

2005 VARIETAL RECOMMENDATION

BOULDER

WestBred, LLC requests that you consider the variety 'Boulder' spring barley for "Variety Recommendation in the State of Montana".

A motion that Boulder be recommended as a 2-rowed, spring feed barley for all irrigated and dryland districts of Montana.

Pedigree = "Boulder" is a two-rowed, spring feed barley developed by WestBred, LLC from crossing Baronesse onto a composite cross for diverse cytoplasm's. The composite cross was developed by Dr. R.T. Ramage, who was with the USDA/ARS at Tucson, Arizona. This initial composite cross was developed by crossing 400 diverse accessions from the World Collection of Barley's, as the female parents, with F1 plants that were heterozygous for the male sterile genes, msg1 and/or msg2.

For the period 2001-2004 (not tested in 2003), Boulder was the highest yielding variety over the 32 locations in MSU's Intrastate Trials, with an average yield of 98.3 bushels. The next highest yielding variety was Haxby at 96.7 bu/ac. Boulder has a high test weight, with an average test weight of 51.5 lbs/bu, second only to Haxby at 52.1 lbs/bu. The percent of plump kernels of Boulder was 83.9, second only to Conlon at 85.2 %. The average plant height of Boulder is 29.5 inches, which makes it similar to the other check varieties. The average heading date of Boulder is June 28th, which is one day later than Haxby and one day earlier than Baronesse.

Table 1. Summary of Boulder compared to check varieties in MSU's 2001, 2002 and 2004 Intrastate Barley Variety Trials.

Variety	YIELD	TESTWT	PLUMP %	HEADDATE	PLANTHT	PROTEIN
Boulder	98.3	51.5	83.9	179.4	29.5	13.9
Haxby	96.7	52.1	80.9	178.4	30.2	13.6
Eslick	95.8	50.0	77.7	179.6	29.3	13.4
Baronesse	95.2	49.7	77.6	180.5	28.1	13.8
Valier	92.9	50.4	74.9	180.4	29.6	14.4
Gallatin	90.2	50.3	74.3	177.4	30.8	13.7
Harrington	86.2	48.6	78.3	179.9	29.6	13.9
Conlon	87.4	50.4	85.2	175.5	29.3	14.0

Thirty-Two locations: 17 dryland and 15 irrigated.

Table 2. Yield in bu/ac of Boulder compared to check varieties in MSU's 2001, 2002 and 2004 Irrigated Intrastate Barley Variety Trials.

	Kalispell High Moisture				Bozeman				Sidney			
	District 1				District 2				District 6			
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.
Boulder	161.9	151.4	133.8	149.1	146.6	123.0	157.1	142.3	64.1	81.2	124.9	90.1
Haxby	181.1	151.3	125.6	152.7	131.4	98.4	144.8	124.8	73.2	87.4	150.5	103.7
Eslick	147.6	139.2	139.5	142.1	131.6	100.5	148.2	126.8	60.7	82.9	139.6	94.4
Baronesse	173.5	144.1	132.2	149.9	127.3	98.2	136.1	120.5	64.2	77.8	135.4	92.5
Valier	173.6	146.4	124.2	148.1	139.6	98.9	145.1	127.8	63.3	80.0	138.6	94.0
Gallatin	181.4	139.9	127.2	149.5	134.6	95.0	134.8	121.5	64.3	85.6	143.3	97.7
Calgary	187.3	147.2	138.6	157.7	154.6	113.9	151.1	139.9	61.2	82.1	134.6	92.6
Harrington	178.5	129.6	132.5	146.9	138.4	90.7	125.6	118.2	61.9	71.0	126.2	86.4
Conlon	173.3	142.6	120.6	145.5	145.4	104.2	127.4	125.6	58.6	77.1	125.9	87.2
	Huntley				Conrad				Irrigated			
	District 3				District 5							
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	Ave.			
Boulder	157.6	166.1	162.3	162.0	81.2	123.0	101.9	102.0	129.1			
Haxby	163.3	164.6	138.0	155.3	76.9	123.9	105.9	102.2	127.8			
Eslick	172.6	163.7	157.4	164.6	83.0	118.4	102.6	101.3	125.8			
Baronesse	158.4	141.6	153.7	151.3	85.9	119.9	123.5	109.7	124.8			
Valier	166.7	151.8	139.9	152.8	74.7	106.0	101.3	94.0	123.3			
Gallatin	144.7	131.9	128.1	134.9	70.0	117.1	95.9	94.4	119.6			
Calgary	164.3	158.5	145.2	156.0	73.8	125.9	124.3	108.0	130.8			
Harrington	131.5	135.9	129.0	132.1	67.7	106.9	90.5	88.4	114.4			
Conlon	160.3	116.0	80.5	119.0	74.9	104.4	95.1	91.5	113.8			

Table 3. Yield in bu/ac of Boulder compared to check varieties in MSU's 2001, 2002 and 2004 Dryland Intrastate Barley Variety Trials.

	Havre			Sidney				Moccasin				Huntley			
	District 5			District 6				District 4				District 3			
Variety	2001	2002	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.
Boulder	32.9	61.0	46.9	85.7	52.1	89.3	75.7	81.5	52.9	79.4	71.3	46.8	21.7	51.0	39.8
Haxby	28.9	54.6	41.8	78.2	51.2	110.5	80.0	77.4	56.6	77.7	70.6	47.2	26.6	53.3	42.4
Eslick	28.1	58.6	43.4	93.6	54.4	99.0	82.3	73.4	53.6	74.9	67.3	45.3	15.4	51.1	37.3
Baronesse	32.2	56.6	44.4	95.5	51.2	103.1	83.2	71.7	51.8	72.4	65.3	48.2	23.1	48.0	39.8
Valier	30.2	53.6	41.9	98.1	45.4	102.7	82.0	69.7	42.7	71.3	61.2	49.0	13.6	41.5	34.7
Gallatin	31.6	54.4	43.0	83.4	52.4	96.1	77.3	71.1	48.1	70.9	63.4	44.3	18.5	39.8	34.2
Harrington	31.2	53.6	42.4	83.5	49.5	102.5	78.5	62.8	43.3	63.3	56.5	39.3	11.6	37.2	29.3
Conlon	30.1	55.1	42.6	85.2	51.0	95.5	77.3	70.1	46.9	71.8	62.9	45.5	37.4	43.2	42.0
	Conrad				Bozeman				Dryland						
	District 5				District 2										
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	Ave.						
Boulder	23.5	81.8	96.6	67.3	126.7	89.8	136.1	117.5	71.1						
Haxby	22.4	76.2	91.0	63.2	113.1	76.9	135.6	108.5	69.3						
Eslick	21.4	91.3	87.2	66.6	120.6	75.9	133.3	109.9	69.2						
Baronesse	27.9	82.6	90.5	67.0	117.6	68.3	134.0	106.6	69.1						
Valier	22.5	78.9	93.3	64.9	119.4	63.4	127.8	103.5	66.1						
Gallatin	23.9	78.7	94.8	65.8	100.4	57.7	125.2	94.4	64.2						
Harrington	20.4	81.7	80.0	60.7	104.5	52.6	124.8	94.0	61.3						
Conlon	20.2	60.7	73.5	51.5	111.6	68.7	125.3	101.8	64.2						

Table 4. Test Weigh in lbs/bu of Boulder compared to check varieties in MSU's 2001, 2002 and 2004 Irrigated Intrastate Barley Variety Trials.

	Kalispell High Moisture				Bozeman				Sidney			
	District 1				District 2				District 6			
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.
Boulder	54.3	52.3	53.1	53.2	54.9	55.0	55.3	55.1	42.4	49.0	52.1	47.9
Haxby	53.1	51.3	52.8	52.4	55.0	55.1	55.8	55.3	42.1	49.0	52.9	48.0
Eslick	52.6	50.8	52.4	51.9	52.1	52.6	53.4	52.7	37.7	46.0	51.5	45.1
Baronesse	51.9	50.2	52.1	51.4	51.9	53.1	52.1	52.4	38.5	48.1	49.6	45.4
Valier	53.3	50.2	51.4	51.6	52.6	53.1	53.2	52.9	37.0	48.1	51.3	45.5
Gallatin	53.9	50.2	52.4	52.2	53.0	54.5	54.8	54.1	38.8	46.7	52.2	45.9
Calgary	52.7	47.7	50.6	50.3	54.8	53.4	53.8	54.0	36.9	45.5	50.9	44.4
Harrington	52.4	45.2	49.8	49.1	50.7	53.4	51.9	52.0	35.1	45.0	49.2	43.1
Conlon	51.7	52.6	52.2	52.2	53.4	54.2	55.5	54.3	36.9	45.5	51.4	44.6
	Huntley				Conrad				Irrigated			
	District 3				District 5							
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	Ave.			
Boulder	50.0	52.5	53.7	52.1	53.1	53.1	55.1	53.8	52.4			
Haxby	51.2	53.7	54.8	53.2	52.9	54.3	55.7	54.3	52.6			
Eslick	48.1	51.5	53.1	50.9	52.1	52.6	53.4	52.7	50.7			
Baronesse	49.6	50.0	52.7	50.7	51.3	51.8	52.9	52.0	50.4			
Valier	50.5	53.0	53.9	52.5	50.4	52.3	54.3	52.3	51.0			
Gallatin	50.4	50.4	52.9	51.2	50.5	52.1	55.5	52.7	51.2			
Calgary	50.8	52.5	53.1	52.1	51.1	52.8	55.1	53.0	50.8			
Harrington	47.6	49.1	52.4	49.7	49.2	51.2	53.0	51.1	49.0			
Conlon	50.3	50.7	52.6	51.2	50.4	51.4	53.9	51.9	50.8			

Table 5. Test Weigh in lbs/bu of Boulder compared to check varieties in MSU's 2001, 2002 and 2004 Dryland Intrastate Barley Variety Trials.

	Havre			Sidney				Moccasin				Huntley			
	District 5			District 6				District 4				District 3			
Variety	2001	2002	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.	2001	2002	2004	Ave.
Boulder	47.7	49.2	48.4	49.4	49.9	51.9	50.4	49.5	50.4	52.2	50.7	50.7	37.8	54.4	47.7
Haxby	49.4	50.4	49.9	50.0	49.7	53.2	51.0	50.9	52.0	51.8	51.6	52.0	43.0	54.0	49.7
Eslick	47.7	49.6	48.7	47.1	46.4	50.6	48.0	47.2	50.9	47.7	48.6	51.4	38.6	54.4	48.1
Baronesse	48.1	48.9	48.5	48.5	48.4	50.0	48.9	45.9	49.9	47.0	47.6	50.8	37.8	53.8	47.5
Valier	48.5	49.8	49.1	49.8	48.0	50.7	49.5	48.8	50.2	47.5	48.8	50.7	40.7	53.1	48.2
Gallatin	48.1	48.5	48.3	47.9	47.0	51.6	48.8	48.4	49.4	49.1	49.0	51.6	38.6	52.1	47.4
Harrington	46.2	48.4	47.3	47.1	45.6	50.0	47.6	44.8	49.8	45.9	46.8	51.5	37.4	51.8	46.9
Conlon	48.1	48.5	48.3	47.6	46.6	52.0	48.7	45.2	52.4	53.3	50.3	50.6	43.6	53.4	49.2
	Conrad				Bozeman				Dryland						
	District 5				District 2				ave.						
Variety	2001	2002	2004	Ave.	2001	2002	2004	Ave.	ave.						
Boulder	53.5	52.1	54.7	53.4	53.2	49.8	56.6	53.2	50.8						
Haxby	53.6	52.8	55.2	53.9	53.2	51.8	55.2	53.4	51.7						
Eslick	52.8	51.9	52.8	52.5	50.8	48.4	52.9	50.7	49.5						
Baronesse	51.3	49.6	51.8	50.9	50.8	48.4	53.9	51.0	49.1						
Valier	51.3	53.1	49.7	51.4	52.2	50.0	53.6	51.9	49.9						
Gallatin	49.4	49.2	52.7	50.4	51.4	49.6	56.0	52.3	49.4						
Harrington	49.8	52.6	52.0	51.5	49.1	47.0	52.7	49.6	48.3						
Conlon	50.9	50.4	49.7	50.3	51.4	51.1	55.2	52.5	50.0						