



Crop Science Report

RESEARCH/EXTENSION

Winter Oats for Oregon

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The purpose of this publication is to describe commonly grown winter oats and to provide agronomic and yield data to aid growers in variety selection. Agronomic data is presented in tables 1 and 2. Yield data is presented in table 3. The following should be considered when selecting a variety:

Intended use. Oats are used as animal feed, for cover crop and as human food. Some varieties are better suited for specific end uses than others. Amity is the preferred food-type winter oat. Amity, Kenoat and Walken can all be used as feed oats. Grey winter is generally grown as a seed stock to be used for cover crops and forage, but also has some feed potential.

Yield potential. High yield is the bottom line in any production system. Yield potential varies from variety to variety and for a variety from one area and from one year to another. Yield potential is a genetic trait that is moderated by other factors such as disease and stress tolerance. To evaluate the yield potential of a variety, review data from test sites with an environment similar to that in your area. Where possible, compare performance over several years as a single year's data is often misleading. Yield testing of winter oats has been sporadic. What information is available for Western Oregon is presented in table 3.

Table 4 gives yield and agronomic data ranges and averages for eight varieties and lines grown over two years (1964-65 harvests) at Pendleton, OR. This is the only winter oat data for Eastern Oregon available at the time. It is provided as background information only. The varieties included in the trial are no longer grown, hence specific variety data is not given.

Height. Winter oats as a group are susceptible to lodging. Lodging reduces both grain yield and grain quality. As soil fertility levels increase, stiffer strawed, more lodging resistant varieties must be used and careful attention must be paid to timing of fertilizer application.

Disease resistance. Barley yellow dwarf virus (BYDV) is the most widespread disease of oats in Oregon. None of the adapted varieties carry adequate resistance to BYDV. Smut can also lead to yield reductions; however, smut is generally not a problem if seed treatments are used and are applied properly. Crown rust has been observed in some lodged fields, but generally has not been of economic significance.

Maturity. Winter oats as a group are generally very late maturing. Differences do exist among varieties. If late season moisture stress is a problem in your area, choose one of the shorter season varieties.

Winter hardiness. Winter oats are the least hardy of the winter cereals. Production is generally limited to areas south of the 40th parallel except for regions with Mediterranean-type climates such as western Oregon. Winter survival in these areas is generally good. Winter-hardiness trials have been conducted at the Moro Experiment Station in the past. Over

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the five year period 1967-71, survival of Grey Winter, Walken and Compact winter oats was 100% three of the five years and approximately 5% the other two. It would appear that currently available winter oats can tolerate winter minimum temperatures of 10-15°F without snow cover. Minimums below this level are likely to cause damage unless snow cover is present. With adequate snow cover temperatures as low as minus 22°F have not caused damage to stands in past trials. Compact and Walken oats are less winter hardy than Grey Winter. Kenoat has not been tested for winter hardiness in Oregon, but in Kentucky, its state of origin, it is reported to have a greater level of winter hardiness than Grey Winter, Walken and Compact oats.

Varieties

AMITY is a high yielding, white kerneled, late maturing oat released by OSU in 1972. Winter hardiness is fair. The cultivar is tall with adequate lodging resistance. Test weights have been lighter than those of other varieties. Amity is the preferred food-type winter oat in Oregon. Foundation seed is available.

COMPACT. Compact is a red-grey winter oat released by the University of Kentucky in 1968. It is a mid season, short statured, stiff strawed variety with good test weights. Yields have been less than those of Walken.

CRATER. Crater is an improved grey winter oat released by OSU in 1956. Yield is similar to or better than Grey Winter while height is reduced, lodging resistance improved, and heading earlier. Test weights have been lower than those for Grey Winter. Foundation seed should be available once again in 1991.

GREY WINTER. Grey Winter is a common grey oat released in the early 1900's. Winter hardiness and yield are good. Grey Winter is very tall but has fair lodging resistance. Feed and food use are limited. Only common seed is available as breeder seed stocks are not known.

KENOAT. Kenoat is a red-grey winter oat released by Kentucky in 1981. Height and maturity are substantially reduced in comparison to Amity, Crater and Grey Winter. Winter hardiness is very good. Yield is similar to Walken as is height. Lodging resistance is less than that of Walken.

WALKEN. Walken is a yellow-red winter oat released by the University of Kentucky in 1970. It is a late-season, medium height variety with good lodging resistance. Yields have been superior to most other winter oat varieties.

Table 1. -- Agronomic data for winter oats

Variety	Year released	State	Winter ¹ hardiness	Maturity ²	Height ³	Lodging ¹	Test ¹ Wgt	Kernel ⁴ color	Seed available locally
Amity	1972	OR	4	L	MT	6	5	W	Yes
Compact	1968	KY	4	ML	S	6	6	RG	No
Crater	1956	OR	5	ML	T	5	5	G	Soon
Grey Winter	1900	??	5	L	VT	4	7	G	Yes
Kenoat	1981	KY	6	M	M	5	6	RG	Yes
Walken	1970	KY	4	L	M	6	7	YR	Yes

1 Scale of 1 to 10; 1=poor, 10=excellent

2 Maturity; M=midseason, ML=midseason to late; L=late

3 Height; M=medium; MT=midtall; S=short; T=tall; VT=very tall

4 W=white; R=red; G=grey; Y=yellow

Table 2. -- Agronomic data for winter oats grown in Western Oregon

Variety	1967-71		1986	
	lb/bu	Height (in)	lb/bu	Heading date ¹
Amity	37.2	57	38.4	155
Compact	--	--	39.8	149
Crater	35.4	60	--	--
Grey Winter	36.0	66	37.9	153
Kenoat	--	--	40.3	149
Walken	--	--	41.1	154

¹Julian heading date -- June 1 = 151

Table 3. -- Yields (lb/A) of winter oats grown in Western Oregon

Variety	1967-71	1981	1986
Amity	3619	3423	4745
Compact	--	--	4610
Crater	3568	--	--
Grey Winter	2768	--	3968
Kenoat	--	--	4269
Walken	--	3558	4692
Average	3318	3490	4457
PLSD (5%)	--	--	499
CV	--	--	7

Table 4. -- Yield, test weight, heading date, plant height, and protein ranges and averages for winter oat varieties and lines grown in Pendleton, OR, for two crop years (1964-65).

	Yield (lb/A)	Test weight (lb/bu)	Heading date ¹	Height (in)	Protein %
Range	1782-3000	38.2-42.2	148-154	27-38	13.9-19.1
Average	2484	40.1	151	32	16.6

¹Julian heading date - June 1 = 151

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