

Oat

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Proper selection of oat varieties requires consideration of the anticipated growing conditions, the pests that might be encountered in a specific production situation, the purpose for growing the crop and its eventual usage. Specific growing situations will dictate the priority and emphasis given to each trait included in the tables. While crown rust usually is the most important disease, in 2008 there was little crown rust in the state except in the southeast quarter because the weather elsewhere in mid-2008 was not favorable for rust infection in spite of ample inoculum and many susceptible varieties in production.

A detailed interpretation of our crown rust data follows. Because of several changes in rust races in recent years, many of the varieties currently grown are now susceptible to crown rust. In the disease data table, the crown rust rating is a combination of the quantity of pustules and their relative size. The scores range from susceptible to moderately susceptible. Three varieties, Souris, Stallion and Beach, are less likely to suffer severe damage than the other seven varieties in the table.

Treated seed should be used for smut-susceptible varieties, and those with BYDV (red leaf) susceptibility (score of 6.0 or higher) should be chosen carefully.

Earlier varieties may perform relatively better in more southerly parts of the state; later varieties usually have an advantage in the north. Taller varieties generally tend to produce more forage and/or straw. Lodging can be site-specific; varieties with lodging scores above 2.0 should be chosen cautiously, especially if your soil is highly fertile. Groat percent is an important consideration for grain production, perhaps equal to grain yield, whether the crop is intended for food or feed. This year we have again added the calculated trait, groat yield, a combination of bushels per acre and groat percent.

Descriptions of oat varieties covered by the U.S. Plant Variety Protection Act include a PVP designation. When PVP is followed by the notation (94), seed of that variety may not be sold by a grower, not even to a relative or neighbor, without the expressed 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

Many of these varieties have been tested three years or more; they usually are not grown for a specific special purpose.

Baker — Medium maturity, average yield, medium height, fair lodging resistance, average test weight, fair groat percentage. Ivory-white seed. Susceptible to crown rust, resistant to smut and tolerant to red leaf. Selected at Iowa AES. Released in 2006.

Beach — Late maturity, high yield, taller, medium lodging resistance, above average test weight and groat percentage. Some resistance to crown rust, moderately resistant to smut, susceptible to red leaf. Ivory-white seed. Selected at N.D. AES. Released in 2006. **PVP (94)**

Buckskin — Medium maturity, high yield, average height, good lodging resistance, good test weight, average groat percent. Susceptible to crown rust and smut, tolerant to red leaf. White seed. Released at Ill. AES in 2007. **PVP (94)**

Esker — Early-medium maturity, average yield and height, fair lodging resistance, below average test weight, better groat percentage. Yellow seed. Susceptible to crown rust, resistant to smut, some tolerance to red leaf. Selected at Wis. AES. Released in 2003. Foundation seed available to certified seed producers only under a license/fee collection agreement. **PVP (94)**

Oat traits, 2006-2008.

Variety	Days After Planting To Heading	Height, Inches	Lodging, 1 = Erect 5 = Flat	Test Weight, Lb/Bu	Groat %	Groat Yield, Bu/Acre
Baker	61	32	2.0	41.3	69.3	73.2
Beach	64	36	1.8	42.9	71.4	78.2
Buckskin	61	32	1.9	42.6	70.1	78.9
Esker	59	32	2.1	40.5	71.7	78.1
Excel ¹	59	31	2.0	40.0	67.8	77.6
Kame	58	30	1.9	38.8	70.7	72.1
Morton	64	36	2.0	40.6	69.4	70.8
Souris ¹	63	31	1.7	42.1	72.7	78.9
Stallion	63	36	2.4	41.9	70.5	79.9
Winona	57	31	1.9	41.0	71.6	66.7
Average	61	33	2.0	41.2	70.5	75.5

¹ 2-year data adjusted for 3 years.

Oat yield, percent of mean, by location, 2006-2008.

Variety	Rosemount	Waseca	Lamberton	Morris ¹	Crookston	Average of 5 Locations
Baker	105	99	98	92	99	99
Beach	95	102	102	108	105	102
Buckskin	95	101	102	113	113	105
Esker	106	101	101	95	104	102
Excel ²	106	108	109	111	103	107
Kame	94	96	101	92	93	95
Morton	88	104	96	90	98	95
Souris ²	105	105	95	96	105	101
Stallion	108	106	109	111	98	106
Winona	98	79	88	91	82	87
Location mean (bu/acre).	93	90	108	127	123	107
LSD 0.05 (% of mean).	7.1	8.9	8.3	9.1	6.2	3.5

¹ 2006-07 data only.

² 2-year data adjusted for 3 years.

Excel – Early-medium maturity, high yield, shorter, average lodging resistance, below average test weight and groat percentage. Yellow seed. Susceptible to crown rust and smut, very good tolerance to red leaf. Selected at Purdue AES. Released in 2007. Foundation seed available to certified seed producers only under a license/fee collection agreement. **PVP (94)**

HiFi – Late maturity, high yield, tall, good lodging resistance, high test weight, medium groat percentage. White seed. Resistant to crown rust, moderately susceptible to smut, some tolerance to red leaf. Selected at N.D. AES. Released in 2001. **PVP (94)**

Kame – Early maturity, below average yield, short, good lodging resistance, poor test weight, average groat percentage. Yellow seed. Susceptible to crown rust, moderately

resistant to smut, susceptible to red leaf. Selected at Wis. AES. Released in 2004. Foundation seed available to certified seed producers only under a license/fee collection agreement. **PVP (94)**

Moraine – Medium maturity and yield, short, fair lodging resistance, good test weight, high groat percentage. Yellow seed. Susceptible to crown rust, resistant to smut, some tolerance to red leaf. Selected at Wis. AES. Released in 2001. Foundation seed available to certified seed producers only under a license/fee collection agreement. **PVP (94)**

Morton – Late maturity, below average yield, tall, average lodging resistance, below average test weight, fair groat percentage. Ivory seed. Susceptible to crown rust, resistant to smut, susceptible to red leaf. Selected at N.D. AES. Released in 2001. **PVP (94)**

Reeves – Early maturity, fair yield, medium height, poor lodging resistance, high test weight and groat percentage. Ivory seed. Susceptible to crown rust, moderately susceptible to smut, susceptible to red leaf. Selected at S.D. AES. Released in 2002.

Richard – Early-medium maturity, medium yield, tall, good lodging resistance, high test weight, medium groat percentage. Yellow seed. Susceptible to crown rust, resistant to smut, some tolerance to red leaf. Selected at Minn. AES. Released in 2000. **PVP (94)**

Riser – Early maturity, lower yield, short, fair lodging resistance, high test weight and groat percentage. Yellow seed. Some resistance to crown rust and smut, susceptible to red leaf. Selected at S.D. AES. Released in 1998.

Sesqui – Late maturity, lower yield, average height, fair lodging resistance, fair test weight, poor groat percentage. Yellow seed. Susceptible to crown rust, resistant to smut, good tolerance to red leaf. Selected at Minn. AES. Released in 2001.

Oat yield (percent of mean), off-station locations, 2008 only.

Variety	Stephen
Baker	108
Beach	100
Buckskin	95
Esker	105
Excel	103
Kame	76
Morton	103
Souris	110
Stallion	103
Winona	97
Location mean (bu/acre).	148
LSD 0.05 (% of mean).	5.4

Disease data in a single year, 2008.

Variety	Crown Rust (Buckthorn Nursery)		Smut Score ³	BYDV Score ⁴
	Amount ¹	Reaction Type ²		
Baker	>20	S	R	3.5
Beach	20	MS	MR	7
Buckskin	>20	S	S	3.5
Esker	>20	MS	R	4.5
Excel	>20	MS	S	1.5
Kame	>20	MS	MR	7
Morton	>20	S	R	6
Souris	10	MS	R	5
Stallion	20	MS	S	6.5
Winona	>20	S	MR	4

¹ Relative proportion of rust spores that will achieve a successful infection.

² R = resistant, MR = moderately resistant, MS = moderately susceptible and S = susceptible.

³ Artificially inoculated, R = resistant, MR = moderately resistant, MS = moderately susceptible and S = susceptible.

⁴ Barley yellow dwarf virus score from Urbana, Ill., with 1 = no symptoms and 9 = dead.

Souris — Medium-late maturity, medium yield, shorter, very good lodging resistance, good test weight, very good groat percentage. Ivory-white seed. Some resistance to crown rust. Resistant to smut and susceptible to red leaf. Selected at North Dakota AES. Released in 2006. **PVP (94)**

Spurs — Early-medium maturity, good yield, short with good lodging resistance. Good test weight, average groat percentage. Ivory-white seed. Susceptible to crown rust, smut, and red leaf. Released by Ill. AES in 2005. **PVP (94)**

Stallion — Late maturity, high yield, tall with poor lodging resistance. Good test weight, average groat percentage. White seed. Some resistance to crown rust, susceptible to smut and red leaf. Released by S.D. AES in 2006. **PVP (94)**

Wabasha — Medium maturity and height; lower yield, fair lodging resistance and test weight, high groat percentage. White seed. Susceptible to crown rust, resistant to smut and tolerant to red leaf. Selected at Minn. AES. Released in 2001.

Winona — Early, low yield, short, average lodging resistance, average test weight, good groat percentage. Yellow seed. Susceptible to crown rust, resistant to smut and red leaf. Selected at Minn. AES. Released in 2005.

Special-Purpose Variety

This variety has also been tested three years or more, and has special attributes that differentiate it from general-purpose varieties or is intended for a specific end use.

Buff — Hulless. Medium maturity, good yield for hulless variety. Medium height, good lodging resistance, very high test weight. Susceptible to crown rust, resistant to smut, susceptible to red leaf. Selected at S.D. AES. Released in 2002.

Test Plot Research

Test plot establishment and management were supervised by Tom Hoverstad, George Nelson, Steve Quiring and John Weirisma.

Oat	
Planting Rate and Date	
Bushel Weight, Pounds.....	32
Seeds/Pound.....	16,200
Planting Rate, Pounds/Acre.....	80
Planting Rate, Seeds/Sq. Ft.....	28
Planting Date.....	Early Spring