



Crop Science Report

RESEARCH/EXTENSION

WINTER BARLEYS FOR OREGON

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INTRODUCTION

Interest in growing barley has been spurred by the announced provisions of the 1985 Farm Program and by higher, stable market prices for rough grains. The purpose of this publication is to provide information needed in selecting winter barley varieties for 1984-85 plantings.

Barley varieties are evaluated annually at several sites across Oregon. This publication summarizes results of these trials over recent years. Not all varieties have been tested at all locations, therefore, data tables are incomplete. Brief variety descriptions are provided as well as a table summarizing general agronomic traits of the most commonly grown varieties. It is impossible to make specific variety recommendations due to the diversity of growing environments in Oregon; however, an effort has been made to point out both the strengths and weaknesses of each variety.

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When selecting a variety, the following should be considered.

1. **Height.** Barleys as a group are more susceptible to lodging than other cereal grains. As soil fertility levels increase, stiffer strawed, lodging resistant varieties must be used. Lodging reduces both grain yield and grain quality. Height is also a consideration where wheel line irrigation is used. A short-statured variety will allow line pipe to move overhead even at crop maturity.

2. **Disease resistance.** Barley yellow dwarf virus is the most wide spread disease of barley in Oregon. None of the adapted varieties carry resistance to BYDV. Leaf rust and smut can also lead to yield reductions. Differences in levels of resistance to these diseases exists among common barley varieties (Table 1). Smut is generally not a problem if seed treatments are used and are properly applied. Scald, a fungal disease, is of no economic importance even on susceptible varieties in many parts of the state but can be a problem in the Willamette Valley and under irrigation in areas of high elevation.

3. **Maturity.** Barleys differ greatly in relative maturity. As a group, barleys have the shortest life cycle of the common cereal grains. Choose a variety with a maturity matching your climate and cropping needs.

4. **Intended Use.** Barley varieties are classified either as feed or malting types. Feed types generally have a higher protein content than malting types. Malt type variety designation does not guarantee that a given crop will meet malting requirements. Grain for malt must be bright, plump, and have a proper protein level. Malt grade barleys are difficult to grow consistently in most Oregon environments.

VARIETIES

Boyer

Boyer is a medium height, mid-season, feed grain variety released by Washington State University (WSU) in 1975. Grain test weight is adequate. Boyer is resistant to lodging and has good winterhardiness. The spike is mid-dense and kernels are white. Boyer is best adapted to high yielding environments.

Hesk

Hesk is a medium height, medium to mid-late, shatter resistant feed barley released in 1980 by Oregon State University (OSU). It is resistant to lodging and has adequate test weight. Hesk is well-adapted for growing in the higher yielding areas of eastern Oregon, averaging 5 percent higher yield than Boyer.

Hudson

Hudson is a medium tall, early maturing feed grain variety released by Cornell University, New York, in 1951. Grain test weights are heavy. Plants

are winterhardy, but are moderately susceptible to lodging. The spike is dense and short and kernels are white or occasionally light blue.

Kamiak

Kamiak is a medium tall, early maturing, feed grain variety released by WSU in 1971. It has good test weight, average lodging resistance, and adequate winterhardiness. Kamiak spikes are dense and kernels are light blue. Kamiak generally outyields both Hudson and Luther east of the Cascades.

Luther

Luther is a medium height, late maturing feed grain variety developed through use of a chemical mutagen at Washington State University. Its grain test weight is average and winterhardiness is good. Spikes are dense and kernels are blue. Acreage of Luther is small as newer varieties have greater yield potential. Luther was released in 1966.

Mal

Mal is a medium late, mid-height, stiff strawed feed barley released in 1980 by OSU. It produces grain with average test weight and good lodging resistance. Mal is well-adapted in Union, Wallowa, and Baker counties and is especially well suited for the flood irrigated areas of Malheur County.

Schuyler

Schuyler is a medium short, medium maturity, feed grain variety released by Cornell in 1968. Its grain test weight is good, kernels are small (rolling is sometimes difficult), and winterhardiness is excellent. Lodging resistance is only poor to fair. The spike is mid-dense and medium long; kernels are white. Schuyler is adapted to higher yielding environments.

Scio

Scio is a medium short, mid-season, feed grain variety released in 1981. It is similar to Boyer in maturity and about three inches shorter than Boyer. It is very stiff-strawed and well-adapted to high rainfall areas and irrigated areas where severe winters are not a problem. The spike of Scio is mid-dense and the kernels have a white aleurone. Scio was developed at OSU.

Steptoe

Steptoe is a medium height, early, spring feed grain variety released in 1973 by WSU. Grain test weight is quite heavy and yields are especially good in high yielding environments. Steptoe is susceptible to lodging. It is tolerant of cold and may be fall-seeded in areas where winter killing is not a serious problem. Spikes are lax and mid-long; kernels are white.

Wintermalt

Wintermalt is a medium height, early mid-season, 6-rowed, semi-rough awned, winter malting barley with only fair lodging resistance developed at Cornell. Winterhardiness is good, however, the variety has shown rapid fall growth and can smother if sown too early. Test weight is equivalent to that of Schuyler.

TABLE 1. AGRONOMIC CHARACTERISTICS FOR WINTER BARLEYS

Released		Agronomic Characteristics							Disease Reaction		Adaptation		
Yr	St	Type	Wintr Hard	Head Date	Hgt	Lodg	Test Wgt.	Awn	Scald	Smut	Rainfall <14"	>14"	Irr
BOYER	1975 WA	6F	F	M	M	MR	4	R	MS	MR	P	G	G
HESK	1980 OR	6F	F	M-L	M	MR	4	R	MS	S	P	G	G
HUDSON	1951 NY	6F	G	E-M	MT-T	MS	7	R	MR	MR	G	P	P
KAMIAK	1971 WA	6F	G	E	MT	I	6	R	MR	MR	G	P	P
LUTHER	1966 WA	6F	F	L	MS	MS	4	R	MS	MR	F	G	F
MAL	1980 OR	6F	F	M-L	M	MR	4	R	MR	MR	P	G	G
SCHUYLER	1969 NY	6F	G-E	M-L	MS	MS	6	R	MR	--	P	G	G
SCIO	1981 OR	6F	F	M	MS	VR	5	SR	MS	--	P	G	G
STEPTOE	1973 WA	6F	F	E-M	M	MS	7	R	MS	--	G	G	P
WINTERMALT	1982 NY	6M	G	E-M	MS	MS	5	SR	S	MR	G	F	F

- 1 6F=six-row feed barley, 6M=six-row malting barley
- 2 P=poor, F=fair, G=good, E=excellent
- 3 E=early, M=midseason, L=late
- 4 S=short, MS=midshort, M=medium, MT=midtall, T=tall
- 5 MS=moderately susceptible, I=intermediate,
MR=moderately resistant, R=resistant, -- reaction unknown
- 6 Scale of 1 to 10 with 5 being average
- 7 R=rough, SR=semi-rough
- 8 A spring barley with a moderate level of winter hardiness

Table 2. Winter Barley Yields at Eight Locations Throughout Oregon. (1978-1983 average).

	Dryland (<14")			Dryland (>14")			Irrigated	
	Condon	Heppner	Moro	Corvallis	LaGrande b/A	Pendleton	Hermiston	Ontario
BOYER	--	--	--	4629	4978	5737	5538	6240
HESK	2299	2766	3726	4095	5009	5716	5685	6288
HUDSON	1927	2063	2823	3347	--	--	--	--
KAMIAK	2170	2344	3153	3723	--	--	--	--
LUTHER	--	--	--	3877	--	--	--	--
MAL	--	--	--	4396	4898	5806	5340	6336
SCHUYLER	--	--	--	3482	4420	5497	4598	--
SCIO	2255	3034	3538	4612	4942	6311	5708	--
STEPTOE (fall-seeded)	2908	2509	2907	--	4020	4832	4227	--
WINTERMALT	1934	2511	3117	2958	4187	5382	4689	--