Minnesota Agricultural Experiment Station
University of Minnesota

Barley

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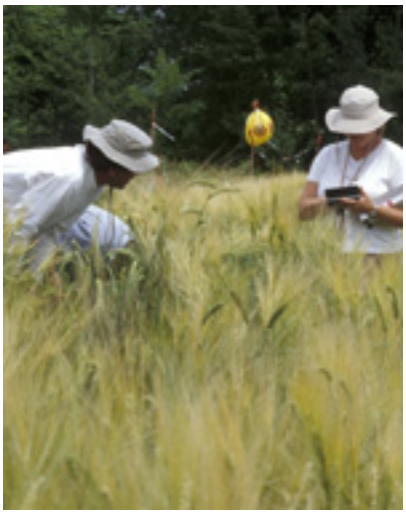
Varietal Trials Results, January 2006



Barley varieties are evaluated in replicated trials in Crookston, Morris, St. Paul Stephen and Roseau. The 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, therefore, select one of the 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. Among those approved varieties, Robust is preferred by industry. Drummond, Lacey, Tradition and Legacy are approved by AMBA and may be purchased for malting. Industry preference for the newer varieties is uncertain at this time. Please consult the AMBA recommended varieties for the most current information 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 only variety with partial resistance to FHB is MNBrite; however, MNBrite is not approved by AMBA as a malting variety. There are no significant differences among the current malting varieties for resistance to FHB. Descriptions of barley varieties covered by the U.S. Plant Variety Protection Act include a **PVP** designation. When **PVP** is followed by **(94)**, seed of that variety may not be sold by a grower, not even to a relative or neighbor, without express permission of the variety's developer/owner. If the PVP designation is followed by (pending), consider the variety as having PVP (94) protection.

General-Purpose Varieties

These varieties have tested three years or more.

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 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)**

Grain yield as a percent of the mean of the varieties in trials from 2003-2005 and 2005 alone.

	Crookston		Morris		Stephen	St. Paul		Roseau[3]	State Mean	
Variety	2005	3-Year	2005	3-Year	2-Year[1]	2005	2-Year[2]	2-Year[1]	2005	3-Year
Robust	89	82	99	94	90	106	104	98	98	92
Stander	88	96	114	107	94	97	96	108	100	100
MNBrite	107	94	95	98	101	108	99	87	104	95
Lacey	96	98	112	114	98	104	104	109	104	104
Drummond	89	99	100	95	95	111	110	103	100	99
Stellar	98	110	67	93	101	85	90	88	83	99
Legacy	98	98	100	96	104	98	104	110	99	101
Tradition	114	111	114	106	105	112	104	107	113	107
Conlon	121	114	99	97	113	79	90	88	100	103
LSD (0.05)	17	10	35	11	7	12	10	17	12	5
Mean, Bu/Acre	77	96	60	97	102	90	102	97	76	98

[1] Only two years of data, 2003 and 2004. [2] Only two years of data, 2004 and 2005. [3] No 2005 data available.

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, has 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)**

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)**

Legacy–High yielding and medium-late maturity. Medium 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. Developed by Busch-Agricultural Resources Inc. from a complex cross involving the parental varieties Bumper, Karl, Manker, and Excel. Released 2000. PVP (94)

Conlon–Medium yield and early maturity variety. Moderate lodging resistance, 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, 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**. PVP**

Characteristics of barley varieties, 2000–2005.

Variety	Type	Use	Heading (DAP)	Height (in.)	Lodging (%)	Plump (%)	Protein (%)
Robust	6-row	Malt	58	83	Med.	83	13.2
Stander	6-row	Feed	59	85	Strong	85	12.6
MNBrite	6-row	Feed	58	83	Med.	83	14.1
Lacey	6-row	Malt	58	84	Strong	84	13.1
Drummond	6-row	Malt	58	81	V Strng	81	13.2
Stellar[1]	6-row	Feed	60	85	Strong	85	12.8
Legacy	6-row	Malt	59	77	Med.	77	12.9
Tradition[2]	6-row	Malt	59	85	Med.	85	13.8
Conlon[2]	2-row	Malt	60	93	Med.	93	13.6
No. Trials			18	18	17	12	14

[1] Only two years of plump and protein data, 2000-2001.
[2] Only two years of plump and protein data, 2003-2004.

Disease reactions[1] of barley varieties, 2001-2004.

Variety	FHB	Blotch	Septoria Speckled Leaf Blotch	Spot Blotch	Stem Rust
Robust	8	8	9	2	1
Excel	8	8	9	2	1
Stander	9	8	9	2	1
MNBrite	6	6	9	1	1
Lacey	8	8	9	2	1
Drummond	8	7	9	2	1
Legacy	7	5	9	2	1
Tradition	8	7	9	2	1

[1] Most Resistant = 1, Most Susceptible = 9.

Special-Purpose Varieties

These varieties also are adequately tested three years or more. They have special attributes that differentiate them from general-purpose varieties or are intended for a specific end use.

Stellar–Medium yielding and medium maturity. Good lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, long rachilla hairs, and colorless aleurone. Currently being evaluated in industry brewing test. Not 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)**

MNBrite–Medium yield and early maturity. Medium lodging resistance and kernel plumpness. Six-rowed, semi-smooth awns, colorless aleurone. Not classified as a malting variety. Resistant to kernel discoloration, has some resistance to FHB. Resistant to spot blotch, slightly better net blotch resistance compared to Robust. Released by Minn. AES 1998.

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, it competes less with underseeded forage legumes compared to taller barley and oat varieties. Resistant to spot blotch. Developed from crosses involving Robust, Azure, and semi-dwarf Minn. M32. Released by Minn. AES 1994. **PVP (94)**

Stander–Medium yield and late maturity. Very good lodging resistance, 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 Minnesota AES from crosses involving Excel, Robust, and Bumper. Released 1993. **PVP**

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