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Spring Grain Varieties for 1999



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For additional copies of this publication, write:

Russ Karow
Extension agronomist (cereals)
Department of Crop and Soil Science
Oregon State University
107 Crop Science Building
Corvallis, OR 97331-3002
541-737-5857
e-mail: Russell.S.Karow@orst.edu

Spring Grain Varieties for 1999

Russ Karow, Ernie Marx, Karen Morrow, Mylen Bohle, Randy Dovel, Eric Eldredge, Pat Hayes, Steve James, Jim Peterson, Gary Reed, Clint Shock, Dick Smiley¹

This publication describes spring wheats, barleys, oats, and triticales commonly grown in Oregon and provides, when available, yield and agronomic data to aid in variety selection. The wheat, barley, and triticale data presented in this publication were generated through a statewide variety testing program. This program was initiated in 1992 with funding and support dollars provided by the Oregon State University Extension Service, Oregon Agricultural Experiment Station, Oregon Wheat Commission, and Oregon Grains Commission. The program is centrally coordinated by Russ Karow and Ernie Marx and involves research cooperators at seven experiment stations across Oregon. Grower cooperators make small plot testing possible at three sites. Research sites, site coordinators, and grower cooperators for 1998 are listed below.

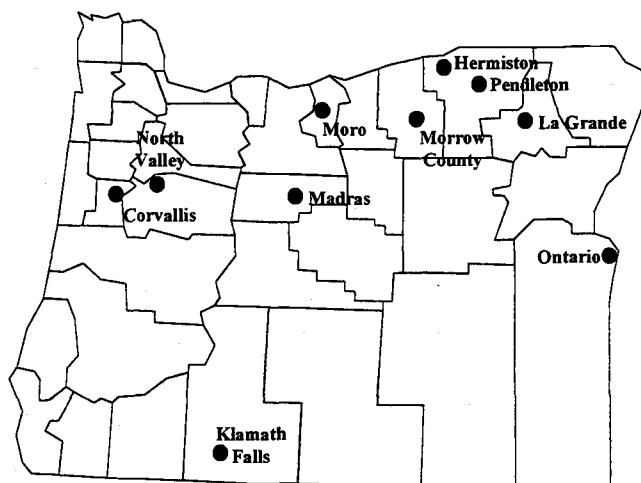
Site	Coordinator/Cooperator
Corvallis	Karow/Marx
Hermiston	Morrow/Smiley/Reed
Klamath	Dovel
LaGrande	Morrow/Smiley
	Grower: John Cuthbert
Madras	James/Bohle
Moro	Morrow/Smiley/Jacobsen
Morrow Co.	Morrow/Smiley
	Grower: Charlie Anderson
North Valley	Karow/ Marx
	Grower: Carl Haugerud
Ontario	Shock/ Eldredge
Pendleton	Morrow/Smiley

¹Prepared by: Russ Karow, Extension agronomist (cereals), and Ernie Marx, faculty research assistant, Dept. of Crop and Soil Science, Oregon State University, Corvallis. Contributors: Karen Morrow, former research technician, Columbia Basin Ag. Research Center, Pendleton; Mylen Bohle, Extension agent, Crook County, Prineville; Randy Dovel, associate professor of agronomy, Klamath Experiment Station, Klamath Falls; Eric Eldredge, research assistant, Malheur Experiment Station, Ontario; Pat Hayes, barley breeder, Dept. of Crop and Soil Science; Steve James, senior faculty research assistant, Central Oregon Agricultural Research Center, Madras; Jim Peterson, wheat breeder, Dept. of Crop and Soil Science; Gary Reed, superintendent, Hermiston Agricultural Research and Extension Center, Hermiston; Clint Shock, superintendent, Malheur Experiment Station, Ontario; and Dick Smiley, superintendent and plant pathologist, Columbia Basin Ag. Research Center.

Without the support of these funding organizations and the research and grower cooperators, these data would not be available. Please be sure to thank these groups and people for their contributions if you find this information beneficial.

If you have comments about or suggestions for improvement of this publication, please contact Russ Karow, Extension cereals specialist (541-737-5857), or Ernie Marx, faculty research assistant (541-737-5858), Crop Science Bldg., Room 131, Oregon State University, Corvallis, OR, 97331-3002 (FAX: 541-737-1589). Individual site data and data for other years are available on the Cereals Extension homepage at <http://www.css.orst.edu/cereals/>.

We thank Barbara Reed, office specialist in Crop and Soil Science, for her many hours of work in entering data and formatting text and tables. Without her skills, these publications would not exist.



State-wide cereal variety testing program locations and site information

Location	Elev. (ft)	GDD ¹ (@50°F)	Precip. (in)	Type
Corvallis	230	2052	43	Dryland
Heppner (Morrow)	1955	2294	14	Dryland
Hermiston	450	2824	9	Irrigated
Klamath Falls	4100	1973	14	Irrigated
La Grande	2770	1830	14	Irrigated
Madras	2230	1917	10	Irrigated
Moro	1870	1988	11	Dryland
Ontario	2230	2868	10	Irrigated
Pendleton	1490	2278	16	Dryland
Scio (NV)	500	2100	55	Dryland

¹yearly total using a 50°F base temperature

Factors to Consider when Selecting Varieties

While yield often is the key factor in variety selection, other characteristics also can be important. As you look through the data tables in this publication, you will discover that yield performance of recently released varieties is quite often similar. Rarely do we find one variety that consistently outyields all others. This is not surprising, since intensive breeding efforts have improved the yield potential and stability of grains in general. What this means to you is that factors other than yield can receive greater attention as you select varieties to grow on your farm. Consider the following criteria as you think about variety selection.

Height and Lodging. Varieties differ in height and lodging resistance. Though generally correlated, taller varieties do not necessarily have poorer lodging resistance. Lodging reduces grain yield and quality and can significantly increase harvest costs. As soil fertility levels increase, stiffer-strawed varieties should be used. You also should pay careful attention to both timing and rate of fertilizer applications and irrigation, when used.

Disease/Stress Resistance. Diseases can be a major production problem; however, type of disease and disease pressure varies from location to location and from year to year. Select cultivars with resistance or tolerance to the diseases and stresses commonly found in your area. Barley yellow dwarf virus and leaf rust are the most common diseases of spring grains. Russian wheat aphid has devastated spring grain crops, especially late-planted crops, in production areas east of the Cascade Mountains. None of the currently available spring wheats, barleys, or triticals has resistance to Russian wheat aphid, but oats are immune. Gaucho seed treatment insecticide shows promise for aphid suppression. Barley stripe rust is a newer disease of barley and can dramatically reduce yield if infestations occur early in the growing season. To date, this disease has been of economic significance only in the Klamath Basin but was found throughout the state in 1998. Resistant varieties are now available (see Table 3) but seed stocks are limited. If you are growing a susceptible variety, Baytan seed treatment and foliar fungicides may be useful in areas where the disease is prevalent. Consult your county office of the OSU Extension Service. Crown rust of oat was a major problem in late-planted fields in western Oregon in 1998. This was the first time in decades that economically significant levels of crown rust were present. None of the commonly grown varieties has resistance. Drummond, a variety bred in New Zealand that is being grown in the Valley, carries crown rust resistance genes but we do not yet have data to show whether these genes are effective against Valley races.

Maturity. As a group, barleys mature earlier than other grains; oats later. However, varieties differing in rate of maturity exist within each grain type. Early-maturing varieties may avoid yield and quality reductions caused by heat or drought in late summer. Later-maturing varieties may yield more when moderate temperatures and favorable moisture conditions persist into late summer; however, stem rust and other diseases favored by warm weather may become a problem. Choose varieties with a maturity that matches your environment and cropping needs. Where moisture is not limiting, oats tend to fare better than the other grains in very late seedings.

Intended Use. Barley varieties are classified either as feed or malting types. Feed types generally have a higher protein content than malting types. Those listed as malting types have been approved by the American Malting Barley Association (AMBA). Oats are used as animal feed, for cover crop, and as human food. Some varieties are better suited for specific end uses than others. Otana, Monida, Border, and Drummond are preferred food-type oats. Most oat varieties can be used for forage. Soft white wheats, both common and club, winter and spring, have occupied more than 95 percent of Oregon's wheat acreage in recent years. Hard red wheats most often are grown in irrigated areas, but spring dryland production is increasing. Triticals are grown for forage and feed grain use.

Grain Quality. Test weight (bushel weight) is a price-determining factor in the marketplace. Choose varieties with good test weight records. All Pacific Northwest (PNW)-released varieties meet minimum quality standards established by PNW breeders, but suitability for different end use applications can vary. Premiums have been paid for low-protein soft white wheat in recent years. Varieties differ in genetic protein percent potential. As a rule, spring grains have higher protein levels than winter grains. This is likely due to environmental rather than genetic causes.

Yield Potential. Yield potential varies from variety to variety and, for a given variety, from one area and from one year to another. Yield potential is a genetic trait but 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 can be misleading.

Variety Descriptions

The following descriptions are designed to provide key information about commonly grown varieties. Material for these descriptions was drawn from the tables in this publication, Certified Seed Buyers Guides distributed by Washington State Crop Improvement Association, and variety release descriptions.

New Varieties

JEFFERSON (IDO462) is a high-yielding hard red spring released by the University of Idaho in 1998. It has shown above-average yield and test weight performance across locations. Yields have equaled or surpassed those of soft whites in many environments. Protein levels have been similar to slightly below those of other commonly grown hard reds. It is taller than other commonly grown hard reds and appears to be slightly more prone to lodging.

ML455 is a hard white developed by Fossum Cereals. It has only been tested on a limited basis but will be grown across locations in 1999. It is a mid to late-season variety with good yield potential. It appears to have great promise as a noodle wheat due to its flour color. Pro-Mar is planning to offer contracts in 2000. Contact Pro-Mar at 1-888-840-3777 for more information.

ORCA is a 2-row feed barley released by Oregon State University in 1998. It is resistant to barley stripe rust. It has exhibited average yield potential and above-average test weight across environments. It appears to be best suited to higher-elevation, cooler-seasoned or irrigated environments.

SCARLET (WA7802) is a high-yielding, superior quality hard red spring for use in the semi-arid production regions of the PNW. Scarlet was released by Washington State University in 1998. Yields have equaled or surpassed those of soft whites in many environments. It is taller than other commonly grown hard reds and appears to be slightly more prone to lodging. Protein levels have been similar to slightly below those of other commonly grown hard reds.

TANGO (SR58-4) is a 6-row, stripe rust resistant feed barley released by Oregon State University in 1999. Tango is a doubled haploid variety derived from an Orca-sib x Steptoe cross with Steptoe as the recurrent. In essence it is Steptoe with stripe resistance, smooth awns instead of rough, and no dormancy. Yields have been similar to those of Steptoe.

WINSOME (OR4870453) is a white-chaffed, awned, hard white spring to be released by Oregon State University in 2000. Yields have been similar to ID0377S. It is late maturing and has lodging resistant, stiff straw. Winsome has shown superior performance in Asian noodle products.

Wheats

Agronomic characteristics, disease ratings, and yield data for wheats are presented in written or tabular form. Table contents are:

Agronomic ratings	Table 1
Disease ratings	Table 2
1998 heading, height, and lodging	Table 5
1998 yield data	Table 6
1998 yield as percent	Table 7
1997 yield data	Table 8
1996-98 yield data	Table 9
1998 test weight data	Table 11
1998 protein data	Table 12

Club Wheats

CALORWA is a spring club wheat. It was released by California, Oregon, and Washington in 1994. Yields, quality, and seed characteristics are marginal. Calorwa was released simply to give club growers a variety to use in overseeding damaged winter club wheat fields. Seed supplies are limited.

Common Soft Whites

ALPOWA is a white-chaffed, awned, soft white released by Washington State University in 1993. It was intended as a replacement for Penawawa, but both varieties are being grown. Alpowa has slightly higher yield and test weight than Penawawa and better stripe rust resistance.

CENTENNIAL was released in 1990 by the University of Idaho. It matures earlier than Penawawa or Alpowa and is slightly taller. Centennial has excellent yield potential across environments but is known to thresh hard. This can be a problem given current dockage discounts.

DIRKWIN is a white-chaffed, awnless, semi-dwarf released by the University of Idaho in 1978. It commonly is used as a forage wheat. Dirkwin is resistant to prevalent races of stripe rust but is susceptible to a common race of leaf rust. Test weight is lower than that of other soft white spring varieties.

PENAWAWA is a white-chaffed, awned, semi-dwarf released by Washington State University in 1985.

Penawawa has been the dominant spring wheat variety in Oregon and is still competitive with newer varieties.

Alpowa was released as a replacement for Penawawa.

WAWAWAI was released by Washington State University in 1994 as a replacement for Wakanz. Both varieties have good Hessian fly resistance. In Oregon testing, Wawawai has had slightly lower yield but significantly better test weights than Wakanz.

WHITEBIRD is a white-chaffed, awnless, semi-dwarf released by the University of Idaho in 1996. It is intended as a Penawawa replacement, but Oregon data suggest similar performance at best.

Hard Whites

IDO377S is a hard white released in 1996 under an exclusive license to Pro-Mar, a growers' cooperative. The cooperative controls seed stock, planted acreage, and harvested grain. Pro-Mar is preserving the identity of individual grain lots and marketing to niche domestic and international markets. For more information about Pro-Mar, call 1-888-840-3777.

KLASIC is a white-chaffed, awned, short-statured, hard white spring wheat released by Northrup King in 1982. Production is centered in California. Test weights have been excellent. Yield potential is excellent, but performance has been erratic and quality sometimes poor.

Hard Reds

WESTBRED 936 was released by Western Plant Breeders in 1992. It is the dominant hard red spring variety in Oregon. Yield potential and shatter resistance are superior to those of earlier WPB varieties. It is susceptible to leaf rust and Hessian fly.

YECORA ROJO is a white-chaffed, awned, semi-dwarf released by California in 1975. It is short and matures early. Yield potential is lower than that of the Westbred materials, but performance has been good across environments. It is resistant to Hessian fly. It is the most popular hard red spring in the Klamath Basin.

Durums

WESTBRED 881 is a spring durum released by Western Plant Breeders in 1984. Yields are typically lower than other spring wheats. Some acreage has been grown under contract in the Pendleton area.

Barleys

Agronomic characteristics, disease ratings, and yield data for barleys are presented in written or tabular form. Table contents are:

Agronomic ratings	Table 3
1998 heading, height, and lodging	Table 5
1998 yield data	Table 6
1998 yield as percent	Table 7
1997 yield data	Table 8
1996-98 yield data	Table 10
1998 test weight data	Table 11
1998 protein data	Table 12

Malt Types

CHINOOK is a 2-row malt barley released by Montana State University in 1995. It has a moderate level of barley stripe rust resistance. It is later maturing, as are many of the 2-row malts, and slightly taller than commonly grown feed barleys.

CREST is a moderately stiff-strawed, 2-row malt barley released by WSU in 1992. It is a mid to late-maturing, medium-height variety. It appears to have some tolerance to barley stripe rust.

GALENA is a 2-row malt released by Coors Malting in 1993. It is one of Coors' principal malt varieties at this time and is grown under contract in Idaho and other western states. It has excellent test weights and lodging resistance, but is late maturing.

HARRINGTON is a 2-row malt released by the University of Saskatchewan in 1986. It appears to be the best dryland malt variety available at this time. Great Western Malting has purchased some Harrington on the open market.

Feed Types

BARONESE is a 2-row feed barley released by Western Plant Breeders in 1992. It has exhibited excellent yield potential and above-average test weights across locations. It is later maturing than Steptoe.

GUS is a 6-row feed barley released by Western Plant Breeders in 1986. It is a short-statured variety used under wheel-lines and in other irrigated production. Lodging resistance is excellent.

IDAGOLD is a 2-row feed barley released by Coors Malting in 1996. It is short, stiff strawed, and has good test weight. It is very late maturing.

STEPTOE is a 6-row feed barley released by WSU in 1973. It has been the dominant spring barley in Oregon for nearly 2 decades. It is extremely resilient and adapted to all production environments. It is susceptible to lodging in high-production environments and generally has lower test weights and protein levels. It appears to have some tolerance to barley stripe rust.

Oats

Agronomic characteristics, disease ratings, and yield data for oats are presented in written or tabular form. Table contents are:

Agronomic ratings	Table 4
1994 Corvallis data	Table 13
1996-98 Klamath Falls data	Table 13
1993-94, 1996 Pullman data	Table 13

AJAY is a short-statured, lodging-resistant line with excellent yield potential under irrigated conditions. It was released by the University of Idaho/USDA-ARS in 1989. It has light yellow seed and good test weight.

CAYUSE is a yellow-hulled oat released by WSU in 1966. It is the most popular cultivar in the PNW at this time. It is early maturing, short in stature, and has good lodging resistance. It has fair tolerance to barley yellow dwarf virus (BYDV).

DRUMMOND is a medium height, high-yielding oat that has exhibited superior milling quality in some years. It is a Plant Variety Protected variety developed in Australia with U.S. rights held by Oregon Seed and Grain. Certified seed stocks are being developed, but seed supply is limited at this time. Drummond appears to have crown rust resistance.

KANOTA is a red oat (*Avena byzantina*) released in Kansas during the 1920s. It is grown for hay. It is similar in maturity to Cayuse. Kanota is taller than most grain cultivars and has finer stems. Grain yields generally are low.

MONIDA is a white-hulled oat released by the University of Idaho and USDA-Agricultural Research Service in 1985. It is the progeny of an Otana/Cayuse cross. It is mid to late-season, similar in height to Otana, and has a test weight intermediate to that of Otana and Cayuse. It has good milling characteristics. Lodging resistance is good.

MONTEZUMA is a red hay oat (*Avena byzantina*) released by California in 1969. It is early maturing and short statured. Lodging resistance is good.

OGLE is a yellow-hulled oat released by Illinois in 1983. It has excellent tolerance to BYDV and resistance to oat crown rust. It is a mid-tall, early-maturing cultivar. Test weight and lodging resistance are good.

OTANA is a white-hulled oat released by Montana State University in 1976. It is tall and somewhat susceptible to lodging. Otana consistently has a better test weight than most other PNW cultivars and is a preferred milling oat.

PAUL is a hulless oat released by North Dakota State University in 1993. It is tall. Hulless oats are thought to be beneficial in some feed uses (swine, poultry); however, varieties released to date have had low yields, even if lack of hull is considered.

RIO GRANDE is a tan-hulled oat bred by USDA-ARS scientists in Aberdeen, Idaho. It was released in 1994. It has test weights superior to Cayuse and many other currently grown varieties, and above-average yield potential. Preliminary milling tests show that Rio Grande de-hulls poorly. This may limit its food-use potential.

SWAN is a tan-hulled oat primarily grown for hay. It was developed in western Australia and introduced into California in 1970. It is very early maturing and is similar in height to Cayuse.

Triticales - see wheat tables

TRICAL 2700 was released by Resource Seeds in 1993. It is a facultative variety usually planted in the spring. It is tall and awned, intended for use as both grain and forage. Lodging resistance is excellent. Yields have been good across environments. Seed is available through Round Butte Seeds in Central Oregon (541-546-5222).



Table 1. — Agronomic data for soft white, hard white, and hard red spring wheat and triticale varieties.

Variety	Release date	Origin ¹	Height ²	Head type	Maturity ³	Lodging ⁴
<i>Soft white club</i>						
Calorwa	1994	WA	S-M	Awned	E	R
<i>Soft white common</i>						
Alpowa	1993	WA	M-T	Awned	M	R
Centennial	1990	ID	M	Awned	E-M	R
Dirkwin	1978	ID	M	Awnless	E-M	R
Penawawa	1985	WA	M	Awned	M	R
Pomerelle	1996	ID	M	Awned	M-L	R
Skagit	1997	P-FC	M	Awned	M	R
Treasure	1986	ID	M	Awned	L	MR
Wawawai	1994	WA	M-T	Awned	M	R
Wakanz	1988	WA	M	Awned	L	MR
Westbred Sprite	1989	P-WPB	M	Awned	M	R
Westbred Vanna	1992	P-WPB	M	Awned	M	R
Whitebird	1996	ID	M	Awned	M	R
<i>Hard white</i>						
ID0377S	1995	ID	M	Awned	E-M	MR
Klasic	1982	P-NK	S	Awned	E	R
ML455	1998	P-FC	M	Awned	M-L	MR
Winsome	2000	OR	M	Awned	M-L	R
World Seeds 1	1972	P-WS	T	Awned	L	MS
<i>Hard red</i>						
Iona	1999	ID	T	Awned	E-M	MS
Jefferson	1998	ID	M	Awned	E-M	MR
McKay	1981	ID	M	Awned	E-M	MR
Scarlet	1998	WA	M-T	Awned	M	MR
Spillman	1989	WA	M	Awned	M-L	MR
Westbred 926	1987	P-WPB	M	Awned	E	R
Westbred 936	1992	P-WPB	M	Awned	E-M	R
Westbred Express	1990	P-WPB	M	Awned	M	R
Westbred Nomad	1988	P-WPB	M	Awned	M	R
Yecora Rojo	1975	CA	S	Awned	E	R
<i>Durum wheats</i>						
Westbred 881	--	P-WPB	S-M	Awned	E-M	R
<i>Triticales</i>						
Juan	1985	CA	T	Awned	M-L	R
Trical 2700	1993	P-RS	T	Awned	M	R
Trical Victoria	1988	P-RS	M-T	Awned	M	R

¹CA=California, ID=Idaho, OR=Oregon, WA=Washington, P=private (FC=Fossum Cereals, GPS=Great Plains Seeds, NK=Northrup King, RS=Resource Seeds, WPB=Western Plant Breeders, WS=World Seeds)

²M=medium, S=short, T=tall

³E=early, M=midseason, L=late

⁴R=resistant, MR=moderately resistant, MS=moderately susceptible

Table 2. — Disease ratings of soft white, hard white, and hard red spring wheat and triticale varieties.

Variety	Rust			Powdery mildew	Black chaff	Black point	Hessian fly
	Stripe	Leaf	Stem				
<i>Soft white club</i>							
Calorwa	MR	R	R	MR	--	--	S
<i>Soft white common</i>							
Alpowa	MR	MR	MS	--	--	--	S
Centennial	MR	MS	R	--	--	--	S
Dirkwin	MR	MS	S	MR	S	MS	S
Penawawa	MR	MR	MS	S	MS	MS	S
Pomerelle	R	MS	R	--	--	--	--
Treasure	R	MS	R	S	MS	MS	S
Wawawai	MR	MR	R	R	--	--	R
Wakanz	MR	MR	S	MS	--	--	R
Westbred Sprite	MR	MR	MS	R	--	--	S
Westbred Vanna	MR	R	MS	R	--	--	S
Whitebird	R	MR	MR	--	--	--	--
<i>Hard white</i>							
IDO377S	R	MR	--	S	--	--	S
Klasic	MR	R	R	--	--	--	S
World Seeds 1	--	--	--	--	--	--	--
<i>Hard red</i>							
Bronze Chief	MS	MS	MS	MR	--	--	S
Copper	MR	MR	MR	MS	MR	MR	--
Jefferson	R	MS	--	--	--	--	MR
Kodiak	MS	MS	MS	MR	--	--	--
McKay	R	R	MR	MR	MR	MS	--
Scarlet	MR	R	--	MR	--	--	S
Spillman	R	R	R	R	S	--	S
Westbred 926	R	R	R	R	--	--	R
Westbred 936	R	MS	R	--	--	--	MS
Westbred Express	R	R	R	R	--	--	S
Westbred Nomad	R	MR	--	R	--	--	S
Yecora Rojo	MS	S	R	R	--	--	R
<i>Durum wheats</i>							
Westbred 881	S	MR	MR	MR	--	MR	--
<i>Triticale</i>							
Juan	R	--	--	--	--	--	--
Trical 2700	R	--	--	--	--	--	--
Trical Victoria	R	MS	T	R	--	--	--

R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible, T=tolerant, VS=very susceptible, -- = unknown

Table 3. — Agronomic data for spring barleys.

Variety	Release date	Origin ¹	Head type	Plant height ²	Straw strength	Heading date ³
<i>Malt types</i>						
Chinook	1995	MT	2-row	M-T	Mod.-stiff	M-L
Crest	1992	WA	2-row	M	Mod.-stiff	M-L
Crystal	1989	ID	2-row	M	Stiff	M-L
Excel	1990	MN	6-row	M	Mod.-stiff	M
Galena	1993	P-Coors Brewing	2-row	S	Stiff	L
Harrington	1986	SK	2-row	M	Stiff	M
Morex	1978	MN	6-row	M-T	Mod.-stiff	E-M
Russell	1985	ID	6-row	M	Stiff	E-M
Stander	1993	MN	6-row	M-T	Mod.-stiff	M
<i>Feed types</i>						
Baronesse	1992	P-WPB	2-row	M	Mod.-stiff	M
Columbia	1979	P-Germains	6-row	M	Stiff	M
Colter	1991	ID	6-row	M	Stiff	E-M
Gallatin	1986	MT	2-row	M	Mod.-stiff	M
Gustoe	1983	P-WPB	6-row	S	Stiff	M
Gus	1976	P-WPB	6-row	S	Stiff	M
Idagold	1996	P-Coors Brewing	2-row	S	Stiff	L
Lindy	1983	P-Cenex	6-row	M	Mod.-stiff	M
Lud	1975	P-Cenex	6-row	T	Stiff	L
Maranna	1993	OR	6-row	S	Stiff	M-L
Medallion	1991	P-WPB	6-row	M	Mod.-stiff	M
Menuet	1980	P-Cenex	6-row	M	Stiff	M
Orca	1998	OR	2-row	M	Stiff	E
Payette	1993	ID	6-row	S	Stiff	M-L
Steptoe	1973	WA	6-row	M	Mod-stiff	E
<i>Hooded types</i>						
Belford	1943	WA	6-row	M-T	Weak	M
Horsford	1880	MT	6-row	M-T	Weak	M
Washford	1996	WA	6-row	M-T	Mod.-stiff	M
<i>Hulless types</i>						
Bear	1996	WA	6-row	M	Moderate	L
Waxbar	1990	P-WPB	6-row	T	Weak	L

¹ID=Idaho, MN=Minnesota, MT=Montana, OR=Oregon, P=private company release, SK=Univ. of Saskatchewan,

WA=Washington, WPB=Western Plant Breeders

²S=short, M=medium, T=tall

³E=early, M=midseason, L=late

Table 4. — Agronomic characteristics of spring oats.

Variety	Release date	Origin ¹	Species ²	Hull color ³	Maturity ⁴	Height ⁵
Ajay	1991	ID	<i>A. sativa</i>	LY	L	S
Appaloosa	1978	WA	<i>A. sativa</i>	Y	M	M
Border	1982	WY	<i>A. sativa</i>	W	M	M
Calibre	1983	CN	<i>A. sativa</i>	Y	L	T
Cayuse	1966	WA	<i>A. sativa</i>	Y	E	M
Drummond	1994?	Astrla	<i>A. sativa</i>	T	M	S
Kanota	1916	KN	<i>A. byzantina</i>	R	E	M
Minimax	1990	P-NWPB	<i>A. sativa</i>	T	L	VS
Monida	1985	ID	<i>A. sativa</i>	W	M-L	M-T
Montezuma	1969	CA	<i>A. byzantina</i>	R	VE	M
Ogle	1983	IL	<i>A. sativa</i>	Y	M	M
Otana	1976	MT	<i>A. sativa</i>	W	M	T
Park	1953	ID	<i>A. sativa</i>	W	M	M-T
Paul	1993	ND	<i>A. sativa</i>	hulless	E-M	M-T
Pennuda	1987	PN	<i>A. sativa</i>	hulless	M	M-T
Rio Grande	1994	ID	<i>A. sativa</i>	T	E	S-M
Swan	1970	CA	<i>A. sativa</i>	T	VE	S

¹Astrla=Australia, CA=California, CN=Agriculture Canada, ID=Idaho, IL=Illinois, KN=Kansas, MT=Montana, ND=North Dakota, NWPB=Northwest Plant Breeders, OR=Oregon, P=private company release, PN=Pennsylvania, SK=Univ. of Saskatchewan, WA=Washington, WY=Wyoming

² Genus = *Avena*

³ LY=Light yellow, R=red, T=tan, W=white, Y=yellow

⁴ VE=very early, E=early, M=midseason, L=late

⁵ VS=very short, S=short, M=mid-height, T=tall, VT=very tall

Table 5. — 1998 statewide variety testing spring grain Julian heading dates, heights, and lodging across locations in Oregon.

Variety/line*	Market class**	Corvallis Madras Ontario			North Valley Ontario				Madras Ontario		
		Corvallis	Madras	Ontario	Corvallis	Hermiston	Madras	Valley	Ontario	Madras	Ontario
<i>Spring wheats and triticales</i>		Heading date (Day of year)			Plant height (inches)				Lodging		
Alpowa	SW	169	177	163	32	30	40	29	43	53	0
Alpowa (no Gaucho)	SW	169	177	162	34	29	43	29	43	30	0
IDO377S	HW	167	177	162	33	31	38	29	43	83	33
IDO505	SW	170	178	162	33	28	40	27	42	80	3
IDO506	SW	168	177	161	35	32	41	26	43	63	3
IDO523	HW	169	179	161	30	28	37	27	38	23	0
IDO533	HW	171	178	163	31	29	37	26	39	53	0
Jefferson (IDO462)	HR	165	176	155	32	29	39	28	40	77	7
OR3900362	HR	167	177	161	32	28	37	27	40	70	0
OR4870255	HW	165	172	151	33	29	40	28	41	73	0
OR4920307	HW	171	178	163	31	29	39	28	40	33	0
OR942845	SW	170	179	162	33	29	40	30	41	50	0
Penawawa	SW	166	176	161	29	29	40	26	40	70	0
Pomerelle	SW	171	179	163	30	30	37	28	34	73	0
Scarlet (WA7802)	HR	166	175	159	34	32	43	30	44	73	3
WA7850	SW	170	179	163	34	31	39	30	39	90	37
WPB 936	HR	165	174	153	27	27	36	23	37	17	0
WPB BZ 987-331	HR	162	172	152	30	31	41	27	42	33	0
WPB BZ 992-108	SW	169	175	162	32	29	40	28	42	83	3
Wawawai	SW	168	176	163	33	31	44	33	47	87	13
Whitebird	SW	170	178	163	31	30	42	27	42	23	0
Winsome (OR4870453)	HW	172	178	163	30	30	37	28	38	57	0
Yecora Rojo	HR	162	172	150	22	25	31	19	32	10	0
WPB 881	Durum	—	—	—	—	25	—	—	—	—	—
WPB YU 894-15	Durum	—	—	—	—	27	—	—	—	—	—
ML107-455	HW	173	—	163	32	30	—	—	39	—	10
ML042-115A	SW	168	—	—	31	28	—	—	—	—	—
ML043-142A	SW	168	—	—	33	—	—	—	—	—	—
ML057-32A	SW	—	—	—	—	29	—	—	—	—	—
SDM50-30	SW	—	—	162	—	—	—	—	40	—	3
Skagit	SW	168	—	—	31	—	—	—	—	—	—
Sunstar Promise	SW	—	—	162	—	—	—	—	41	—	0
M94-4393	Triticale	—	171	—	—	—	50	—	—	0	—
Cayuse	oat	179	—	—	33	—	—	30	—	—	—
Croa 35	oat	197	—	—	25	—	—	22	—	—	—
Drummond	oat	177	—	—	28	—	—	26	—	—	—
Average		170	176	160	31	29	40	28	40	54	4
PLSD (5%)		1	2	2	3	3	2	3	2	34	19
PLSD (10%)		1	1	—	3	2	2	3	—	28	—
CV		0	1	—	6	6	4	7	—	38	—
P-value		0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00	—

Table 5. — continued

Variety/line	Market class	Market class			North					Market class	
		Corvallis	Madras	Ontario	Corvallis	Hermiston	Madras	Valley	Ontario	Madras	Ontario
<i>Spring barleys</i>		Heading date (Day of year)			Plant height (inches)					Lodging	
Bancroft (78AB10274)	2RM	176	177	163	31	27	39	23	50	77	77
BZ 594-19	2RF	182	175	163	30	24	40	20	48	30	67
Baronesse	2RF	182	176	163	28	23	36	25	45	87	60
Chinook	2RM	178	173	157	32	28	40	22	50	60	80
Gallatin	2RF	172	175	160	31	26	38	25	50	73	67
H3860224	2RF	176	175	163	33	27	39	23	47	53	87
MT920073	2RF	174	174	160	29	26	33	20	48	80	60
Orca	2RF/M	167	166	152	30	29	42	25	49	60	67
Steptoe	6RF	168	171	157	31	25	40	24	—	93	93
Tango	6RF	167	167	151	31	27	41	26	48	100	73
UC958	2RF	163	166	151	19	22	30	17	35	3	57
UC960	2RF	163	—	—	19	—	—	16	—	—	—
C32	2RM	—	175	163	—	22	30	—	38	0	50
Galena	2RM	—	175	164	—	24	35	—	42	3	37
Idagold	2RF	—	176	166	—	22	31	—	40	33	70
BCD 12	2RF/M	—	—	162	—	20	—	—	36	—	10
BCD 22	2RF/M	—	—	164	—	22	—	—	36	—	13
BCD 47	2RF/M	—	—	163	—	21	—	—	37	—	73
Sprinter	6RF	—	—	162	—	—	—	—	45	—	40
Average		172	173	160	29	24	37	22	44	54	60
PLSD (5%)		3	3	4	3	2	3	3	4	34	NS
PLSD (10%)		3	3	—	2	2	3	2	—	28	—
CV		1	1	—	5	5	6	8	—	37	—
P-value		0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00	—

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**SW=soft white, HW=hard white, HR=hard red, 2RM=2 row malt, 2RF=2 row feed, 6RF=6 row feed, F/M= line being considered as a malt type

Table 6 — 1998 statewide variety testing program spring grain yields across 9 locations in Oregon.

Variety/line*	Market class**	Yield (60 lb bu/a; 10% moisture)									8-site***** average	Percent of trial average
		Corvallis	Hermiston	Klamath Falls	LaGrande	Madras	Moro***	North Valley	Ontario****	Pendleton		
<i>Spring wheats, triticales, and oats</i>												
Alpowa	SW	53	36	70	67	81	54	38	53	47	56	96
Alpowa w/o Gaucho	SW	54	36	79	60	103	51	37	56	39	57	98
IDO377S	HW	45	42	84	49	101	50	37	69	44	56	97
IDO505	SW	47	45	91	58	109	52	38	71	51	61	105
IDO506	SW	58	46	98	58	115	51	36	58	57	65	111
IDO523	HW	54	49	90	56	115	46	39	54	43	61	105
IDO533	HW	55	49	78	54	113	51	39	63	47	61	104
Jefferson (IDO462)	HR	66	41	80	58	97	57	45	66	60	63	108
OR3900362	HR	56	43	69	58	111	54	36	57	47	59	101
OR4870255	HW	56	38	84	58	102	44	40	54	40	58	99
OR4920307	HW	59	39	77	53	112	49	43	42	46	60	102
OR942845	SW	51	47	75	55	106	44	39	47	44	58	99
Penawawa	SW	36	46	89	54	97	53	35	57	43	57	97
Pomerelle	SW	47	46	83	44	105	46	41	48	44	57	97
Scarlet (WA7802)	HR	60	38	88	63	95	50	40	59	54	61	104
WA7850	SW	60	44	76	53	100	58	46	73	60	62	106
WPB 936	HR	45	24	72	55	111	45	33	54	54	55	94
WPB BZ 897-331	HR	57	23	89	47	105	45	32	69	44	55	94
WPB BZ 992-108	SW	37	44	65	50	104	56	41	63	43	55	94
Wawawai	SW	48	42	68	50	86	51	47	55	49	55	94
Whitebird	SW	45	41	84	48	107	43	36	61	41	56	95
Winsome (OR4870453)	HW	50	45	80	52	112	47	36	52	42	58	99
Yecora Rojo	HR	35	21	64	70	101	41	30	34	53	52	89
WPB 881	Durum	—	20	—	48	—	39	—	—	54	—	—
WPB YU 894-15	Durum	—	28	—	52	—	43	—	—	56	—	—
ML107-455	HW	59	38	—	—	—	—	—	61	—	—	—
Centennial	SW	—	—	60	—	—	—	—	—	—	—	—
ML042-115A	SW	58	42	—	—	—	—	—	—	—	—	—
ML043-142A	SW	55	—	—	—	—	—	—	—	—	—	—
ML057-32A	SW	—	51	—	—	—	—	—	—	—	—	—
SDM50-30	SW	—	—	—	—	—	—	—	58	—	—	—
Skagit	SW	54	—	—	—	—	—	—	—	—	—	—
Sunstar Promise	SW	—	—	—	—	—	—	—	63	—	—	—
M94-4393	Triticale	—	—	—	—	103	—	—	—	—	—	—
Cayuse	oat	54	—	—	—	—	—	53	—	—	—	—
Croa 35	oat	50	—	—	—	—	—	51	—	—	—	—
Drummond	oat	61	—	—	—	—	—	56	—	—	—	—
Average		52	39	79	55	104	49	41	57	48	58	—
PLSD (5%)		14	10	15	11	16	9	7	12	9	7	—
PLSD (10%)		12	8	13	9	13	8	6	10	8	6	—
CV		17	16	12	12	9	12	11	13	12	12	—
P-value		0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	—

Table 6 — continued

Variety/line*	Market class**	Corvallis	Hermiston	Klamath Falls	LaGrande	Madras	Moro***	North Valley	Ontario****	Pendleton	7-site***** average	Percent of trial average
<i>Spring barleys</i>		Yield (lb/a; 10% moisture)										
Bancroft (78AB10274)	2RM	4156	3936	4670	4086	3787	—	3019	2522	3894	3935	102
BZ 594-19	2RF	3454	3474	5691	3981	2571	—	2890	3829	4099	3737	96
Baronesse	2RF	4203	4147	4726	4070	4083	—	2877	3278	3414	3932	101
Chinook	2RM	3896	3873	4859	3299	3319	—	2633	1717	3773	3665	95
Gallatin	2RF	3994	3866	4719	3978	3904	—	3085	1906	3511	3865	100
H3860224	2RF	4163	4238	4725	3704	3319	—	3171	2606	3613	3848	99
MT920073	2RF	3854	4243	4748	4319	3804	—	2885	2636	4228	4011	104
Orca	2RF/M	3841	3071	4938	3557	2663	—	3266	3526	4320	3665	95
Steptoe	6RF	2759	3349	4712	3903	3922	—	3077	1765	3946	3667	95
Tango	6RF	3781	3212	4720	3519	4022	—	3236	2545	3572	3723	96
UC958	2RF	3275	3118	4122	3860	6576	—	2645	4081	4072	3953	102
UC960	2RF	3287	—	4161	—	—	—	2745	—	—	—	—
Idagold	2RF	—	3428	4802	—	6760	—	—	2531	—	—	—
C32	2RM	—	3609	5034	—	6799	—	—	3759	—	—	—
Galena	2RM	—	3536	4395	—	6231	—	—	3100	—	—	—
BCD 12	2RF/M	—	3414	3892	3996	—	—	—	3023	4190	—	—
BCD 22	2RF/M	—	3448	4398	4543	—	—	—	1559	4587	—	—
BCD 47	2RF/M	—	3273	4135	4180	—	—	—	3189	4215	—	—
Gus	6RF	—	—	3466	—	—	—	—	—	—	—	—
Gustoe	6RF	—	—	3764	—	—	—	—	—	—	—	—
Nebula	6RF	—	—	4661	—	—	—	—	—	—	—	—
B1202	2RF/M	—	—	4429	—	—	—	—	—	—	—	—
Sprinter	6RF	—	—	—	—	—	—	—	1986	—	—	—
Average		3722	3602	4535	3928	4411	—	2961	2753	3959	3818	—
PLSD (5%)		684	591	697	NS	982	—	NS	1172	541	NS	—
PLSD (10%)		567	492	581	NS	815	—	NS	975	449	NS	—
CV		11	10	9	12	13	—	10	26	8	14	—
P-value		0.01	0.00	0.00	0.16	0.00	—	0.17	0.00	0.00	0.94	—

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**SW=soft white, HW=hard white, HR=hard red, 2RM=2 row malt, 2RF=2 row feed, 6RF=6 row feed, F/M= line being considered as a malt type

***Moro spring barley trials had high variability, making variety comparisons meaningless.

****Ontario trials were damaged by hail storms in June.

*****Does not include Ontario data for wheat and barleys (due to hail damage) nor Moro data for barleys

Table 7 — 1998 statewide spring grain yields across 9 locations in Oregon expressed as percent of trial average.

Variety/line*	Market class**	Yield (percent of trial average)									8-site**** average
		Corvallis	Hermiston	Klamath Falls	LaGrande	Madras	Moro***	North Valley	Ontario****	Pendleton	
<i>Spring wheats, triticales, and oats</i>											
Alpowa	SW	103	93	89	122	78	111	91	93	98	98
Alpowa w/o Gaucho	SW	104	92	101	108	99	105	90	99	82	98
IDO377S	HW	86	108	107	90	97	101	90	121	91	96
IDO505	SW	89	114	115	105	104	106	92	124	107	104
IDO506	SW	111	119	124	106	110	104	88	102	118	110
IDO523	HW	103	125	114	102	110	93	94	94	89	104
IDO533	HW	106	126	98	98	109	104	94	110	97	104
Jefferson (IDO462)	HR	127	105	101	106	93	116	109	116	125	110
OR3900362	HR	108	109	87	106	107	110	87	100	98	101
OR4870255	HW	108	97	107	105	98	90	97	94	83	98
OR4920307	HW	113	99	97	96	108	100	104	74	95	102
OR942845	SW	98	120	94	99	102	91	95	82	92	99
Penawawa	SW	69	119	113	99	93	108	86	100	90	97
Pomerelle	SW	91	117	105	79	101	94	100	85	91	97
Scarlet (WA7802)	HR	115	98	111	114	91	102	96	103	111	105
WA7850	SW	115	112	97	97	97	119	111	128	125	109
WPB 936	HR	87	61	91	99	106	92	80	95	112	91
WPB BZ 897-331	HR	110	58	112	85	101	93	78	122	91	91
WPB BZ 992-108	SW	71	112	82	91	100	113	99	110	90	95
Wawawai	SW	92	108	85	91	83	103	116	96	103	97
Whitebird	SW	87	104	107	87	102	88	87	106	86	94
Winsome (OR4870453)	HW	97	115	101	94	108	95	88	91	87	98
Yecora Rojo	HR	67	54	82	127	97	84	73	60	110	87
WPB 881	Durum	—	51	—	88	—	79	—	—	113	—
WPB YU 894-15	Durum	—	73	—	95	—	88	—	—	116	—
ML107-455	HW	113	97	—	—	—	—	—	107	—	—
Centennial	SW	—	—	76	—	—	—	—	—	—	—
ML042-115A	SW	112	108	—	—	—	—	—	—	—	—
ML043-142A	SW	106	—	—	—	—	—	—	—	—	—
ML057-32A	SW	—	132	—	—	—	—	—	—	—	—
SDM50-30	SW	—	—	—	—	—	—	—	101	—	—
Skagit	SW	104	—	—	—	—	—	—	—	—	—
Sunstar Promise	SW	—	—	—	—	—	—	—	110	—	—
M94-4393	Triticale	—	—	—	—	99	—	—	—	—	—
Cayuse	oat	103	—	—	—	—	—	129	—	—	—
Croa 35	oat	95	—	—	—	—	—	124	—	—	—
Drummond	oat	117	—	—	—	—	—	136	—	—	—
Trial Average (bu/a)		52	39	79	55	104	49	41	57	48	58

Table 7 — continued

Variety/line*	Market class**	Klamath							North Valley	Ontario****	Pendleton	7-site***** average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Moro***					
<i>Spring barleys</i>		Yield (percent of trial average)										
Bancroft (78AB10274)	2RM	112	109	103	104	86	—	102	92	98	102	
BZ 594-19	2RF	93	96	125	101	58	—	98	139	104	97	
Baronesse	2RF	113	115	104	104	93	—	97	119	86	102	
Chinook	2RM	105	108	107	84	75	—	89	62	95	95	
Gallatin	2RF	107	107	104	101	89	—	104	69	89	100	
H3860224	2RF	112	118	104	94	75	—	107	95	91	100	
MT920073	2RF	104	118	105	110	86	—	97	96	107	104	
Orca	2RF/M	103	85	109	91	60	—	110	128	109	95	
Steptoe	6RF	74	93	104	99	89	—	104	64	100	95	
Tango	6RF	102	89	104	90	91	—	109	92	90	96	
UC958	2RF	88	87	91	98	149	—	89	148	103	101	
UC960	2RF	88	—	92	—	—	—	93	—	—	—	
Idagold	2RF	—	95	106	—	153	—	—	92	—	—	
C32	2RM	—	100	111	—	154	—	—	137	—	—	
Galena	2RM	—	98	97	—	141	—	—	113	—	—	
BCD 12	2RF/M	—	95	86	102	—	—	—	110	106	—	
BCD 22	2RF/M	—	96	97	116	—	—	—	57	116	—	
BCD 47	2RF/M	—	91	91	106	—	—	—	116	106	—	
Gus	6RF	—	—	76	—	—	—	—	—	—	—	
Gustoe	6RF	—	—	83	—	—	—	—	—	—	—	
Nebula	6RF	—	—	103	—	—	—	—	—	—	—	
B1202	2RF/M	—	—	98	—	—	—	—	—	—	—	
Sprinter	6RF	—	—	—	—	—	—	—	72	—	—	
Trial Average (lb/a)		3722	3602	4535	3928	4411	—	2961	2753	3959	3734	

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**SW=soft white, HW=hard white, HR=hard red, 2RM=2 row malt, 2RF=2 row feed, 6RF=6 row feed, F/M= line being considered as a malt type

***Moro spring barley trials had high variability, making variety comparisons meaningless.

****Ontario trials were damaged by hail storms in June.

*****Does not include Ontario data for wheat and barleys (due to hail damage) nor Moro data for barleys

Table 8 — 1997 statewide variety testing program spring grain yields across 11 locations in Oregon.

Variety/line*	Market class	Klamath											10-site average**	Percent of trial average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Medford	Moro	Morrow County	North Valley	Ontario	Pendleton		
<i>Spring wheats and triticales</i>		Yield (60 lb bu/a; 10% moisture)												
Alpowa	SW	86	60	98	113	102	93	96	—	39	111	54	85	113
Alpowa no Gaucho	SW	81	55	82	102	88	83	87	—	34	102	47	76	101
Centennial	SW	84	53	79	106	101	85	73	—	33	106	46	76	102
IDO377S	HW	92	50	81	106	96	94	86	—	25	105	62	80	106
IDO488	SW	88	54	82	105	92	84	73	—	30	130	54	79	105
IDO492	HR	72	43	96	92	83	80	71	—	22	98	53	71	95
Jefferson (IDO462)	HR	77	55	78	86	97	86	77	—	27	94	48	73	96
Klasic	HW	61	38	71	84	110	57	52	—	21	103	33	63	84
OR4895181	HW	72	52	89	100	117	95	73	—	22	90	53	76	101
Penawawa	SW	98	49	123	86	105	94	79	—	37	110	63	85	112
Pomerelle	SW	90	54	101	102	123	87	80	—	32	103	58	83	110
Scarlet (WA7802)	HR	78	50	92	90	93	81	68	—	27	90	49	72	95
Treasure	SW	83	43	104	101	110	96	85	—	41	106	52	82	109
Trical-2700	Triticale	72	36	89	95	77	86	70	—	56	82	66	73	97
WPB936	HR	74	45	82	98	120	89	88	—	27	104	45	77	103
Wawawai	SW	86	47	81	94	81	70	72	—	39	96	49	71	95
Whitebird	SW	97	37	93	82	110	97	80	—	24	115	45	78	103
Winsome (OR4870453)	HW	76	57	99	94	111	99	76	—	22	96	49	78	103
Yecora Rojo	HR	74	42	72	86	118	74	54	—	21	93	31	67	88
WPB881	Durum	—	28	—	74	—	—	57	—	—	—	31	—	—
Germaines	HR	66	—	79	—	—	—	—	—	—	—	—	—	—
Skagit	SW	90	—	—	—	—	—	—	—	30	—	—	—	—
Trial Average		82	47	88	95	99	85	75	—	31	102	49	75	—
PLSD (5%)		17	11	17	19	23	10	16	—	5	14	14	8	—
PLSD (10%)		14	9	14	16	19	9	14	—	4	12	12	7	—
CV		13	15	12	12	14	9	13	—	9	8	18	12	—
P-value		0.00	0.00	0.00	0.02	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	—

Table 8 — continued

Variety/line*	Market class	Klamath								Morrow County	North Valley	Ontario	Pendleton	11-site average	Percent of trial average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Medford	Moro							
<i>Spring barleys</i>		Yield (lb/a; 10% moisture)													
Bancroft (78AB10274)	2RM	4689	2618	5284	6633	4612	4090	5242	1643	2624	4572	3921	4175	106	
Baronesse	2RF	5137	2985	5391	5801	5133	4141	6496	3372	2873	5691	4177	4654	118	
Bear	6R hullless	3541	2489	4318	4749	3694	2414	3381	1485	2022	4004	2694	3163	80	
Chinook	2RM	4673	2967	5156	5400	4389	3959	5866	2133	2717	5406	4208	4261	108	
Colter	6RF	1881	1948	3668	8572	5835	3718	5184	1571	1822	6159	3919	4025	102	
Crest	2RM	4659	2197	4952	4836	4715	4217	5452	1597	2883	4363	3861	3976	101	
Gallatin	2RF	4703	2664	5266	5360	4548	4654	4930	1759	2117	5663	3338	4091	104	
Orca	2RF/M	4133	2760	4471	6637	3835	3145	3466	2827	2008	6316	3707	3937	100	
Payette	6RF	2860	2536	4117	8620	5420	3289	4624	1486	1720	5722	3358	3977	101	
Russell	6RM	1826	1973	3718	6740	5040	3515	3639	1508	1267	4927	3488	3422	87	
Steptoe+Baytan	6RF	3163	1608	4605	6333	4967	3401	5536	1866	2104	5674	4130	3944	100	
Steptoe+Vitavax	6RF	3072	2042	4502	6574	5104	3667	6044	2021	2032	5281	4157	4045	103	
UC960	2RF	3844	1863	4645	7792	4278	3115	5770	1365	1999	5728	3632	4003	101	
Washford	6R awnless	2312	2170	—	4833	2889	2509	3571	1311	1989	4625	3204	—	—	
C-22	2RM	—	2970	5285	—	4836	—	—	—	—	6093	—	—	—	
Galena	2RM	—	3800	5226	—	5628	—	—	—	—	6429	—	—	—	
Idagold	2RF	—	2992	5367	—	5432	—	—	—	—	6740	—	—	—	
Moravian 14	2RM	—	—	—	—	—	—	—	—	—	6316	—	—	—	
Average		3564	2505	4515	6349	4727	3559	4943	1853	2155	5539	3700	3946	—	
PLSD (5%)		340	844	1109	1430	813	603	1188	688	652	1581	887	584	—	
PLSD (10%)		283	702	925	1187	676	502	986	571	541	1316	736	489	—	
CV		6	20	15	13	10	12	14	22	18	17	14	18	—	
P-value		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05	0.00	—	

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**Morrow site not included

Table 9. — 1996-98 spring grain yields across 9 locations in Oregon.

Variety/line	Market class	Yield (bu/a; 10% moisture)									All sites average
		Corvallis	Hermiston	Klamath Falls	LaGrande	Madras	Moro	North Valley	Ontario	Pendleton	
1996											
Alpowa with Gaucho	SW	101	83	96	84	75	55	17	112	45	74
Alpowa w/o Gaucho	SW	90	68	92	84	64	54	18	108	39	69
IDO377S	HW	86	81	97	75	86	48	12	104	41	70
Jefferson (IDO462)	HR	—	83	85	65	64	—	—	94	—	—
Penawawa	SW	93	84	98	67	63	54	16	110	39	69
Pomerelle	SW	103	81	107	80	63	44	15	95	43	70
WPB 936	HR	—	72	90	60	62	49	—	—	43	—
Wawawai	SW	94	80	80	61	43	50	8	112	43	63
Whitebird	SW	59	76	98	79	59	52	8	100	39	63
Yecora Rojo	HR	69	73	67	24	63	50	13	106	38	56
1996 trial average yield (bu/a)		85	78	89	67	65	48	13	104	39	65
1997											
Alpowa with Gaucho	SW	86	60	98	113	102	96	39	111	54	84
Alpowa w/o Gaucho	SW	81	55	82	102	88	87	34	102	47	75
IDO377S	HW	92	50	81	106	96	86	25	105	62	78
Jefferson (IDO462)	HR	77	55	78	86	97	77	27	94	48	71
Penawawa	SW	98	49	123	86	105	79	37	110	63	84
Pomerelle	SW	90	54	101	102	123	80	32	103	58	83
WPB 936	HR	74	45	82	98	120	88	27	104	45	76
Wawawai	SW	86	47	81	94	81	72	39	96	49	72
Whitebird	SW	97	37	93	82	110	80	24	115	45	76
Yecora Rojo	HR	74	42	72	86	118	54	21	93	31	66
1997 trial average yield (bu/a)		82	47	88	95	99	75	31	102	49	74
1998											
Alpowa with Gaucho	SW	53	36	70	67	81	54	38	53	47	56
Alpowa w/o Gaucho	SW	54	36	79	60	103	51	37	56	39	57
IDO377S	HW	45	42	84	49	101	50	37	69	44	58
Jefferson (IDO462)	HR	66	41	80	58	97	57	45	66	60	63
Penawawa	SW	36	46	89	54	97	53	35	57	43	57
Pomerelle	SW	47	46	83	44	105	46	41	48	44	56
WPB 936	HR	45	24	72	55	111	45	33	54	54	55
Wawawai	SW	48	42	68	50	86	51	47	55	49	55
Whitebird	SW	45	41	84	48	107	43	36	61	41	56
Yecora Rojo	HR	35	21	64	70	101	41	30	34	53	50
1998 trial average yield (bu/a)		52	39	79	55	104	49	41	57	48	58
1996-1998 average											
Alpowa with Gaucho	SW	80	60	88	88	86	69	31	92	49	71
Alpowa w/o Gaucho	SW	75	53	85	82	85	64	30	89	42	67
IDO377S	HW	74	58	87	77	94	61	24	93	49	69
IDO462(Jefferson)	HR	72	60	81	70	86	67	36	85	54	68
Penawawa	SW	76	60	103	69	88	62	30	92	48	70
Pomerelle	SW	80	60	97	75	97	57	30	82	48	70
WPB 936	HR	60	47	81	71	98	60	30	79	47	64
Wawawai	SW	76	56	76	68	70	57	31	87	47	63
Whitebird	SW	67	51	92	70	92	58	23	92	42	65
Yecora Rojo	HR	59	45	68	60	94	48	21	78	40	57
Average yield 1996-1998 (bu/a)		73	55	85	72	89	57	28	88	45	66
1996-1998 percent of trial average											
Alpowa with Gaucho	SW	110	109	104	122	96	120	109	105	108	109
Alpowa w/o Gaucho	SW	103	96	99	113	95	112	104	101	92	102
IDO377S	HW	101	105	103	106	106	107	86	106	108	103
Jefferson (IDO462)	HR	99	109	95	96	96	117	127	97	119	106
Penawawa	SW	104	109	121	96	99	108	104	105	107	106
Pomerelle	SW	110	110	114	104	108	99	104	94	107	106
WPB 936	HR	82	86	95	98	109	106	104	90	104	97
Wawawai	SW	104	103	89	94	78	100	110	100	103	98
Whitebird	SW	92	93	108	96	103	102	79	105	92	97
Yecora Rojo	HR	82	83	79	83	105	84	75	89	89	85

All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

Table 10. — 1996-98 spring barley yields across 10 locations in Oregon*.

Variety/line	Market class	Yield (lb/a; 10% moisture)										
		Corvallis	Hermiston	Klamath Falls	LaGrande	Madras	Moro	Morrow County	North Valley	Ontario	Pendleton	All sites average
1996												
Baronesse	2RF	3021	5443	4939	4028	4773	3700	1976	—	6683	3523	4232
Step toe	6RF	1941	4526	3794	2774	3941	3777	1661	—	6358	3287	3562
1996 trial average yield (lb/a)		1584	4251	4388	4234	4256	3512	1573	—	5739	2839	3597
1997												
Baronesse	2RF	5137	2985	5391	5801	5133	6496	3372	2873	5691	4177	4706
Step toe	6RF	3072	2042	4502	6574	5104	6044	2021	2032	5281	4157	4083
1997 trial average yield (lb/a)		3564	2505	4515	6349	4727	4943	1853	2155	5539	3700	3985
1998												
Baronesse	2RF	4203	4147	4726	4070	4083	—	—	2877	3278	3414	3850
Step toe	6RF	2759	3349	4712	3903	3922	—	—	3077	1765	3946	3429
1998 trial average yield (lb/a)		3722	3602	4535	3928	4411	—	—	2961	2753	3959	3734
1996-1998 average												
Baronesse	2RF	4121	4191	5019	4633	4663	5098	2674	2875	5217	3705	4220
Step toe	6RF	2591	3306	4336	4417	4322	4911	1841	2555	4468	3796	3654
Average yield 1996-1998 (bu/a)		2957	3453	4479	4837	4465	4228	1713	2558	4677	3499	3687
1996-1998 percent of trial average												
Baronesse	2RF	139	121	112	96	104	121	156	112	112	106	114
Step toe	6RF	88	96	97	91	97	116	107	100	96	108	99

*The small number of varieties that have been grown in the spring barley trials for at least 3 years reflects a change in direction of spring barley breeding programs. Barley stripe rust (BSR) resistance has become a primary focus of breeding programs in the Pacific Northwest. Many BSR-resistant lines have been developed and have been in the statewide trials for 2 years (1997 and 1998). These lines will appear in the 3-year summaries next year, after data for the 1999 trials data are collected.

Table 11 — 1998 statewide variety testing program spring grain test weights across 9 locations in Oregon.

Variety/line*	Market class**	Klamath							North Valley	Ontario****	Pendleton	8-site***** average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Moro***					
<i>Spring wheats, triticales, and oats</i>												
Test weight (lb/bu)												
Alpowa	SW	63.5	62.2	62.4	58.6	62.1	61.5	59.1	58.5	56.6	60.8	
Alpowa w/o Gaucho	SW	63.0	62.2	62.4	57.9	61.9	61.6	58.8	58.2	56.7	60.6	
IDO377S	HW	63.6	63.0	62.1	53.5	62.0	62.1	60.9	58.2	57.1	60.5	
IDO505	SW	63.0	62.3	62.4	55.5	61.6	61.3	60.6	57.5	58.5	60.7	
IDO506	SW	61.4	63.0	62.7	54.4	60.6	59.5	59.8	57.4	57.4	59.9	
IDO523	HW	62.3	63.7	61.1	50.6	61.8	61.4	58.8	58.6	54.2	59.2	
IDO533	HW	62.3	63.0	59.9	50.7	61.8	61.9	59.4	60.8	56.8	59.5	
Jefferson (IDO462)	HR	63.5	63.8	62.0	56.2	62.0	62.3	63.2	59.3	58.7	61.5	
OR3900362	HR	63.2	63.4	61.0	53.2	61.5	62.1	60.7	59.1	56.6	60.2	
OR4870255	HW	64.1	64.0	63.1	55.2	62.1	63.0	62.5	62.6	58.2	61.5	
OR4920307	HW	63.2	61.3	60.9	53.1	62.4	61.2	58.4	58.7	55.4	59.5	
OR942845	SW	63.7	62.9	61.9	54.0	62.2	61.0	60.7	59.1	57.5	60.5	
Penawawa	SW	62.3	61.9	61.5	54.6	60.8	61.4	59.5	60.0	58.0	60.0	
Pomerelle	SW	61.1	62.8	60.8	52.7	59.5	57.3	58.0	46.9	56.0	58.5	
Scarlet (WA7802)	HR	63.9	61.9	62.5	55.8	61.3	61.5	62.6	59.7	58.7	61.0	
WA7850	SW	62.7	62.0	60.4	53.4	60.5	60.3	60.7	58.1	57.8	59.7	
WPB 936	HR	62.2	59.7	59.5	54.4	61.9	62.1	62.6	59.6	56.7	59.9	
WPB BZ 897-331	HR	62.7	58.4	61.1	55.9	60.9	61.1	62.0	60.6	57.3	59.9	
WPB BZ 992-108	SW	62.7	61.9	60.5	52.8	59.9	59.8	59.6	59.1	56.0	59.2	
Wawawai	SW	63.4	63.6	61.7	55.0	61.0	62.0	62.6	58.5	58.0	60.9	
Whitebird	SW	62.7	63.0	62.2	54.1	61.6	60.2	60.4	58.7	57.5	60.2	
Winsome (OR4870453)	HW	62.4	62.5	59.4	50.4	62.2	61.7	56.6	57.6	54.8	58.8	
Yecora Rojo	HR	62.5	61.4	61.9	57.5	61.4	63.7	63.1	63.0	59.9	61.4	
WPB 881	Durum	—	60.0	—	57.6	—	61.7	—	—	59.7	—	
WPB YU 894-15	Durum	—	61.3	—	59.5	—	61.2	—	—	60.4	—	
ML107-455	HW	62.7	61.5	—	—	—	—	—	58.1	—	—	
Centennial	SW	—	—	61.8	—	—	—	—	—	—	—	
ML042-115A	SW	63.9	62.1	—	—	—	—	—	—	—	—	
ML043-142A	SW	63.9	—	—	—	—	—	—	—	—	—	
ML057-32A	SW	—	60.4	—	—	—	—	—	—	—	—	
SDM50-30	SW	—	—	—	—	—	—	—	58.8	—	—	
Skagit	SW	64.2	—	—	—	—	—	—	—	—	—	
Sunstar Promise	SW	—	—	—	—	—	—	—	58.1	—	—	
M94-4393	Trit.	—	—	—	—	58.0	—	—	—	—	—	
Cayuse	oat	37.5	—	—	—	—	—	30.5	—	—	—	
Croa 35	oat	38.5	—	—	—	—	—	36.4	—	—	—	
Drummond	oat	39.6	—	—	—	—	—	35.0	—	—	—	
Average		60.5	62.1	61.5	54.7	61.3	61.3	56.8	58.6	57.4	60.2	
PLSD (5%)		0.7	1.8	1.4	1.5	1.2	0.8	1.2	1.8	2.3	1.2	
PLSD (10%)		0.6	1.5	1.2	1.3	1.0	0.7	1.0	1.5	1.9	1.0	
CV		1	2	1	2	1	1	1	2	2	2	
P-value		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table 11 — continued

Variety/line*	Market class**	Klamath						North Valley	Ontario****	Pendleton	7-site***** average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Moro***				
<i>Spring barleys</i>		Test weight (lb/bu)									
Bancroft (78AB10274)	2RM	53.0	54.6	52.0	50.0	51.8	—	50.9	49.4	49.8	51.7
BZ 594-19	2RF	51.7	56.1	52.5	57.7	50.8	—	51.8	50.1	49.1	52.8
Baronesse	2RF	53.6	56.3	51.4	50.4	50.2	—	51.2	51.8	46.3	51.3
Chinook	2RM	53.5	55.6	53.3	51.8	51.0	—	51.6	50.0	50.4	52.5
Gallatin	2RF	53.4	56.1	52.7	52.5	52.6	—	51.1	49.3	50.8	52.7
H3860224	2RF	55.4	56.6	52.6	50.1	52.6	—	51.9	50.0	48.5	52.5
MT920073	2RF	53.3	55.6	53.8	53.7	50.5	—	52.9	50.5	51.6	53.1
Orca	2RF/M	55.3	55.9	54.1	53.7	50.1	—	54.1	53.5	54.1	53.9
Steptoe	6RF	42.5	52.7	48.1	45.1	46.3	—	50.0	44.1	45.8	47.2
Tango	6RF	48.3	54.2	50.0	46.6	48.7	—	48.6	46.7	48.3	49.2
UC958	2RF	46.1	53.8	46.6	44.0	47.6	—	46.3	43.8	43.8	46.9
UC960	2RF	46.0	—	46.6	—	—	—	45.8	—	—	—
Idagold	2RF	—	56.4	50.8	—	51.3	—	—	44.9	—	—
C32	2RM	—	56.9	52.2	—	52.5	—	—	47.2	—	—
Galena	2RM	—	55.6	52.1	—	51.8	—	—	47.9	—	—
BCD 12	2RF/M	—	55.1	50.8	48.7	—	—	—	48.1	47.6	—
BCD 22	2RF/M	—	56.3	52.6	52.3	—	—	—	50.9	52.2	—
BCD 47	2RF/M	—	55.4	52.6	49.9	—	—	—	45.5	50.6	—
Gus	6RF	—	—	46.3	—	—	—	—	—	—	—
Gustoe	6RF	—	—	45.9	—	—	—	—	—	—	—
Nebula	6RF	—	—	48.1	—	—	—	—	—	—	—
B1202	2RF/M	—	—	50.9	—	—	—	—	—	—	—
Sprinter	6RF	—	—	—	—	—	—	—	43.9	—	—
Average		51.0	55.5	50.7	50.5	50.5	—	50.5	48.2	49.2	51.3
PLSD (5%)		1.3	1.7	0.6	4.8	1.2	—	1.1	4.5	2.5	1.8
PLSD (10%)		1.1	1.4	0.5	4.0	1.0	—	0.9	3.7	2.1	1.5
CV		2	2	1	6	1	—	1	6	3	3
P-value		0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**SW=soft white, HW=hard white, HR=hard red, 2RM=2 row malt, 2RF=2 row feed, 6RF=6 row feed, F/M= line being considered as a malt type

***Moro spring barley trials had high variability, making variety comparisons meaningless.

****Ontario trials were damaged by hail storms in June.

*****Does not include Ontario data for wheat and barleys (due to hail damage) nor Moro data for barleys

Table 12 — 1998 statewide variety testing program spring grain protein across 9 locations in Oregon.

Variety/line*	Market class**	Klamath							North Valley	Ontario***	Pendleton	8-site**** average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Moro***					
<i>Spring wheats, triticales, and oats</i>		Protein (12% moisture)										
Alpowa	SW	10.2	12.1	12.1	13.1	10.3	8.9	11.5	10.0	11.7	11.2	
Alpowa w/o Gaucho	SW	10.3	12.3	12.2	13.4	10.3	9.2	11.5	9.9	11.5	11.3	
IDO377S	HW	11.9	13.5	13.3	15.5	12.4	11.7	12.8	11.4	12.4	12.9	
IDO505	SW	10.0	12.1	11.4	12.9	10.4	9.4	11.3	9.9	10.8	11.0	
IDO506	SW	10.1	12.0	11.7	13.8	10.8	9.8	11.7	11.0	10.7	11.3	
IDO523	HW	11.1	11.9	12.5	15.2	11.1	9.4	12.4	10.7	12.4	12.0	
IDO533	HW	10.9	12.4	12.6	15.3	11.3	9.4	12.4	12.0	11.4	12.0	
Jefferson (IDO462)	HR	12.3	14.4	14.1	15.2	12.8	9.9	13.4	9.8	12.1	13.0	
OR3900362	HR	11.9	13.5	14.3	15.4	12.3	10.1	13.5	11.6	12.1	12.9	
OR4870255	HW	11.7	14.1	14.1	14.4	12.0	10.3	12.5	11.2	11.0	12.5	
OR4920307	HW	10.8	12.1	12.9	14.8	11.4	9.7	12.6	11.5	11.9	12.0	
OR942845	SW	10.5	12.6	12.9	14.8	11.1	10.1	12.5	10.0	12.4	12.1	
Penawawa	SW	10.9	12.0	12.3	13.6	10.0	8.8	11.5	10.3	10.8	11.2	
Pomerelle	SW	9.7	11.3	11.3	14.4	10.1	9.0	11.6	10.2	11.6	11.1	
Scarlet (WA7802)	HR	13.3	15.2	14.4	15.1	13.4	10.4	14.6	12.0	11.9	13.5	
WA7850	SW	10.2	11.5	12.3	14.2	10.4	8.4	11.4	9.3	11.6	11.3	
WPB 936	HR	12.5	17.9	14.8	15.3	12.1	12.2	14.0	12.1	11.9	13.8	
WPB BZ 897-331	HR	10.0	17.6	11.9	14.4	11.8	11.5	15.0	11.3	12.2	13.0	
WPB BZ 992-108	SW	12.8	10.9	15.6	13.3	10.2	8.8	11.9	9.7	10.0	11.7	
Wawawai	SW	11.1	11.7	12.7	13.4	11.3	9.1	11.8	9.9	11.8	11.6	
Whitebird	SW	10.0	11.7	11.5	13.4	10.5	9.2	11.2	9.8	11.5	11.1	
Winsome (OR4870453)	HW	11.3	12.4	13.1	15.5	11.3	9.4	12.9	11.0	12.2	12.3	
Yecora Rojo	HR	13.5	17.0	15.0	15.3	12.2	12.5	15.0	12.0	12.2	14.1	
WPB 881	Durum	—	15.6	—	16.0	—	10.8	—	—	13.0	—	
WPB YU 894-15	Durum	—	15.1	—	15.2	—	12.2	—	—	12.8	—	
ML107-455	HW	11.6	12.2	—	—	—	—	—	10.7	—	—	
Centennial	SW	—	—	14.7	—	—	—	—	—	—	—	
ML042-115A	SW	11.2	12.9	—	—	—	—	—	—	—	—	
ML043-142A	SW	11.3	—	—	—	—	—	—	—	—	—	
ML057-32A	SW	—	11.9	—	—	—	—	—	—	—	—	
SDM50-30	SW	—	—	—	—	—	—	—	9.3	—	—	
Skagit	SW	11.2	—	—	—	—	—	—	—	—	—	
Sunstar Promise	SW	—	—	—	—	—	—	—	9.3	—	—	
M94-4393	Trit.	—	—	—	—	10.7	—	—	—	—	—	
Cayuse	oat	15.3	—	—	—	—	—	14.6	—	—	—	
Croa 35	oat	17.2	—	—	—	—	—	18.4	—	—	—	
Drummond	oat	15.2	—	—	—	—	—	16.1	—	—	—	
Average		11.7	13.2	13.1	14.5	11.3	10.0	12.9	10.6	11.8	12.1	
PLSD (5%)		0.5	0.6	0.8	0.5	0.9	1.5	0.5	0.8	1.2	0.8	
PLSD (10%)		0.4	0.5	0.6	0.5	0.7	1.2	0.4	0.6	1.0	0.7	
CV		2	3	4	2	5	9	2	4	6	7	
P-value		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table 12 — continued

Variety/line*	Market class**	Klamath						North Valley	Ontario***	Pendleton	7-site**** average
		Corvallis	Hermiston	Falls	LaGrande	Madras	Moro***				
<i>Spring barleys</i>		Protein (12% moisture)									
Bancroft (78AB10274)	2RM	10.4	11.3	11.3	13.6	11.4	—	10.1	10.8	9.4	11.1
BZ 594-19	2RF	10.3	9.7	10.7	12.0	10.4	—	9.6	9.6	9.9	10.4
Baronesse	2RF	10.0	10.4	11.1	12.6	10.7	—	9.6	9.1	10.6	10.7
Chinook	2RM	10.5	11.4	11.7	13.9	12.1	—	10.1	10.8	10.2	11.4
Gallatin	2RF	9.9	11.3	11.0	13.3	10.7	—	9.9	10.4	10.0	10.9
H3860224	2RF	11.1	10.8	11.9	13.5	11.4	—	10.0	10.7	9.9	11.2
MT920073	2RF	10.2	11.7	11.4	12.3	12.1	—	10.0	10.5	9.7	11.1
Orca	2RF/M	11.5	12.3	11.7	12.2	11.3	—	10.4	10.4	10.8	11.5
Steptoe	6RF	9.9	10.3	9.8	10.7	9.1	—	9.4	9.1	9.6	9.8
Tango	6RF	10.0	10.6	10.4	11.2	10.1	—	9.6	9.3	10.2	10.3
UC958	2RF	9.9	11.0	11.4	11.1	9.5	—	10.0	9.6	10.0	10.4
UC960	2RF	10.2	—	11.4	—	—	—	10.2	—	—	—
Idagold	2RF	—	10.8	11.8	—	9.0	—	—	10.2	—	—
C32	2RM	—	10.5	11.3	—	9.3	—	—	9.6	—	—
Galena	2RM	—	11.1	11.6	—	9.8	—	—	8.8	—	—
BCD 12	2RF/M	—	11.0	11.7	12.4	—	—	—	9.1	10.1	—
BCD 22	2RF/M	—	11.5	12.0	12.8	—	—	—	9.6	10.0	—
BCD 47	2RF/M	—	11.8	12.4	13.7	—	—	—	10.7	10.3	—
Gus	6RF	—	—	11.1	—	—	—	—	—	—	—
Gustoe	6RF	—	—	10.9	—	—	—	—	—	—	—
Nebula	6RF	—	—	10.7	—	—	—	—	—	—	—
B1202	2RF/M	—	—	12.0	—	—	—	—	—	—	—
Sprinter	6RF	—	—	—	—	—	—	—	9.3	—	—
Average		10.3	11.0	11.3	12.5	10.5	—	9.9	9.8	10.1	10.8
PLSD (5%)		0.4	0.6	0.4	0.8	0.7	—	0.3	NS	NS	0.6
PLSD (10%)		0.3	0.5	0.3	0.6	0.6	—	0.3	1.2	NS	0.5
CV		2	3	2	4	4	—	2	9	6	5
P-value		0.00	0.00	0.00	0.00	0.00	—	0.00	0.08	0.32	0.00

*All seed was treated with fungicide and Gaucho insecticidal seed treatment unless otherwise noted.

**SW=soft white, HW=hard white, HR=hard red, 2RM=2 row malt, 2RF=2 row feed, 6RF=6 row feed, F/M= line being considered as a malt type

***Moro spring barley trials had high variability, making variety comparisons meaningless.

****Ontario trials were damaged by hail storms in June.

*****Does not include Ontario data for wheat and barleys (due to hail damage) nor Moro data for barleys

Table 13.—Western regional spring oat data for Klamath Falls, Corvallis, and Pullman.

Klamath Falls 1995-1997	Yield		2-Year Avg (97-98)		3-Year Avg (96-98)		1998			
	1998	1997	1996	Yield	Rank	Yield	Rank	Test weight	Lodge	Plant height
	(lb/a)	(lb/a)	(lb/a)	(lb/a)		(lb/a)		(lb/bu)	(%)	(in)
Variety/line										
82Ab248	3840	3790	3390	3820	17	3670	15	31.0	0	33
84Ab825	3430	4320	4540	3880	16	4100	2	30.0	0	33
86Ab4582	2830	3980	3280	3410	23	3360	20	29.5	15	45
86Ab664	3020	4940	3730	3980	12	3900	8	29.0	0	43
87Ab4983	3550	4630	2620	4090	7	3600	17	32.5	0	37
87Ab5125	3460	5290	4600	4370	2	4450	1	28.5	0	43
89Ab4088	2760	5640	2700	4200	4	3700	14	34.0	0	35
90Ab1322	3760	3760	3870	3760	19	3800	11	28.0	0	30
91Ab502	3340	4820	3070	4080	8	3740	13	32.5	10	41
AbSP9-2	2680	5430	4120	4060	9	4080	3	27.5	25	45
Ajay	4340	4420	2720	4380	1	3830	10	32.0	0	26
Cayuse	2570	4440	3300	3510	21	3440	18	27.5	0	39
Celsia	2340	5760	3850	4050	10	3980	5	29.0	0	49
Derby	1970	3540	2870	2760	27	2790	23	28.0	10	51
IA H61-3-3	2990	4490	4260	3740	20	3910	7	32.0	0	39
Monida	2660	5670	3700	4170	5	4010	4	28.0	20	35
ND 860416	2370	3230	3730	2800	26	3110	22	32.0	23	43
Ogle	2720	5700	3150	4210	3	3860	9	27.0	3	37
Otana	1960	4310	3860	3140	25	3380	19	29.0	35	47
Powell	3150	4620	3580	3890	14	3780	12	29.5	1	35
Prairie	2750	5010	2150	3880	15	3300	21	31.0	0	33
Rio Grande	3090	4710	3040	3900	13	3610	16	29.0	3	33
Whitestone (ND 870258)	3060	4990	3760	4030	11	3940	6	28.0	10	33
91Ab406	3470	4070	—	3770	18	—	—	29.0	0	31
AbSP 19-9	2870	5350	—	4110	6	—	—	31.5	13	33
CDC Boyer	1970	5020	—	3490	22	—	—	27.5	0	43
CDC Pacer	2270	4390	—	3330	24	—	—	29.0	15	37
95Ab12743	3320	—	—	—	—	—	—	30.0	25	41
ND 910569	2800	—	—	—	—	—	—	32.0	0	45
ND 930122	3090	—	—	—	—	—	—	33.5	0	35
Mean	2950	4680	3470	3810	—	3710	—	29.9	7	38
LSD (5%)	658	NS	NS	871	—	729	—	—	NS	—
CV (%)	19	24	30	23	—	24	—	—	278	—

Variety/line	Corvallis - 1994				Pullman - 1996			1993-94
	Plant height (in)	Julian heading date	Test weight (lb/bu)	Grain yield (lb/a)	Plant height (in)	Test weight (lb/bu)	Grain yield (lb/a)	Grain yield (lb/a)
Ajay	26	164	39.3	4102	26	36.9	4525	3524
Cayuse	33	164	39.5	4609	26	35.3	5274	3612
Celsia	—	—	—	—	33	37.7	5254	—
Derby	40	163	41.1	4328	26	38.1	5155	3239
Monida	37	166	38.3	4723	28	36.1	5380	3677
Newdak	33	157	40.6	4304	29	35.5	4520	3831
Ogle	34	157	39.5	3889	25	35.0	4930	2890
Otana	41	164	40.9	4241	28	38.7	5264	3625
Prairie	—	—	—	—	28	37.3	4552	—
Park	39	166	39.4	4029	28	35.8	4951	3844
Paul (hullless)	39	165	47.1	3173	28	44.4	3646	—
Powell	30	166	38.9	4429	28	34.9	4825	3915
Rio Grande	31	163	40.9	4459	29	36.8	5534	3434
Whitestone	33	164	42.3	4641	29	38.0	4853	—
86Ab1616 (hullless)	31	171	46.1	2969	26	42.8	3566	2120
86Ab664 (prerelease)	37	164	40.3	4382	30	35.3	5123	3646
88Ab3073 (hullless)	28	166	48.5	2812	28	48.0	1895	1728
Trial average	33	164	40.9	4183	28	37.8	4830	3334
PLSD (10%)	2	2	1.4	456	—	0.9	535	575
CV (%)	4	1	2	7	—	2	9	22

Questions of Seed Quality

Seed Quality includes such factors as varietal identity, freedom from weed and other crop contaminants, and the ability of the seed to germinate. State and Federal seed laws require that seed offered for sale be tested and truthfully labeled for these and other quality factors. When evaluating grain for seeding or when buying seed from off-farm sources, ask the following questions.

What is the identity of this seed? Varieties are developed to improve yields through disease resistance and improved agronomic characteristics. Seed Certification is one method of ensuring varietal identity. Is the seed certified? Look for the "Blue Tag," bulk shipping certificate, or Transfer Certificate for Seed Pending Final Certification (be aware that the latter means the seed lot is not yet fully certified). These verify varietal identity. If the seed is uncertified, ask for information on how the seed was produced, what type of seed was used as seed stock, and what guarantee of varietal identity you can expect.

What is the pure seed percentage? Pure seed is the percentage of seed in the bag that is of the crop you are buying. A high percentage of pure seed will give best results. For example, if a seed lot has a 99 pure seed percentage, then from a 100-pound bag of seed you can expect 99 pounds of pure seed of the specified crop.

What is the percentage of other crop seeds? Barley, oats, vetch, and other crop seed can be found in seed lots. The percentage of other crop seed tells you how much of the seed you are buying is of these other crops.

What is the inert matter content of this seed? Sand, stones, dirt, sticks, pods, chaff, ergot bodies, and some broken seeds are all inert matter. These materials do not increase yield. A very low percentage of inert matter is preferable.

What is the weed seed percentage, and what types of weeds are present in this seed lot? This percentage indicates the presence of seeds of plants recognized as weeds present in the seed lot. A zero percentage is best; however, in many states there are allowances for certain types of weeds. There are also weed seeds that are strictly prohibited from being in seed. Remember that many weed seeds are very small, and a low percentage may still mean a high number of weed seeds are present.

What is the germination percentage of this seed?

Percentage of germination is a measure of the number of pure seeds in a lot that produce normal plants under favorable conditions. To be valid, the germination test for a seed lot must have been performed in the past 18 months for seed grown and sold in Oregon. Federal laws require germination tests within 5 months of sale for seed shipped across state lines. For the seed to be properly labeled, the date of test and germination percentage both must be stated. If you buy seed with a low germination, you are paying for dead seed. There are a number of seed labs in Oregon that do seed testing. Most only accept untreated seed for full seed analyses but will take treated seed for germination testing. Seed-borne fungal diseases can result in low germination in untreated seed. Seed treatment may correct this problem.

These are the major questions to ask yourself or to ask a supplier when buying seed. If you have questions about seed laws, contact your local county Extension office, your seed dealer, or the Oregon Department of Agriculture Commodity Inspection Division, Salem, Oregon.



Certified seed is your assurance of varietal purity, high germination, uniform quality, and freedom from noxious weeds. Look for the blue tag or the seed-certification shipping certificate, your guarantee of these qualities. Certified seed does not cost—it pays.

Preliminary lists of current producers of certified seed are available in early summer at local offices of the OSU Extension Service. This information can also be obtained through the Oregon Seed Certification Service Home Page at <http://www.oscs.orst.edu>. Your local Extension office also has information on seed certification procedures and Foundation Seed stocks.

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