



Barley

Kevin Smith and Ed Schiefelbein



Barley varieties are compared in replicated trials in Crookston, Morris, St. Paul, Stephen and Roseau. Data collected from these trials should be used to make comparisons only among those varieties included in the trials. Descriptions of barley varieties are listed by year of release.

Variety Selection Criteria

Most barley producers in the region grow barley for malt and select varieties approved by the American Malting Barley Association (AMBA). The most important industry specifications for making malting grade are grain protein, kernel plumpness and deoxynivalenol (DON), the toxin produced by the Fusarium Head Blight (FHB) pathogen. Please consult the AMBA recommended list at www.ambainc.org varieties for the most current information about industry acceptance of malting barley varieties.

For most producers the disease FHB and the presence of DON in harvested grain are the two most important factors limiting production of malting barley in the region. The two-rowed variety Conlon and the six-rowed variety Quest typically have lower DON compared to the other varieties grown in the region.

General-Purpose Varieties

Quest – High yield and medium maturity. Moderate lodging resistance. Six-rowed, semi-smooth awns, long rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch and improved resistance to FHB and lower DON. Released by Minn. AES in 2010. **PVP in review.**

Celebration – High yield and slightly later maturity. Medium lodging resistance. Slightly lower in plump kernels and higher in protein compared to Tradition. Six-rowed, semi-smooth awns, short rachilla hairs, and colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch and slightly better resistance to net blotch and Fusarium head blight compared to Robust. Developed by Busch-Agricultural Resources Inc. (BARI). Released 2008. **PVP (94)**

Relative grain yield (percent of the mean of the trial) of barley varieties at several locations in Minnesota in single-year (2011) and multiple-year comparisons (2009-2011).

Variety	Crookston		Morris		Stephen	St. Paul		Roseau	State Mean	
	2011	3-Year	2011	3-Year	2-Year ¹	2011	2-Year ²	2011 ³	2011	3-Year
Robust	93	90	100	96	86	101	106	95	97	94
Lacey	98	101	120	111	94	107	112	118	111	106
Rasmusson	119	111	122	114	102	97	109	113	113	110
Quest	102	98	112	110	99	111	107	103	107	99
Stellar ND	98	101	102	95	102	95	95	100	99	101
Celebration	95	99	114	107	104	102	100	94	101	102
Tradition	99	96	83	99	100	101	107	114	99	91
Conlon ⁴	97	107	66	—	103	85	65	85	83	100
Pinnacle	100	103	98	92	114	105	102	91	98	92
Rawson	93	94	81	87	95	93	95	92	90	104
LSD 0.05	17	9	29	17	14	18	12	18	10	6
Mean, Bu/Acre	103	107	59	70	102	109	108	96	91	95

¹ Only two years of data, 2009 and 2010.

² Only two years of data, 2010 and 2011.

³ Only one year of data; 2011.

⁴ Only two years of data available at Morris.

Rasmusson – High yield and medium maturity. Good lodging resistance, slightly shorter plant height. Six-rowed, semi-smooth awns, short rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch. Released by Minn. AES in 2008. **PVP (94)**

Pinnacle – High yield and slightly later maturity. Good lodging resistance, very plump kernels, and lower protein. Two-rowed, semi-smooth awns, long rachilla hairs, and colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch. Released by N.D. AES in 2006. **PVP (94)**

Stellar-ND – Medium yield and medium maturity. Good lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, long rachilla hairs, and colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch and slightly better net blotch resistance compared to Robust. Released by N.D. AES in 2005. **PVP (94)**

Tradition – High yield and medium maturity. Medium lodging resistance. Six-rowed, semi-smooth awns, long rachilla hairs, and colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch and slightly better net blotch resistance compared to Robust. Developed by Busch-Agricultural Resources Inc. (BARI). Released 2003. **PVP (94)**

Lacey – High yield and medium maturity. Good lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, short rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch. Developed from crosses involving Robust, Excel and Stander. Released by Minn. AES in 2000. **PVP (94)**

Conlon – Medium yield and early maturity variety. Moderate lodging resistance and very plump kernels. Two-rowed, semi-smooth awns, long rachilla hairs, and colorless aleurone. Classified as a malting variety by AMBA. Moderately resistant to net blotch, but moderately susceptible to spot blotch compared to Robust. Released by N.D. AES in 1996. **PVP (94)**

Robust – Low yield and medium maturity. Medium lodging resistance and good kernel plumpness. Six-rowed, semi-smooth awn, short rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch. Developed from crosses involving Morex and Manker. Released by Minn. AES 1983.

Special-Purpose Varieties

Rawson – Feed barley. High yield and medium maturity. Good lodging resistance, very plump kernels, and lower protein. Two-rowed, rough awns, long rachilla hairs, and colorless aleurone. Resistant to spot blotch. Released by N.D. AES in 2005. **PVP (94)**

Royal – Intended for use as a forage companion crop and feed grain variety. Not a malting variety. Six-rowed, semi-smooth awn, blue aleurone, semidwarf stature. Superior in

forage quality (RFV) compared to taller varieties based on digestibility and intake potential; low in fiber and lignin. Similar to Robust in forage protein and forage yield at the soft dough stage. Compared to taller barley and oat varieties, it competes less with underseeded forage legumes because of its short stature and superior lodging resistance. Resistant to spot blotch. Developed from crosses involving Robust, Azure and semidwarf Minn. M32. Released by Minn. AES 1994. **PVP (94)**

Barley Planting Rate and Date

Bushel Weight, Pounds.....	48
Seeds/Pound.....	14,300
Planting Rate, Pounds/Acre.....	85
Planting Rate, Seeds/Sq. Ft.....	28
Planting Date.....	Early Spring

Agronomic characteristics of barley varieties, 2005-2011.

Variety	Type	Use	Heading (DAP)	Height (inches)	Lodging	Plump (%)	Protein (%)
Robust	6-row	Malt	57	33	Medium	88	13.8
Lacey	6-row	Malt	57	31	Strong	90	13.7
Rasmusson	6-row	Malt	57	30	Strong	87	13.0
Quest	6-row	Malt	57	32	Medium	87	13.1
Stellar ND	6-row	Malt	57	31	Strong	89	13.1
Celebration	6-row	Malt	59	33	Medium	81	14.1
Tradition	6-row	Malt	58	32	Strong	89	13.4
Conlon	2-row	Malt	55	30	Medium	94	13.3
Pinnacle	2-row	Malt	60	31	Strong	97	12.2
Rawson	2-row	Feed	58	31	Medium	97	12.8
No. of Environments			23	19	8	14	17

Disease reactions of barley varieties in multiple year comparisons¹.

Variety	Fusarium Head Blight	Net Blotch	Speckled Leaf Blotch	Spot Blotch	Stem Rust ²
Robust	8	8	9	2	1
Lacey	8	8	9	2	1
Rasmusson	9	9	9	2	1
Quest	5	8	9	2	1
Stellar ND	9	7	9	2	1
Celebration	7	5	—	2	—
Tradition	8	7	9	2	1
Conlon	5	5	9	3	1
Pinnacle	9	8	—	2	—
Rawson	9	8	—	2	—

¹ 1-9 scale where 1 = most resistant, 9 = most susceptible.

² Reaction to the dominant strain of the stem rust pathogen.