



## Oat



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. Overall yield averages were up at most locations in 2013. The St Paul and Crookston locations each had

nursery averages 40 bu/acre greater in 2013 compared to the 3-year average. Adequate moisture during the entire growing season possibly offset later location planting dates.

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. Three varieties, Deon, Badger and Newburg are less likely to suffer severe damage than the other 10 varieties in the table.

Treated seed should be used for smut-susceptible varieties. Varieties susceptible to Barley Yellow Dwarf Virus (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; variety

ies with lodging scores above 2.0 for three-year data 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. It is defined as percentage of groat in proportion to the whole seed on a weight basis.

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 2013. The 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.

### Disease data in a single year, 2013.

Variety	Crown Rust (Buckthorn Nursery) Amount <sup>1</sup>	Crown Rust (Buckthorn Nursery) Reaction Type <sup>2</sup>	Smut Score <sup>3</sup>	BYDV Score <sup>4</sup>
Badger	40	MR-MS	R	5.5
Colt	40	MS-S	R	6
Deon	5	MR-S	R	4
Esker	50	S	R	3
Excel	60	S	S	2
Horsepower	80	S	MS	2.5
Jim	80	S	R	--
Newburg	30	MS-S	MS	7
Rockford	60	S	MS	2.5
Saber	60	S	S	2.5
Shelby427	60	MR-S	R	3.5
Souris	50	MR-S	R	3
Tack	60	S	S	1.5

<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 with 1 = no symptoms, 9 = dead, inoculated nursery at Urbana, IL



LSD numbers beneath the yield columns indicate whether the difference between yields is due to genetics or to other factors, such as variations in the environment. If yield difference between two entries equals or exceeds the LSD value the higher yielding entry probably was superior in yield. A difference less than the LSD value probably is due to environmental factors.

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### Oat yield, (percent of mean) off-station locations, 2013 only.

Variety	Stephen	Roseau
Badger	89	97
Colt	82	76
Deon	116	113
Esker	103	91
Excel	102	101
Horsepower	107	109
Jim	87	90
Newburg	111	114
Rockford	108	115
Saber	106	85
Shelby427	93	93
Souris	109	115
Tack	90	92
Location mean (bu/acre)	180	164
LSD 0.05 (%)	7.2	9.8

### 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 yield, percent of mean, by location, 2011-13.

Variety	St Paul		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	114	106	109	92	106	86	78	79	84	87	98	90
Colt	78	84	90	93	89	88	67	86	71	80	79	86
Deon	113	112	103	110	103	100	113	112	116	110	110	109
Esker	116	115	89	97	107	106	92	99	115	108	106	105
Excel	93	100	99	102	125	114	100	105	97	100	102	104
Horsepower	102	95	96	97	108	101	105	108	103	103	103	101
Jim	87	—	92	—	84	—	75	—	95	—	88	—
Newburg	95	—	107	—	112	—	118	—	105	—	106	—
Rockford	78	88	97	91	96	94	96	106	100	100	93	96
Saber	111	111	101	102	116	104	89	100	103	98	105	103
Shelby427	95	105	98	94	121	102	98	98	90	92	100	98
Souris	62	80	90	96	100	103	100	97	96	105	89	97
Tack	88	93	127	106	100	86	90	88	99	89	100	92
Location Mean (bu/acre)	135	94	100	86	118	103	87	107	153	113	118	101
LSD 0.05 (% of mean)	17.6	11.1	24.2	14.1	17.0	10.6	14.2	6.8	17.1	11.4	8.2	4.8

### Oat traits, 2011-13.

Variety	PVP Status	Origin <sup>1</sup>	Days After Planting To Heading		Height (inches)		Lodging Score 1 = Erect, 5 = Flat		Test Weight (Lb/Bu)		Groats %	
			1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year	1-Year	3-Year
Badger	PVP (94)	WI	58	59	31	31	2.3	2.5	39.8	39.1	72.4	68.5
Colt	PVP (94)	SD	57	59	34	34	2.4	2.2	41.0	41.7	72.5	72.3
Deon	PVP (94) (pending)	MN	66	66	39	38	1.8	1.8	41.0	40.3	72.5	71.3
Esker	PVP (94)	WI	59	61	35	35	1.4	1.6	38.6	39.1	71.9	71.6
Excel	PVP (94)	Purdue	61	62	35	35	2.2	2.1	38.4	38.5	70.1	69.5
Horsepower	PVP (94) (pending)	SD	60	61	32	32	2.2	2.0	40.2	40.4	71.7	71.3
Jim	PVP (94) (pending)	MN	58	—	35	—	2.1	—	39.0	—	72.6	—
Newburg	PVP (94)	ND	63	—	42	—	2.5	—	40.0	—	71.5	—
Rockford	PVP (94)	ND	65	66	39	39	1.6	1.7	39.2	40.1	71.0	71.6
Saber	PVP (94)	IL	59	60	35	34	1.5	1.7	39.4	40.2	74.0	73.5
Shelby427	PVP (94)	SD	58	61	38	37	2.2	1.9	42.4	42.5	73.3	72.6
Souris	PVP (94)	ND	63	64	33	34	2.2	1.8	37.2	40.0	69.8	71.6
Tack	PVP (94)	IL	61	62	34	33	1.7	1.8	39.9	41.7	72.5	72.5
Average			62	63	37	35	2.0	2.0	39.6	39.9	72.3	71.7

<sup>1</sup>Agricultural experiment stations of IL = Illinois, MN = Minnesota, ND = North Dakota, SD = South Dakota and WI = Wisconsin.