



## 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. Crown rust continues to be the prevalent disease of oat, repressing high-yielding, high-quality oat production. Although adequate moisture was present during most of the growing season, delayed planting and excessive heat during seed fill caused yields to decline from previous years.

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, Rockford, and Badger, are less likely to suffer severe damage than the other 11 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 for three-year data should be chosen cautiously, especially if your soil is highly fertile. Groats percent is an

important consideration for grain production, perhaps equal to grain yield, whether the crop is intended for food or feed. It is defined as percentage of groat in proportion to the whole seed on a weight basis. Please note that Streaker is a hullless variety and no groat percentage is given.

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 express permission of the variety's developer/owner. If the PVP designation is followed by (pending), consider the variety as having PVP (94) protection.

Included this year in the oat yield table are 1-year data for all varieties grown in the trial in 2011. These data should not be considered as reliable as data you would expect from 3-year data, due to more diverse growing conditions factored in. Similarly, the oat traits table has 1-year data for maturity, height, lodging, test weight and groat percentage.

### Oat traits, 2009-11.

Variety	Days After Planting To Heading		Height (inches)		Lodging Score, 1 = Erect, 5 = Flat		Test Weight (Lb/Bu)		Groat %	
	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year
Badger	57.1	58.6	32	30	3.3	2.3	38.5	40.1	70.0	71.3
Beach	62.2	64.8	41	40	2.1	1.7	41.5	43.1	73.0	73.3
Colt	57.1	58.4	35	32	2.4	3.0	41.7	41.7	72.8	72.5
Esker	59.0	60.8	35	34	2.0	1.8	39.0	40.5	72.1	73.3
Excel	59.6	60.8	35	33	2.6	2.7	38.3	39.0	69.2	69.3
Jerry	61.5	61.7	38	36	2.7	3.0	38.3	40.9	69.2	70.8
Morton	63.2	65.2	40	38	2.3	2.1	37.6	39.3	70.2	70.5
Rockford	63.7	65.4	40	39	1.9	1.5	40.4	42.8	73.1	74.0
Saber	58.3	59.9	34	33	2.2	2.1	40.4	41.1	74.8	74.7
Shelby427	58.7	—	38	—	2.1	—	42.6	—	73.6	—
Souris	61.8	64.1	35	35	1.9	1.5	41.2	42.3	73.3	74.0
Spurs	59.4	60.8	34	32	2.6	2.4	39.5	41.2	71.7	72.3
Streaker	60.0	61.5	36	35	2.6	2.8	51.6	49.2	—	—
Tack	59.6	60.5	32	31	2.1	2.2	42.7	43.1	73.2	73.2
Average	60.1	61.7	36.1	34.3	2.3	2.3	41.0	41.9	72.0	72.4

## General-Purpose Varieties

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

**Badger** – Early maturity, average yield, shorter, fair lodging resistance, average test weight, average groat percentage. Yellow seed. Moderately susceptible to crown rust, resistant to smut, some tolerance to red leaf. Selected at Wisconsin AES. Released in 2010. **PVP (94)**

**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.

### Oat yield, (percent of mean) off-station locations, 2011 only.

Variety	Stephen	Winona
Badger	98	132
Beach	107	—
Colt	93	100
Esker	98	96
Excel	103	94
Jerry	105	73
Morton	96	—
Rockford	121	—
Saber	109	117
Shelby427	95	104
Souris	113	102
Spurs	83	102
Streaker (hullless)	82	—
Tack	96	79
Location mean (bu/acre)	136	72
LSD 0.05 (%)	14.0	21.2

**Beach** – Late maturity, high yield, taller, medium lodging resistance, above-average test weight and groat percentage. Ivory-white seed. Some resistance to crown rust, moderately resistant to smut, some resistance to red leaf. Selected at North Dakota AES. Released in 2004. **PVP (94)**

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

**Colt** – Very early maturity, average yield, shorter, poor lodging resistance, average test weight and groat percentage. White seed. Susceptible to crown rust, resistant to smut, susceptible to red leaf. Selected at South Dakota AES. Released in 2009. **PVP (94) (pending)**

**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 Wisconsin AES. Released in 2003. Foundation seed available to certified seed producers only under a license/fee collection agreement. **PVP (94)**

**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 2006. 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 North Dakota 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 Wisconsin AES. Released in 2004. 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 North Dakota 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 South Dakota 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 Minnesota 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 South Dakota AES. Released in 1998.

**Rockford** – Late maturity, very good yield, tall, very good lodging resistance, good test weight and groat

### Disease data in a single year, 2011.

Variety	Crown Amount <sup>1</sup>	Rust (Buckthorn Nurs) Reaction Type <sup>2</sup>	Smut Score <sup>3</sup>	BYDV Score <sup>4</sup>
Badger	40	MR-S	R	6.0
Beach	30	MS-S	MR	4.0
Colt	30	R-MS	R	5.5
Esker	50	MR-S	R	4.5
Excel	50	S	S	3.5
Jerry	60	S	S	4.5
Morton	30	MS-S	R	5.0
Rockford	15	MS-S	MR	4.5
Saber	40	MS-S	MS	3.0
Shelby427	30	MR-S	R	2.5
Souris	20	MS-S	R	3.5
Spurs	15	MS-S	MS	4.0
Streaker	30	MS-S	R	3.5
Tack	40	MS-S	S	4.0

<sup>1</sup> Relative proportion of rust spores that will achieve a successful infection.

<sup>2</sup> R = resistant, MR = moderately resistant, MS = moderately susceptible and S = susceptible.

<sup>3</sup> Artificially inoculated, R = resistant, MR = moderately resistant, MS = moderately susceptible and S = susceptible.

<sup>4</sup> Barley Yellow Dwarf Virus score from Urbana, Illinois, with 1 = no symptoms and 9 = dead.

percentage. Ivory-white seed. Some resistance to crown rust, resistant to smut, tolerant to red leaf. Selected at North Dakota AES. Released in 2008. **PVP (94) (pending)**

**Saber** – Early maturity, good yield, shorter, fair lodging resistance, good test weight, excellent groat percentage. Yellow seed. Susceptible to crown rust, moderately susceptible to smut, tolerant to red leaf. Selected at Illinois AES. Released in 2010. **(PVP (94) (pending))**

**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 Minnesota AES. Released in 2001.

**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 some resistance to red leaf. Selected at North Dakota AES. Released in 2006. **PVP (94)**

**Spurs** – Early-medium maturity, good yield, short, some lodging resistance, average test weight, average groat percentage. Ivory-white seed. Susceptible to crown rust, smut and red leaf. Released by Illinois AES in 2003. **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 South Dakota AES in 2006. **PVP (94)**

**Tack** – Early-medium maturity, short, fair yield and lodging resistance, very good test weight and good groat percentage. Tan seed. Susceptible to crown rust and smut, moderate resistance to red leaf. Selected at Illinois AES. Released 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 Minnesota 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 Minnesota 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 South Dakota AES. Released in 2002.

**Streaker** – Hulless. Medium maturity, good yield for hulless variety, taller, fair lodging resistance, high test weight. Susceptible to crown rust, resistant to smut and good tolerance to red leaf. Selected at South Dakota AES. Released in 2008, **PVP (94) (pending)**

### Test Plot Research

Tom Hoverstad, George Nelson, Steve Quiring and John Wiersma supervised test plot establishment and management.

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

### Oat yield, percent of mean, by location, 2009-11.

Variety	Rosemount		Waseca		Lamberton		Morris		Crookston		Average of 5 locations	
	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year
Badger	122	97	74	94	76	93	77	80	89	94	87	92
Beach	98	95	96	103	84	102	106	109	95	96	95	101
Colt	94	79	101	93	82	89	90	91	92	85	91	88
Esker	125	107	111	94	98	104	95	92	104	97	105	99
Excel	115	95	111	95	112	102	104	98	109	106	110	100
Jerry	72	81	62	78	97	83	88	94	81	78	82	83
Morton	81	70	68	84	99	94	87	98	87	90	86	88
Rockford	114	119	102	120	111	109	117	119	100	110	108	115
Saber	121	112	105	95	91	103	105	101	99	100	103	102
Shelby427	122	—	98	—	99	—	107	—	96	—	103	—
Souris	106	112	113	115	115	113	93	92	123	116	111	110
Spurs	104	104	107	92	98	104	89	87	107	103	101	98
Streaker	67	71	65	68	55	63	59	72	82	79	67	71
Tack	108	84	97	85	80	89	84	88	79	86	87	87
Location Mean (bu/acre)	67	87	64	100	95	123	91	104	128	117	89	106
LSD 0.05 (% of mean)	19.7	8.1	27.4	10.2	20.5	11.9	14.7	10.2	20.1	10.4	9.2	4.7