.35	59.8	59.55	59.57	8	8	6	7	7.3	0
MF0506	58.4	59.05	60.7	59.38	13	10	1	9	8.0	1
MF050502	60	58.25	59.4	59.22	6	13	7	11	8.7	0
Haybet	58.7	59.95	59.25	59.3	12	7	8	10	9.0	0
MF050505	59.3	59.75	59.25	59.43	9	9	9	8	9.0	0
MT981397	59.25	58.4	58.8	58.82	10	12	12	12	11.3	0
MT981427	58.95	58.55	58.5	58.67	11	11	13	13	11.7	0
Red 1 trit	55.5	56.05	57.3	56.28	14	14	14	14	14.0	0
Mean	59.35	59.68	59.3	59.44						
P-value	0.0147	0.0039	0.679	0						
CV 1	1.65	1.624	2.191	1.901						
LSD (0.05)	2.116	2.093	2.806	1.301						
counts per mean	2	2	2	6						

Table 12 2006 Spring cereal forage **crude protein (%)** and protein rank, **High to low**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	Ave C.P.	Ave	Freq.
	NPKS w/sd	no PKS	CC		NPKS w/sd	no PKS	CC			
	C.Protein	C.Protein	C.Protein	C.Protein	Rank	Rank	Rank	Rank	Rank	in Top 5
	%	%	%	%	#	#	#	#	#	#
Red 1 trit	10.0	11.5	13.2	11.5	4	1	3	1	2.7	3
Stockford	10.1	9.4	12.6	10.7	2	8	6	5	5.3	1
MF0506	9.1	9.5	14.5	11.0	9	7	1	3	5.7	1
MF050507	9.3	10.2	12.3	10.6	6	5	7	6	6.0	1
Hays	9.8	10.8	12.2	10.9	5	4	10	4	6.3	2
Bestford	13.0	9.3	11.7	11.3	1	9	11	2	7.0	1
MT981397	9.2	11.3	10.8	10.4	7	2	13	9	7.3	1
MF050501	10.0	8.6	12.9	10.5	3	14	5	8	7.3	1
Westford	8.6	9.2	14.0	10.6	12	11	2	7	8.3	1
Haybet	9.0	11.0	10.7	10.2	10	3	14	10	9.0	1
MF050502	8.8	8.8	13.0	10.2	11	13	4	11	9.3	1
MT981384	7.6	9.6	12.3	9.8	14	6	8	13	9.3	0
MF050505	9.1	8.8	12.3	10.1	8	12	9	12	9.7	0
MT981427	8.0	9.3	11.5	9.6	13	10	12	14	11.7	0
Mean	9.368	9.793	12.41	10.52						
P-value	0.1752	0.1609	0.129	0.9615						
CV 1	14.67	10.55	8.843	19.42						
LSD (0.05)	2.969	2.233	2.37	2.353						
counts per mean	2	2	2	6						

Table 13 2006 Spring cereal forage **RFV (%)** and rank, **High to low**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	Ave RFV	Ave	Freq.
	NPKS w/sd	no PKS	CC		NPKS w/sd	no PKS	CC			
	RFV	RFV	RFV	RFV	Rank	Rank	Rank	Rank	Rank	in Top 5
	%	%	%	%	#	#	#	#	#	#
Bestford	110	118	108	111.7	1	2	3	2	2.0	3
Stockford	110	112	103	108.2	2	3	7	4	4.0	2
Westford	106	121	104	110.3	5	1	6	3	4.0	2
MF050501	106	110	105	106.7	4	4	5	5	4.3	3
MF050502	108	100	479	228.9	3	11	1	1	5.0	2
Hays	98	109	106	104.3	12	5	4	7	7.0	2
MF0506	100	103	114	105.3	11	10	2	6	7.7	1
MT981384	103	107	102	103.5	8	6	10	8	8.0	0
MF050505	105	105	101	103.5	6	7	13	9	8.7	0
MF050507	101	103	103	102.1	9	9	8	10	8.7	0
Haybet	100	103	103	101.8	10	8	9	11	9.0	0
MT981427	103	100	101	101.2	7	12	12	12	10.3	0
Red 1 trit	84	87	102	90.72	14	14	11	14	13.0	0
MT981397	95	97	99	97.18	13	13	14	13	13.3	0
Mean	102	105.1	130.5	112.5						
P-value	0.0035	0.004	0.5261	0.4562						
CV 1	4.289	5.304	110.5	73.56						
LSD (0.05)	9.454	12.04	311.5	95.31						
counts per mean	2	2	2	6						

Table 14 2006 Spring cereal forage **NO3 (%)** and rank, **low to high**, at three CARC locations.
Central Agricultural Research Center. Moccasin, Montana

Line/variety	SW9	SW9	SE 3	3 loc	SW9	SW9	SE 3	Ave NO3 %	Ave Rank	Freq. in Top 5
	NPKS w/sd NO3	no PKS NO3	CC NO3		NPKS w/sd Rank	no PKS Rank	CC Rank			
	%	%	%	%	#	#	#	#	#	#
Haybet	0.0250	0.0350	0.0700	0.0433	2	1	1	1	1.3	3
MT981427	0.0200	0.0400	0.1050	0.0550	1	3	3	2	2.3	3
MT981384	0.0250	0.0350	0.1750	0.0783	4	2	6	4	4.0	2
MF0506	0.0600	0.0450	0.1450	0.0833	9	4	5	6	6.0	2
Hays	0.0300	0.0700	0.1300	0.0767	5	12	4	3	7.0	2
Westford	0.0250	0.0550	0.3550	0.1450	3	8	13	11	8.0	1
MT981397	0.0650	0.0850	0.1000	0.0833	10	13	2	5	8.3	1
Stockford	0.0750	0.0450	0.2700	0.1300	11	5	9	9	8.3	1
MF050502	0.0400	0.0650	0.2700	0.1250	6	9	10	8	8.3	0
MF050501	0.1100	0.0450	0.2100	0.1217	13	6	7	7	8.7	0
MF050507	0.0450	0.0650	0.3150	0.1417	7	10	12	10	9.7	0
Bestford	0.4650	0.0450	0.2400	0.2500	14	7	8	14	9.7	0
Red 1 trit	0.0600	0.1450	0.2700	0.1583	8	14	11	12	11.0	0
MF050505	0.0850	0.0650	0.3900	0.1800	12	11	14	13	12.3	0
Mean	0.0807	0.0600	0.2175	0.1194						
P-value	0.3382	0.2384	0.7669	0.6176						
CV 1	177.1	55.0800	79.4300	123						
LSD (0.05)	0.3088	0.0714	0.3732	0.1692						
counts per mean	2	2	2	6						

Table 14.01 2007 Spring cereal forage quality (one rep).
Centrl Agricultural Research Center. Moccasin, Montana

Line/variety	ADF	NDF	Crude Fiber	Protein
	%	%	%	%
Stockford	29.9	47.4	26.7	8.3
Westford	33.3	55.1	29.9	7.3
Hays	29.9	47.3	27.6	7.1
Red 1 trit	40.0	58.5	34.3	7.1
MF0506	32.5	47.7	26.4	6.9
Bestford	35.6	55.3	31.4	6.9
MT981384	33.8	52.6	26.8	6.7
MF050507	29.7	43.4	25.0	6.6
MT981397	31.1	48.3	26.8	6.3
Goose Wheat	30.8	47.9	26.8	6.3
MF050501	33.3	51.7	28.1	6.2
Haybet	32.2	50.2	28.5	6.2
MF050505	30.8	46.6	27.7	6.1
MT981427	34.2	50.5	28.6	5.5
average	32.7	50.2	32.7	6.7

Grain Yield Section

Table 15 2004 Montana spring barley introduction trial on Bozeman dryland
MSU Barley Breeding Program. Bozeman, Montana

ID code	Pedigree/variety	Agron Score	Head Date	Plant Height	Grain Yield	Test Weight	Kernel Size	
							Plump	Thin
		#	d of y	inches	bu/a	lbs/bu	%	%
99373/19	AC 99373/19	7	182	26	139.7	49.3	82.5	1.7
CR/SR 16	Colter/BSR45//Stephoe/BSR	6	179	41	137.3	48.2	51.8	9.6
PI610264	Valier	6	180	35	137.0	51.8	78.9	3.6
NORD2125	NORD 2125	7	182	30	132.0	47.9	62.3	5.2
PI568246	Baronesse	7	181	32	131.9	51.3	80.4	3.1
ND13299	Conlon	7	179	32	130.5	51.4	83.7	2.2
MT981397	Haybet/Baronesse	5	180	34	129.9	51.2	58.1	7.7
CDCBOLD	CDC Bold	7	181	30	129.9	49.9	71.0	8.1
AJO 12	BCD47xD3-6/B61(Ops)	6	181	34	129.4	50.4	70.3	4.4
PI605474	Bancroft	6	181	36	128.7	52.2	90.0	1.4
MT010105	MT890008/Merlin	7	181	33	127.3	56.1	28.9	12.0
AC03 7	Bolina	6	183	26	126.5	48.5	61.8	8.3
NORD2124	NORD 2124	6	183	29	126.0	47.9	75.6	3.8
SD 422	SD 422	6	180	32	125.2	50.2	65.4	8.1
MT950186	Haxby	7	179	35	124.9	52.6	90.6	1.3
MT981062	Haybet/Baronesse	6	180	33	122.1	49.1	56.4	8.0
SK 76333	Harrington	7	181	33	122.1	51.4	85.5	2.2
OPS 6	BCD12xD3-6/B61(Ops)	6	181	35	119.9	52.4	62.4	4.7
NORD2115	NORD 2115	6	183	29	119.5	47.8	45.1	13.3
MT981063	Haybet/Baronesse	6	182	34	118.7	47.3	75.9	2.8
MT981060	Hays	6	182	33	118.3	45.7	46.5	10.1
PI491534	Gallatin	6	178	33	116.5	53.6	88.5	1.3
PI498440	Weka	7	182	31	116.2	51.3	51.2	7.1
MT020016	MT950220/MT960226	6	182	37	115.2	57.0	54.7	8.2
MT981384	Haybet/Baronesse	5	182	33	113.5	50.1	63.1	7.3
TR133	Kendall	6	181	35	113.5	50.7	85.2	2.5
STAB 113	Strider/88Ab536	5	180	37	112.1	47.5	20.7	20.7
AC03 10	Recept	6	185	30	111.3	45.5	51.9	6.5
MT020015	MT950220/MT960226	6	184	29	110.5	51.4	28.8	24.5
PI605472	Garnet	6	182	33	110.1	51.0	86.3	1.9
MT020007	MT950220/MT960013	6	180	33	109.0	55.8	69.0	2.9
OPS 18	BCD12xD3-6/B61(Ops)	7	178	35	105.1	53.3	94.7	0.4
BZ489-29	Merlin	6	182	25	104.4	47.9	16.7	30.4
STAB 34	Strider/88Ab536	6	179	34	101.4	43.4	4.4	40.4
MT981064	Haybet/MT889106	5	180	37	92.3	48.1	77.1	3.1
MT981427	Haybet/NE760	5	182	37	91.7	49.0	57.8	7.2
PI614009	Washford	6	181	38	89.1	35.4	59.6	10.8
PI533600	Haybet	5	180	37	81.9	46.6	20.4	12.1
BFC79-18	Westford	5	183	43	80.7	42.2	80.0	2.6
CMB93621	Sara	6	177	42	38.1	41.0	46.9	12.3
Means		6.1	181.03	33.6	114.74			
F TEST			39.12	29.61	18.03			
C.V. 1:			0.27	3.75	6.84			
LSD (0.			0.79	2.05	12.76			

Table 16 2005 Montana spring barley introduction trial on Bozeman dryland
MSU Barley Breeding Program. Bozeman, Montana

VARIETY		Head Date	Plant Height	LodgingY b	Grain Yield	Test Weight	Kernel size		Grain Protein
							Plump	Thin	
		d of y	"	b	bu/a	lb/bu	%	%	%
MT950186	Haxby	184	33	1.33	97.5	51.9	36.2	12.1	16.1
PI605474	Bancroft	185	34	2.00	93.7	49.7	48.1	11.0	16.0
OPS 18	BCD12xD3-6/B61(Ops)	183	33	1.33	92.7	52.4	63.7	2.8	17.0
MT981063	Haybet/Baronesse	188	31	2.00	92.5	46.5	41.4	12.2	16.1
MT981062	Haybet/Baronesse	186	31	1.00	90.5	48.2	19.8	27.7	16.1
PI491534	Gallatin	183	34	1.33	89.7	50.4	27.0	19.9	16.8
PI568246	Baronesse	188	31	0.33	89.1	48.7	35.5	17.7	16.5
MT981397	Haybet/Baronesse	186	32	1.33	88.2	47.8	12.9	35.1	17.2
NORD2173	Nord 2173	189	31	0.33	88.0	46.5	56.4	6.9	15.6
CR/SR 16	Colter/BSR45//Steptoe/BSR	185	32	1.33	87.7	45.5	16.8	9.9	14.5
MT981060	Hays	189	30	0.33	86.1	46.3	21.9	28.8	16.8
MT981064	Haybet/MT889106	186	33	2.67	85.0	47.7	29.7	16.8	16.1
ND13299	Conlon	180	31	2.00	84.8	50.4	80.1	2.6	16.1
MT981384	Haybet/Baronesse	187	33	1.33	83.7	47.3	22.9	28.9	17.5
OPS 6	BCD12xD3-6/B61(Ops)	186	33	1.00	82.8	48.2	20.4	37.7	18.1
CDC BOLD	CDC Bold	185	31	0.00	82.1	49.1	23.1	25.4	16.5
MT981427	Haybet/NE760	187	32	2.33	81.3	46.3	16.9	31.7	18.2
SD 422	SD 422	185	30	0.00	81.1	49.3	28.9	25.6	16.0
PI533600	Haybet	186	32	3.67	78.1	45.3	3.2	48.2	17.9
TR133	Kendal	186	31	0.67	78.0	46.5	53.6	12.1	18.3
EB03 25	Rangoon	189	29	0.00	77.9	45.4	42.1	13.5	15.8
NORD2025	Nord 2025	189	29	0.67	77.4	45.8	33.2	15.3	17.4
NORD2174	Nord 2174	187	27	1.33	76.5	45.7	17.3	22.4	16.2
AJO 12	BCD47xD3-6/B61(Ops)	187	33	1.33	75.6	47.8	23.7	25.1	17.2
99373/19	AC 99373/19	188	27	0.00	74.9	45.3	28.2	16.8	16.5
EB03 26	Scarlett	190	28	0.67	74.9	47.8	36.6	14.4	16.7
SK 76333	Harrington	186	32	1.33	74.8	46.4	26.0	25.1	16.7
NORD2175	Nord 2175	187	29	0.67	74.4	46.5	21.3	23.3	16.7
A9931471	ACK 99/314/71	189	27	1.00	73.0	46.3	24.3	15.6	16.6
EB03 23	Power	188	27	0.67	71.9	43.5	9.6	44.5	15.5
EB03 27	Sebastian	189	27	1.33	71.3	45.8	14.7	32.4	16.1
NORD2172	Nord 2172	189	29	0.67	69.7	45.9	15.2	35.0	16.5
CI 15773	Morex	182	37	3.00	69.5	44.8	7.1	8.4	16.4
EB03 22	Pewter	190	27	0.33	66.2	45.3	16.8	29.3	16.7
ND16301	Stellar	182	34	2.00	63.6	44.5	14.9	9.7	15.6
PI476976	Robust	183	38	3.67	63.3	44.6	16.0	11.3	15.7
EXPERIMENTAL MEANS		186.41	31.14	1.25	108	47.1	27.91	20.96	16.5
F TEST FOR VAR.		55.72	15.81	3.96	5.77		13.85	9.47	
C.V. 1		0.3	3.94	66.67	4.15		22.45	24.71	
LSD (0.05)		0.92	2	1.36	9.4		12.72	10.51	

Table 17 **2007** Spring cereal forage variety trial under no-till continuous crop.
 Exp2370 Central Agricultural Research Center. Moccasin, Montana

Line	Head	Plant	Dry Matter		Test	Grain	D.M. Yield Rank	Grain Yld Rank
	Date	Height	Content	Yield	Weight	Yield		
	d of y	cm	%	t/a	lbs/bu	lbs/a		
MF050505	180	68	0.369	2.670	50.0	3191	4	1
MF0506	181	75	0.326	2.402	51.1	2863	7	2
MF050507	179	64	0.349	2.132	51.2	2820	10	3
MT981384	181	70	0.382	2.739	50.5	2770	3	4
MT981397	180	72	0.36	2.454	50.8	2700	6	5
Goose Wheat	181	68	0.358	2.265	50.9	2574	9	6
MF050501	183	68	0.391	2.777	48.2	2557	1	7
Bestford	183	86	0.286	2.062	43.6	2478	11	8
Hays	183	66	0.372	2.388	48.5	2473	8	9
Stockford	180	79	0.351	2.747	48.3	2414	2	10
MT981427	180	83	0.339	2.465	51.4	2182	5	11
Westford	184	72	0.316	1.870	44.1	2076	14	12
Haybet	180	70	0.362	2.044	49.8	1854	12	13
Red 1 trit	179	101	0.342	2.016	44.7	1725	13	14
mean	181	74.43	0.3502	2.359	48.79	2477		
P value	0.0			0.0158	0.0	0.0		
CV 1	0.402			13.71	0	10.87		
LSD 0.05	1.221			0.543	0	451.9		
Seed date:	23-Apr-07		Field book FBScf07.dbf					
Fertilizer:	10-10-10-5 NPKS w/seed		45 N topdress on 7-May-07					
Harvest Date:	2 July and 6 July 2007							