

Barley

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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 varieties for the most current information about industry acceptance of malting barley varieties at www.ambainc.org.

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 typically has slightly lower DON compared to the other varieties. There are no significant differences among the current six-rowed malting varieties for resistance to FHB.

General-Purpose Varieties

Rasmusson -- High yield and medium maturity. Good lodging resistance, slightly shorter plant height. Six-rowed, semi-smooth awns, short rachilla hairs, colorless aleurone. Currently being evaluated for classification by AMBA as a malting variety. Resistant to spot blotch. Developed from crosses involving Lacey. Released by Minn. AES in 2008. **PVP (pending)**

Stellar-ND -- Medium yielding 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 yielding and medium maturity. Medium lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, long rachilla hairs and colorless aleurone. Classified as a malting variety

Relative grain yield (percent of the mean of the trial) of barley varieties showing single-year (2008) and multiple-year comparisons (2006-2008).

	Crookston		Morris	Stephen		St. Paul		Roseau		State Mean	
	2008	3-year	2-year ¹	2008	3-year	2008	3-year	2008	3-year	2008	3-year
Robust	96	97	93	94	91	90	98	92	99	93	96
Stander	95	100	99	100	94	99	100	97	105	98	100
Lacey	109	103	104	114	109	115	104	108	99	112	103
Rasmusson ²	103	105	110	108	104	111	110	115	—	109	107
Drummond	100	100	95	102	99	103	107	88	96	98	100
Stellar ND	100	101	97	107	102	95	93	98	100	100	99
Legacy	104	101	108	109	109	99	105	95	99	102	104
Tradition	107	100	104	99	104	116	104	107	107	107	103
Conlon	86	91	90	67	88	71	79	101	94	81	88
LSD 0.05	18.4	8.1	11.1	9.9	8.9	19.2	8.6	14.8	8.5	7.9	4.0
Mean, Bu/Acre	123	110	82	118	102	109	101	135	100	121	101

¹ Only two years of data, 2006 and 2007.

² Only 1 year of Roseau data available.

by AMBA. Resistant to spot blotch, slightly better net blotch resistance compared to Robust. Developed by Busch-Agricultural Resources Inc. (BARI). Released 2003. **PVP (94)**

Drummond -- Medium yield and medium maturity. Very good lodging resistance and good kernel plumpness. Six-rowed, semi-smooth awns, long rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Resistant to spot blotch and slightly better net blotch resistance compared to Robust. Developed from crosses involving Azure, Bumper, Hazen and Stander. Released by N.D. AES in 2000. **PVP (94)**

Legacy -- High yielding and medium-late maturity. Medium 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, slightly better net blotch resistance compared to Robust. Developed by Busch-Agricultural Resources Inc. (BARI) from a complex cross involving the parental varieties Bumper, Karl, Manker and Excel. Released 2000. **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 yielding and early maturity. Moderate lodging resistance and very plump kernels. Two-rowed, semi-smooth awns, long rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. 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

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)**

Stander--Medium yield and late maturity. Very good lodging resistance and good kernel plumpness. Six-rowed, semi-smooth awn, short rachilla hairs, colorless aleurone and short stature. Not classified as a malting variety. Resistant to spot blotch. Developed by Minn. AES from crosses involving Excel, Robust and Bumper. Released 1993. **PVP**

Test Plot Research

Test plot establishment and management were supervised by John Wiersma and John Nelson.

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, 2004-2008.

Variety	Type	Use	Heading (DAP)	Height (inches)	Lodging	Plump (%)	Protein (%)
Robust	6-row	Malt	58	34.5	med.	86	13.9
Stander	6-row	Feed	59	31.7	strong	85	13.5
Lacey	6-row	Malt	59	32.4	strong	87	14.1
Rasmusson ²	6-row	Malt	58	30.9	strong	84	13.2
Drummond	6-row	Malt	58	32.3	v. strong	83	13.7
Stellar ND ¹	6-row	Malt	58	32.4	strong	86	13.1
Legacy	6-row	Malt	59	33.5	med.	82	13.4
Tradition	6-row	Malt	59	33.0	med.	86	13.3
Conlon	2-row	Malt	57	31.7	med.	93	13.5
No. of Trials			15	14	15	12	12

¹ Only three years of plump and protein data, 2005-2007.

² Only three years of plump and protein data, 2004-2006.

Disease reactions of barley varieties in multiple year comparisons¹.

Variety	Fusarium Head Blight	Net Blotch	Septoria Speckled Leaf Blotch	Spot Blotch	Stem Rust ²
Robust	8	8	9	2	1
Stander	9	8	9	2	1
Lacey	8	8	9	2	1
Rasmusson	8	9	9	2	1
Drummond	8	7	9	2	1
Stellar ND	8	7	9	2	1
Legacy	7	5	9	2	1
Tradition	8	7	9	2	1
Conlon	7	5	9	3	1

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

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