



# OAT

Proper selection of oat varieties requires consideration of the anticipated growing conditions, the pests that might be encountered in a specific production situation and the purpose for growing the crop. Specific growing situations will dictate the priority and emphasis given to each trait included in the tables.

Generally, crown rust is the most important disease and detailed interpretation of our data follows. We divided the rust reading into two columns beneath “Crown Rust” headed “Amount Infected” and “Reaction Type.” The value in the Crown Rust Amount Infected column predicts the relative proportion of rust spores that will achieve a successful infection. The Reaction Type value gives the size of the pustule, which indicates how much the pustule is restricted by the host reaction. A small and/or restricted pustule produces fewer spores for reinfection.

Depending upon the plant growth stage at initial infection, there can be one to three cycles of reinfection during an oat-growing season. Each infection cycle is 8 to 10 days long. The final amount of rust infection depends upon both the number and size of spore-producing pustules present to cause subsequent infections. It is these later infections that really damage the plant.

Treated seed should be used for smut-susceptible varieties, and those with

BYDV (red leaf) susceptibility (score of 7 or higher) should be chosen carefully.

Groat percent is an important consideration for grain production, perhaps equal to grain yield, whether for food or feed. Lodging can be site-specific; varieties with lodging scores above 2.6 should be chosen cautiously if soil is highly fertile. Taller varieties may generally produce more forage and/or straw. Earlier varieties tend to perform relatively better in more southerly parts of the state while later varieties usually have an advantage in the north.

## General-Purpose Varieties

**Dane**—Early maturity, lower yield, short, good lodging resistance, fair test weight, high groat percentage. Yellow seed. Moderately resistant to crown rust and smut, susceptible to red leaf. Selected at the Wis. AES. Released in 1990. Foundation seed available to certified seed producers only under a license/fee collection agreement. Because of smut susceptibility, planting only treated seed is recommended. **FVP**

**Drumlin**—Late maturity, very high yield, fair lodging resistance, medium test weight and groat percentage, yellow

### Oat traits, 2003-2004

Variety	Days After Planting To Heading	Height, Inches	Lodging, 1 = Erect 5 = Flat	Test Weight, Lb/Bu	Groat %
Reeves	63	41	3.2	41.6	72.2
Moraine	65	39	2.3	40.1	72.9
Richard	65	44	2.3	40.2	70.1
Wabasha	66	40	1.9	39.7	73.0
Gem	67	41	2.7	39.5	71.1
Vista	67	42	2.9	40.1	71.5
Sesqui	68	40	2.6	39.5	67.8
Morton	69	46	1.5	41.3	71.2
HiFi	69	44	1.9	41.1	71.1
Leonard	69	41	2.8	37.1	70.1
Drumlin	69	40	2.5	39.7	71.9
Mean	67	42	2.4	40.0	71.2

### Oat yield, (Percent of mean) off-station locations, 2004 only.

Variety	Madison <sup>1</sup>	Winona <sup>1</sup>
Dane	89	95
Reeves	95	63
Moraine	78	149
Richard	100	102
Wabasha	102	85
Gem	120	124
Vista	99	94
Sesqui	104	83
Morton	99	114
HiFi	111	96
Leonard	106	76
Drumlin	97	119
Location Mean (Bu/Acre)	95	58
LSD 0.05 (% of Mean)	23.5	34.4

<sup>1</sup> Organic reduced pesticide locations.

**Oat yield, percent of mean, by location, 2002-2004.**

Variety	Rosemount	Waseca	Lamberton	Morris	Average of 4 locations	Crookston <sup>1</sup>	Grand Rapids <sup>1</sup>	Average of 6 locations
Reeves	98	92	100	72	90	88	54	84
Moraine	95	93	90	109	97	100	103	98
Richard	96	98	94	89	94	100	109	98
Wabasha	100	107	96	98	100	103	88	99
Gem	98	97	96	98	97	92	103	97
Vista	100	91	96	109	100	104	107	101
Sesqui	102	95	108	105	103	106	104	103
Morton	109	110	114	105	110	99	100	106
HiFi	107	108	114	101	107	103	98	105
Leonard	99	94	98	101	98	101	113	101
Drumlin	105	104	109	118	109	111	114	110
Location Mean (Bu/Acre)	86	84	88	96	89	142	126	100
LSD 0.05 (% of Mean)	8.2	8.3	9.7	8.8	4.4	8.6	14.6	4.5

<sup>1</sup> Data from 2003 and 2004 only.

seed. Resistant to crown rust and 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** (pending)

**Gem**—Medium maturity, high yield, medium height, fair lodging resistance, fair test weight and groat percentage. Yellow seed. Resistant to crown rust and smut, susceptible to red leaf. Selected at Wis. AES. Released in 1995. 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. Modest resistance to crown rust and smut, some tolerance to red leaf. Selected at N.D. AES. Released in 2001. **PVP** (94)

**Jerry**—Medium maturity, medium yield, tall, good lodging resistance, very high test weight, high groat percentage. Ivory seed. Susceptible to crown rust and to smut, some tolerance to red leaf. Selected at N.D. AES. Released in 1994. Because of smut susceptibility, planting

only treated seed is recommended. **PVP** (94)

**Leonard**—Late maturity, high yield, medium height, fair lodging resistance, fair test weight and groat percentage. Yellow seed. Resistant to crown rust and smut. High tolerance to red leaf. Selected at Minn. AES. Released in 2002.

**Moraine**—Early maturity, medium yield, short, good lodging resistance, high test weight and groat percentage. Yellow seed. Resistant to crown rust and 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** (pending)

**Disease data in single year (2004), except crown rust (2003).**

Variety	Crown Rust <sup>1</sup>		Smut Score <sup>3</sup>	BYDV Score <sup>4</sup>
	Amount Infected	Reaction, Type <sup>2</sup>		
Reeves	10	MR-MS	S	6
Moraine	5	R-MR	R	6
Richard	15	MR-MS	R	4
Wabasha	5	MR-MS	MR	6
Gem	1	R-MR	MR	7
Vista	1	R-MR	R	8
Sesqui	10	MS	R	4
Morton	5	R-MR	R	6
HiFi	10	S-MS	MS	6
Leonard	5	MR-MS	R	3
Drumlin	1	R	R	6

<sup>1</sup> Data from inoculated nursery in 2003.

<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, Ill, with 1 = no symptoms and 9 = dead.



**Oat trial locations.**

**Morton**—Late maturity, very high yield, tall, very good lodging resistance, very high test weight, medium groat percentage. Ivory seed. Very good resistance to crown rust and smut, some tolerance to red leaf. Selected at N.D. AES. Released in 2001. **PVP** (pending)

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

**Richard**—Early maturity, high yield, tall, good lodging resistance, high test weight and medium groat percentage. Yellow seed. Some resistance to crown rust, resistant to smut and good 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. Resis-

tant to crown rust and smut, susceptible to red leaf. Selected at S.D. AES. Released in 1998.

**Sesqui**—Late maturity, high yield, medium height, good lodging resistance, fair test weight, lower groat percentage. Yellow seed. Moderately resistant to crown rust, resistant to smut and good tolerance to red leaf. Selected at Minn. AES. Released in 2001.

**Vista**—Medium maturity, high yield, medium height, poor lodging resistance, high test weight and groat percentage. Yellow seed. Resistant to crown rust and smut, very susceptible to red leaf. Selected at Wis. AES. Released in 1999. **PVP** (94)

**Wabasha**—Medium maturity, high yield, medium height, very good lodging resistance, fair test weight, high groat percentage. White seed. Some resistance to crown rust, resistant to smut, some tolerance to red leaf. Selected at Minn. AES. Released in 2001.

**Troy**—Medium maturity, medium yield, tall, poor lodging resistance, low test weight, medium groat percentage. White seed. Moderately susceptible to crown rust, resistant to smut, good tolerance to red leaf. Selected at S.D. AES. Released in 1991.

### **Special-Purpose Variety**

**Paul**—Hulless. Medium-late maturity, high yield for hulless cultivar, tall, very good lodging resistance; hulless, so very high test weight. Moderately susceptible to crown rust, resistant to smut, moderately susceptible to red leaf. Selected at N.D. AES. Released in 1994. **PVP** (94)

### **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