

## Barley

Kevin Smith and Ed Schiefelbein



Barley varieties are compared in replicated trials at 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](http://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. Among the current six-rowed malting varieties there are no significant differences for resistance to FHB.

### General-Purpose Varieties

**Rasmusson** — High yield, 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. Developed from crosses involving Lacey. Released by Minn. AES in 2008. **PVP (94)**.

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

**Tradition** — High yield, medium maturity. Medium lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, long rachilla hairs, colorless aleurone.

### Relative grain yield (percent of the mean of the trial) of barley varieties showing single-year (2009) and multiple-year comparisons (2007-2009).

Variety	Crookston		Morris		Stephen		St. Paul	Roseau	State Mean	
	2009	3-year	2009	2-year <sup>2</sup>	2009	3-year	2-year <sup>1</sup>	2-year <sup>1</sup>	2009	3-year
Robust	90	94	95	94	77	84	96	99	87	93
Lacey	98	103	110	111	97	106	105	106	102	106
Rasmusson <sup>3</sup>	106	104	113	112	100	105	103	113	106	106
Stellar ND	101	100	92	91	109	106	98	102	101	100
Tradition	92	96	111	104	102	101	101	100	102	100
Conlon <sup>4</sup>	113	95	—	96	100	89	81	91	106	90
LSD 0.05	20	8	31	12	17	8	8	8	12	5
Mean, Bu/A	106	111	71	75	111	111	111	113	98	105

<sup>1</sup> Only two years of data, 2007 and 2008.

<sup>2</sup> Only two years of data, 2007 and 2009.

<sup>3</sup> Only one year of data available at Roseau.

<sup>4</sup> Only one year of data available at Morris.

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). Released 2003. **PVP (94)**.

**Lacey** — High yield, 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, 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, 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. Because of its short stature and

superior lodging resistance Royal competes less with underseeded forage legumes than the taller barley and oat varieties. Resistant to spot blotch. Developed from crosses involving Robust, Azure and semidwarf Minn. M32. Released by Minn. AES 1994. **PVP (94)**.

### **Test Plot Research**

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

### **Agronomic characteristics of barley varieties, 2004–2009.**

Variety	Type	Use	Heading (DAP)	Height (inches)	Lodging (%)	Plump (%)	Protein (%)
Robust	6-row	Malt	58	34.0	med.	86	13.8
Lacey	6-row	Malt	58	31.9	strong	87	14.0
Rasmusson	6-row	Malt	58	30.2	strong	82	13.2
Stellar ND	6-row	Malt	58	31.8	strong	86	13.0
Tradition	6-row	Malt	59	32.2	med.	85	13.3
Conlon	2-row	Malt	55	30.9	med.	93	13.5
No. of Trials			18	16	15	14	14

### **Disease reactions of barley varieties in multiple-year comparisons<sup>1</sup>.**

Variety	Fusarium Head Blight	Net Blotch	Septoria Speckled Leaf Blotch	Spot Blotch	Stem Rust <sup>2</sup>
Robust	8	8	9	2	1
Lacey	8	8	9	2	1
Rasmusson	8	9	9	2	1
Stellar ND	8	7	9	2	1
Tradition	8	7	9	2	1
Conlon	7	5	9	3	1

<sup>1</sup> 1-9 scale where 1 = most resistant, 9 = most susceptible.

<sup>2</sup> Reaction to the dominant strain of the stem rust pathogen.