



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 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 2.5 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

Belle – Late maturity, high yield, tall, fair 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 the Wis. AES. Released in 1995. Foundation seed available to certified seed producers only under a license/fee collection agreement. **FVF** (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. **FVF**

Gem – Medium-late maturity, high yield, medium height, good lodging resistance, high 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. **FVF** (pending)

Jerry – Medium maturity, medium yield, tall, good lodging resistance, very high test weight, high groat percentage. Ivory seed. Moderately susceptible to crown rust, susceptible to smut, tolerant to red leaf. Selected at N.D. AES. Released in 1994. Because of smut susceptibility, planting only treated seed is recommended. **FVF** (94)

Jim – Early maturity, lower yield, short, good lodging resistance, high test weight and groat percentage. Yellow seed. Small resistance to crown rust, resistant to smut, good tolerance to red leaf. Selected at Minn. AES. Released in 1996.

Jud – Late maturity, high yield, very tall, poor lodging resistance, very high test

Oat yield, percent of nursery average, by location, 2000-2001.

Variety ¹	Rosemount	Lamberton	Morris	Crookston	Grand Rapids	Average of 5 locations	Waseca ²
Moraine ²	103	99	84	95	87	92	112
Chaps	99	90	103	98	107	100	108
Jay	98	96	102	96	90	97	110
Richard	103	110	105	100	103	104	107
Gem	99	110	106	101	94	103	107
Wabasha	99	97	101	106	98	100	95
Rodeo	108	97	118	101	116	108	101
Kildeer	92	97	93	95	115	98	101
Vista	117	111	111	110	96	109	126
Milton	106	96	87	94	102	96	104
Sesqui	108	103	106	113	99	106	107
Youngs	101	98	98	94	95	97	97
Jud	97	104	96	96	123	102	100
Loyal	95	104	104	102	107	103	109
Belle	100	106	90	101	95	98	108
Paul (hullless)	54	62	69	78	54	65	41
Ebeltoft	102	101	110	108	110	107	90
AC Assiniboia	101	105	111	105	101	105	109
Mean, Bu/Acre	75	90	131	107	83	97	103
LSD	11	15	13	12	17	6	13

¹ Order is by maturity, early to late. ² 2001 data only.

weight and groat percentage. White seed. Resistant to crown rust and smut, good tolerance to red leaf. Selected at N.D. AES. Released in 1998.

Loyal – Late maturity, high yield, tall, fair lodging resistance, medium test weight and groat percentage. Ivory seed. Modest resistance to crown rust and smut, susceptible to red leaf. Selected at the S.D. AES. Released in 2000.

Milton – Medium-late maturity, high 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.

Richard – Early maturity, high yield, tall, good lodging resistance, high 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. **PVP (pending)**

Rodeo – Medium-late maturity, high yield, good lodging resistance, fair test weight, high 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 (pending)**

Sesqui – Late maturity, high yield, medium height, good lodging resistance, very high test weight, medium 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.

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

Vista – Medium maturity, high yield, tall, fair lodging resistance, medium 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 (pending)**

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

Relative grain yield of oat varieties in Minnesota in single-year (2001) comparisons at five on-farm locations.

Variety ¹	Yield, Percent of Mean					Average
	Roseau	Stephen	Winona ²	Wells ²	Madison ²	
Moraine	85	107	96	129	87	101
Chaps	101	110	98	111	100	103
Jay	101	94	112	114	106	104
Richard	100	103	104	94	126	101
Gem	97	105	118	122	115	110
Wabasha	94	96	92	104	110	96
Rodeo	88	97	104	124	145	105
Kildeer	74	124	91	114	125	101
Vista	102	131	120	110	97	113
Milton	92	81	104	99	84	93
Sesqui	108	111	112	101	138	109
Youngs	124	68	87	92	58	89
Jud	104	102	91	76	92	93
Loyal	133	103	102	98	93	107
Belle	99	116	104	98	96	103
Paul (hullless)	99	74	67	28	58	66
Ebeltoft	110	97	89	107	116	100
AC Assinibioa	106	126	110	79	95	104
Riser	–	–	–	–	59	–
AC Rebel	83	58	–	–	–	–
Mean, Bu/Acre	72	65	89	58	52	82
LSD (0.05)	26	20	18	24	32	8

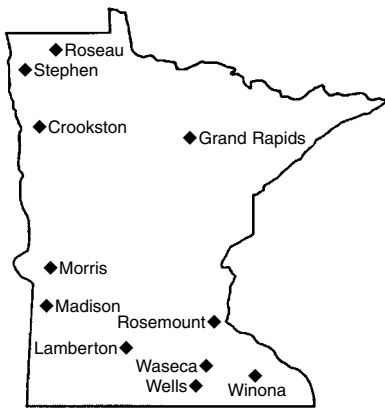
¹ Varieties are listed from earliest to latest heading date.

² Pesticide-free/organic production; Madison was also no-till.

Oat yield, percent of nursery average, by location, 1998-2001.

Variety ¹	Rosemount	Lamberton	Morris	Crookston	Average of	Waseca ²	Grand Rapids ³
					4 locations	3 yrs.	3 yrs.
Chaps	103	96	109	94	101	108	110
Jay	100	86	110	98	99	102	92
Richard	104	103	101	103	102	101	109
Wabasha	107	99	106	111	106	101	103
Gem	100	111	104	100	103	105	99
Rodeo	110	101	116	104	108	101	113
Milton	101	93	95	100	97	96	102
Sesqui	112	100	104	115	107	106	104
Jud	103	109	89	92	97	92	116
Belle	99	102	93	99	97	103	95
Loyal	95	102	95	99	97	105	102
Paul (hullless)	52	72	64	76	67	55	43
Mean, Bu/Acre	77	99	140	118	108	91	92
LSD	8	11	10	10	5	10	13

¹ Order by maturity, early to late. ² Waseca data from 2001, 1999 and 1998 only. ³ Grand Rapids data from 2001, 2000 and 1998 only.



Oat Trial Locations.

Special-Purpose Varieties

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. **FVP (94)**

Varieties Not Adequately Tested

AC Assiniboia – Late maturity, high yield, medium height, very good lodging

resistance, high test weight and groat percentage. Good resistance to crown rust and smut and tolerance to red leaf. Almost brown seed. Selected by Cereal Research Centre, Agriculture and Agri Food Canada in Winnipeg. Released in 1995.

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

Kildeer – Medium maturity, high yield, short, fair lodging resistance, medium test weight and groat percentage. Ivory seed. Moderately susceptible to crown rust, susceptible 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. **FVP (pending)**

Moraine – Early maturity, lower 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. **FVP (pending)**

Youngs – Medium maturity, high yield, tall, good lodging resistance, medium test weight and groat percentage. White seed. Good resistance to crown rust, susceptible to smut and red leaf. Selected at N.D. AES. Released in 1999. Because of smut susceptibility, planting only treated seed is recommended.

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, 2000-2001; disease data 2001 only.

Variety	Days After Planting To Heading	Height, Inches	Lodging, 1 = Erect 5 = Flat	Test Weight, Lb/Bu	Groat %	Crown Rust		Smut Score ²	BYDV Score ³
						Amount Infected	Reaction Type ¹		
Moraine	58	40	1.9	39	71	5	MR-MS	R	4.0
Chaps	59	39	2.2	38	68	20	MS-S	S	3.5
Jay	59	35	1.6	38	68	5	S	MS	4.0
Richard	59	43	2.0	39	70	5	MR-MS	MR	4.0
Gem	60	41	2.5	38	69	<1	S	MR	3.5
Wabasha	60	41	2.1	38	71	<1	MS-S	R	4.0
Rodeo	60	40	1.9	37	70	5	MS-s	S	4.5
Kildeer	61	37	2.4	39	71	10	MR-MS	S	4.5
Vista	61	43	3.0	39	71	<1	MS	R	4.5
Milton	61	37	1.6	38	69	<1	MS	MR	7.5
Sesqui	62	40	2.5	39	67	<1	S	R	3.0
Youngs	63	44	2.1	38	70	<1	MS	R	6.0
Jud	64	46	3.3	39	70	5	MS-S	R	4.0
Loyal	64	45	3.3	39	68	<1	MS-S	MR	6.5
Belle	64	40	2.3	39	73	<1	MS	MR	4.5
Paul (hulless)	65	43	2.5	43	93	<1	S	R	6.0
Ebeltoft	65	38	2.5	39	71	<1	MS-S	R	3.0
AC Assiniboia	65	42	1.9	39	74	<1	HR	R	2.0
Mean	62	41	2.3	39	71				

¹ HR = highly resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible. ² R = resistant, MR = moderately resistant, SM = moderately susceptible and S = susceptible. ³ 1 = no symptoms and 9 = dead.