

# GRAIN CROPS



## BARLEY

Barley varieties are compared in replicated trials at Crookston, Morris, St. Paul, Stephen and Roseau. In addition, data has been included from Dr. Jochum Wiersma's on-farm yield trials. The data collected from these trials is intended to facilitate comparisons among those varieties included. Barley varieties are listed chronologically by year of release.

### Variety Selection Criteria

Most barley producers in the region grow barley with the intent to market it 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 the toxin DON.

Among these approved varieties, Robust is preferred by industry, although Excel and Foster may be purchased for malt as well. Morex, a lower-yielding variety that was dominant in the early 1980s, is included in our trials for comparison purposes. Stander was initially approved

by AMBA, but is no longer considered a malting variety. For most producers, scab and DON in harvested grain are the most important factors limiting production of malting barley in the region. The only variety with partial resistance to scab is MNBrite; however, MNBrite is not approved by AMBA as a malting variety. Two new varieties, Lacey and Drummond, are undergoing their fourth year of AMBA quality evaluation.

### General-Purpose Varieties

**Foster** – Medium yield and medium maturity. Good lodging resistance and kernel plumpness. Resistant to spot blotch. Six-rowed, semi-smooth awns, colorless aleurone. Has long rachilla hairs allowing grain to be distinguished from that of Robust and Stander. Classified as a

malting variety by AMBA. Discounted in the marketplace as compared to Robust. Developed by N.D. AES from crosses involving Robust, ND 5570, Glenn and Karl. Released 1995. **PVP (94)**

**Excel** – High yield and medium maturity. Similar to Robust in lodging resistance. Kernel plumpness lower than Robust. Six-rowed semi-smooth awn, colorless aleurone. Has long rachilla hairs allowing grain to be distinguished from that of Robust and Stander. Classified as a malting variety by AMBA. Resistant to spot blotch. Developed by Minn. AES from cross involving Robust, Manker, and a sister-line of Morex. Released 1990. **PVP**

**Robust** – Medium yield and medium maturity. Good lodging resistance and kernel plumpness. Six-rowed, semi-smooth awn, short rachilla hairs, colorless aleurone. Classified as a malting variety by AMBA. Robust is currently the six-row variety of choice for malting and brewing in the Midwest. Resistant to spot blotch. Developed by Minn. AES from crosses involving Morex and Manker. Released 1983. **PVP**

**Morex** – Low yield and early maturity. Susceptible to lodging. Kernel plumpness intermediate. Six-rowed, semi-smooth awn, short rachilla hairs, color-

### Grain yields as a percent of the trial mean, from 1998-2000 and for 2000 alone.

Variety	Crookston		Morris		Stephen		St. Paul		Roseau		Mean	
	98-00	00	98-00	00	98-00	00	98-00	00	98-00	00	98-00	00
No. of Trials	6	2	6	2	1	1	3	1	2	1	18	7
Morex	88	87	88	83	78	78	89	82	81	68	87	81
Robust	90	96	92	97	91	91	88	96	86	71	90	92
Stander	108	107	103	100	101	101	95	97	101	107	103	103
Foster	99	101	97	101	97	97	101	109	100	112	99	103
MNBrite	96	98	98	101	84	84	88	82	103	99	95	94
Lacey	108	106	109	115	107	107	98	98	104	97	106	106
Drummond	95	88	94	88	87	87	101	100	97	99	95	91
Mean, Bu/Acre	104	93	97	87	87	87	85	87	77	76	95	87

less aleurone. Awns may drop off as crop approaches maturity. Threshes easily. Classified as a malting variety by AMBA. Moderate resistance to spot blotch. Developed by Minn. AES from cross of Cree and Bonanza. Released 1978.

### Special-Purpose Varieties

**Lacey** – High yield and medium maturity. Good lodging resistance and kernel plumpness. Six-rowed, semi-smooth awn, short rachilla hairs, colorless aleurone. *Currently undergoing malting quality evaluation by AMBA.* Resistant to spot blotch. Developed by Minn. AES from crosses involving Robust, Excel and Stander. Released 2000. Plant Variety Protection. **PVP (pending)**

**Drummond** – Medium yield and medium maturity. Very good lodging resistance and good kernel plumpness. Six-rowed, semi-smooth awn, long rachilla hairs, colorless aleurone. *Currently undergoing malting quality evaluation by AMBA.* Resistant to spot blotch. Developed by N.D. AES from crosses involving Azure, Bumper, Hazen, and Stander. Released 2000. **PVP (pending)**

**MNBrite** – Medium yield and early maturity. Good lodging resistance and kernel plumpness. Provides some protection against Fusarium head blight (scab). It has about one-half as many scab-infected kernels per head and lower toxin (DON) levels compared to Robust or Stander. The kernels are brighter and more disease-free than other varieties, hence the name MNBrite. Resistant to spot blotch. Not approved as a malting variety by AMBA. Six-rowed, semi-smooth awns, colorless aleurone. Grain samples difficult to distinguish from Robust and Stander. Developed by Minn. AES. Released 1998. **PVP (pending)**

**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. Forage quality superior 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

### Agronomic traits of selected barley varieties, 1998-2000.

Variety	Heading*	Height, In.	Lodging, %	Plump, %	Protein, %
No. of Trials	11	14	8	8	3
Morex	56	36	41	69	13.4
Robust	56	37	38	75	13.2
Stander	57	33	32	81	13.1
Foster	56	35	40	78	12.5
MNBrite	57	36	37	74	14.0
Lacey	57	34	30	78	13.0
Drummond	56	35	26	73	12.8

\* Days after planting

### Toxin (DON, ppm) values in grain from non-inoculated (naturally infected) trials, 1996-2000.

Variety	1996 <sup>1</sup>	1997 <sup>1</sup>	1998 <sup>2</sup>	1999 <sup>3</sup>	2000 <sup>4</sup>
No. of Trials	2	2	11	2	3
Robust	3.6	3.4	4.7	2.4	6.6
Stander	5.8	7.3	6.6	4.5	12.8
Lacey	–	3.4	5.5	2.3	6.4
MNBrite	2.8	2.6	4.0	1.5	6.3

<sup>1</sup> Crookston and Stephen, advanced yield trials, <sup>2</sup> Minnesota on-farm yield trials, Dr. Jochum Wiersma, <sup>3</sup> Crookston, B. Weers, <sup>4</sup> Crookston advanced, intermediate and preliminary yield trials.

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 by Minn. AES from crosses involving Robust, Azure and semidwarf Minn. M32. Released 1994. **PVP**

**Stander** – High yield medium late maturity. Very good lodging resistance and good kernel plumpness. Six-rowed, semi-smooth awn, short rachilla hairs, colorless aleurone. Initially classified as a malting

variety by AMBA, but has been removed from the industry approved list. Resistant to spot blotch. Developed by Minn. 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