



# 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 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 achieve a successful infection. The Reaction Type value gives the size of the pustule, which indicates how 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 6 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 2.4 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

**AC Assiniboia** – Late maturity, high yield, medium height, very good lodging resistance, high test weight and groat percentage. Almost brown seed. Good resistance to crown rust and smut, tolerance to red leaf. Selected by Cereal Research Centre, Agriculture and Agri Food Canada in Winnipeg. Released in 1995.

**Belle** – Late maturity, medium yield, tall, good lodging resistance, high test weight and very high groat percentage. Yellow seed. Resistant to crown rust and smut, some tolerance 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)**

**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. **PVP**

**Ebeltoft** – Late maturity, short, medium yield, good lodging resistance, fair test weight and groat percentage. Ivory seed. Modest resistance to crown rust, resistant to smut, good tolerance to red leaf. Selected at N.D. AES. Released in 1999.

**Gem** – Medium-late maturity, high yield, medium height, fair lodging resistance, fair test weight and groat percentage. Yellow seed. Resistant to crown rust and smut, good tolerance 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)**

## Oat yield, (% of mean) off-station locations, 2003 only.

Variety	Roseau	Stephen	Wells <sup>1</sup>	Winona <sup>1</sup>
Riser	–	–	93	91
Dane	–	–	92	86
Reeves	67	82	87	102
Moraine	89	93	108	113
Richard	95	104	93	92
Wabasha	93	100	81	104
Rodeo	98	111	101	116
Vista	98	97	116	87
Gem	99	92	88	91
Sesqui	112	95	119	102
Morton	90	99	114	99
Leonard	109	102	106	100
HiFi	96	99	–	–
Belle	96	92	102	117
Drumlin	118	107	–	–
Ebeltoft	114	111	–	–
Loyal	104	101	–	–
Youngs	120	109	–	–
AC Assiniboia	103	108	–	–
Location Mean (Bu/Acre)	143	140	76	83
LSD 0.05 (% of Mean)	21.5	12.2	15.7	22.8

<sup>1</sup> Organic farmer fields.

**HiFi** – Medium-late maturity, high yield, tall, good lodging resistance, high test weight, medium groat percentage. White seed. Modest resistance to crown rust and smut, good tolerance to red leaf. Selected at N.D. AES. Released in 2001. **PVP (pending)**

**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, tolerant to red leaf. Selected at N.D. AES. Released in 1994. Because of smut susceptibility, planting only treated seed is recommended. **PVP (94)**

**Kildeer** – Medium maturity, high yield, short, good lodging resistance, medium test weight and groat percentage. Ivory seed. Susceptible to crown rust and to smut and tolerant to red leaf. Selected at N.D. AES. Released in 2001. Because of smut susceptibility, planting only treated seed is recommended.

**Leonard** – Medium-late maturity, high yield, medium height, fair lodging resistance, medium 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.

**Milton** – Medium-late maturity, medium yield, medium height, good lodging resistance, medium test weight and groat percentage. Yellow seed. Modest resistance to crown rust, resistant to smut, susceptible to red leaf. Selected at Minn. AES. Released in 1994.

**Moraine** – Early maturity, medium yield, medium height, 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 (94)**

**Morton** – Medium-late maturity, high yield, tall, good lodging resistance, 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, medium yield, tall, fair lodging resistance, high test weight and 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, medium test weight and groat percentage. Yellow seed. Good resistance to crown rust and 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. Resistant to crown rust and smut, susceptible to red leaf. Selected at S.D. AES. Released in 1998.

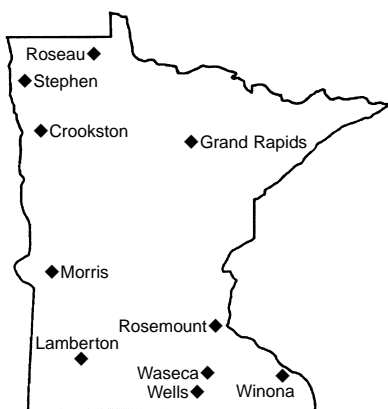
**Rodeo** – Medium-late maturity, high yield, very good lodging resistance, fair test weight, medium groat percentage. Yellow seed. Susceptible to crown rust and smut, tolerant to red leaf. Selected at Ill. AES. Released in 1996. Because of smut susceptibility, planting only treated seed is recommended. **PVP (94)**

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

### ***Oat yield, percent of mean, by location, 2001-2003.***

Variety	Rosemount	Waseca	Lamberton	Morris	Average of 4 locations	Crookston <sup>1</sup>	Grand Rapids <sup>2</sup>	Average of 6 locations
Reeves	93	99	92	82	91	87	71	88
Moraine	102	99	92	90	95	92	91	94
Richard	96	97	98	96	97	107	114	101
Gem	97	95	100	91	96	96	96	96
Wabasha	99	97	92	101	98	100	108	99
Rodeo	102	100	105	114	106	101	114	106
Vista	105	103	102	110	105	102	92	103
Sesqui	102	97	104	107	103	111	92	102
Drumlin	104	105	105	106	105	110	114	108
HiFi	108	104	100	101	103	103	113	105
Leonard	107	107	114	108	109	97	111	107
Morton <sup>2</sup>	104	88	91	97	95	118	121	106
Belle	96	101	97	94	97	93	92	96
Loyal	98	100	103	105	102	94	87	98
Ebeltoft	90	96	95	95	94	107	106	98
Location Mean (Bu/Acre)	74	87	85	99	86	119	105	93
LSD 0.05 (% of Mean)	8.6	8.1	8.1	8.1	4.1	9.8	15.5	4.4

<sup>1</sup> Data from 2001 and 2003 only. <sup>2</sup> Data from 2002 and 2003 only.



**Oat Trial Locations.**

**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.

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

**Wabasha** – Medium maturity, high yield, tall, good lodging resistance, medium test weight, high groat percentage. White seed. Moderately susceptible to crown rust, resistant to smut, tolerant to red leaf. Selected at Minn. AES. Released in 2001. **PVP (pending)**

**Special-Purpose Variety**

**Paul** – Hullless. Medium-late maturity, high yield for hullless variety, tall, very good lodging resistance; hullless, 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)**

**Varieties Not Adequately Tested NEW! Drumlin** – Medium-late maturity; very high yield, fair lodging resistance, medium test weight and groat percentage, yellow seed. Resistant to crown rust and smut, good 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)**

**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

**Oat traits, 2001-2003; disease data 2003 only.**

Variety	Days After Planting To Heading	Height, Inches	Lodging, 1 = Erect 5 = Flat	Test Weight, Lb/Bu	Groat %	Crown Rust <sup>1</sup>		Smut Score <sup>3</sup>	BYDV Score <sup>4</sup>
						Amount Infected	Reaction Type <sup>2</sup>		
Reeves	58	37	2.5	40.8	71.6	10	MR-MS	MS	6
Moraine	59	36	1.7	39.3	71.9	5	R-MR	R	4
Richard	60	37	1.8	38.7	69.5	15	MR-MS	R	6
Gem	61	35	2.1	38.0	68.9	1	R-MR	MR	4
Wabasha	61	35	1.7	38.6	72.0	5	MR-MS	R	6
Rodeo	61	35	1.6	37.9	70.1	5	MR	S	2
Vista	62	37	2.4	39.4	71.0	1	R-MR	R	6
Sesqui	63	34	2.1	39.4	67.6	10	MS	R	4
Drumlin	63	35	2.1	38.3	70.7	1	R	MR	3
HiFi	63	37	1.7	38.7	68.6	10	S-MS	S	3
Leonard	63	35	2.1	37.2	70.6	5	MR-MS	R	2
Morton <sup>5</sup>	64	40	1.4	39.5	70.0	5	R-MR	R	4
Belle	64	35	1.8	39.0	73.8	1	MR-R	MR	7
Loyal	64	39	2.4	38.6	67.2	5	MR-R	MR	6
Ebeltoft	65	33	1.9	38.0	70.0	15	MS-MR	MR	3
Mean	62	36	2.0	38.7	70.2				

<sup>1</sup> 2003 data only from artificially inoculated nursery. <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> 1 = no symptoms and 9 = dead. <sup>5</sup> Agronomic data from 2002 and 2003 only.