Winter Wheat Varieties for 1986

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The purpose of this publication is to describe commonly grown soft white and hard red winter wheat varieties and to provide available yield and agronomic data to aid growers in variety selection. When you select a variety, consider the following criteria:

1. **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 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; a single year's data can be misleading.

2. **Disease/stress resistance.** Diseases are major problems across the state; however, type of disease and disease pressure varies from location to location and from year to year. Select a variety with resistance or tolerance to the diseases and stresses commonly found in your area.

3. **Maturity.** Early-maturing varieties may avoid yield reductions and quality reductions caused by heat and/or drought in midsummer. Later-maturing varieties may yield more when moderate temperatures and favorable moisture conditions persist into midsummer; however, stem rust and other diseases favored by warm weather may become a problem.

4. **Grain quality.** Bushel weight (test weight) is a price-determining factor in the market place. Choose varieties with good test weight records.

Most promising varieties for 1986

Crew is a club wheat variety released by Washington State University (WSU). It is a multiline variety containing ten similar but different wheat lines. Each of these lines has a different resistance to stripe rust--which, as a whole, gives the variety a good level of overall resistance. The variety is midseason in maturity, has a mixture of brown and white chaff colors, and exhibits irregular height. Crew's yield potential in traditional club wheat growing areas is good.

Daws is the most winter-hardy of the soft white wheat varieties adapted to the Pacific Northwest. It is a midseason, medium height, semidwarf. Emergence is only adequate, and the variety should not be planted where emergence from great depth is required.

Dusty is a new variety developed at WSU that has shown promise in yield trials across the Columbia Basin. It is more winter-hardy than Stephens and has good emergence. It is a mid-late-season variety and has resistance to many common diseases. Dusty is susceptible to Cercosporella foot rot. Foundation and registered seed should be available this fall.

Hill 81 is a semidwarf variety released by Oregon State University (OSU) in 1981. It has good emergence and winter-hardiness. It is a midseason variety with greater height than most semidwarfs and is susceptible to lodging when grown under intensive management. Hill 81 has shown tolerance to Septoria and to Cephalosporium stripe.

Lewjain is a late-season semidwarf released by WSU in 1982. Its unique characteristics are its resistance to dwarf bunt and apparent tolerance of Cephalosporium stripe. In general, Lewjain's yield potential is less than that of other recommended varieties. Its late maturity and weaker straw make it poorly suited for some production situations.

Stephens is a high-yielding, widely adapted semidwarf released by OSU in 1977. It currently occupies more than 70% of the wheat acreage in Oregon. Stephens has only a minimal level of winter-hardiness and is susceptible to Cephalosporium stripe. In areas where either of these problems occur frequently, the recommendation is, don't grow large acreages of Stephens, but use other varieties with greater winter-hardiness and Cephalosporium tolerance.

Tres is the newest club wheat variety available to Pacific Northwest growers. Its name means "three," signifying its resistance to three foliar diseases--stripe and leaf rust, and powdery mildew. Tres is one of the ten component lines found in Crew. It appears to have a similar yield potential to Crew but has none of the heterogeneities found in Crew.

Other varieties

Nugaines was one of the first semidwarf soft white wheats available to Pacific Northwest wheat producers. It was released by WSU in 1961. It has excellent emergence and good winter-hardiness and a strong vernalization requirement. It is resistant to lodging and has very good test weight. Nugaines still has a moderate level of resistance to common stripe rust races, but it is very susceptible to leaf rust, foot rot, and Septoria. Its yield potential is less than that of newer varieties.

Yamhill is a standard height, beardless soft white wheat released by OSU in 1969. It has only fair winter-hardiness but has a strong vernalization requirement. Its unique characteristic is its ability to tolerate wet soils better than any other currently available soft white winter wheat variety. It is very susceptible to stripe rust infestation.

Faro is a beardless, brown chaffed club wheat variety released by OSU in 1976. It has good emergence and winter hardiness, is early to midseason, and has adequate test weight. It is susceptible to both stripe rust and leaf rust and will probably need to be sprayed with fungicides to reach its yield potential in club wheat growing areas where stripe rust is a problem.

Jacmar is a privately developed club wheat variety released in 1979. It is similar to Faro in many characteristics but is several inches shorter. It is susceptible to races of stripe rust common in the

club wheat producing areas of Oregon. Fungicide treatment is likely to be needed for the variety to reach its yield potential.

Moro is a standard height, brown chaffed club wheat released by OSU in 1965. It is best adapted to the driest winter wheat-producing areas of eastern Oregon. Moro is susceptible to lodging and leaf rust and is moderately susceptible to stripe rust.

Tyee is a beardless, semidwarf, white chaffed club wheat released by WSU in 1979. It is 2 to 3 inches taller than Faro but still has good lodging resistance. It has good winter-hardiness but only fair seedling vigor. Tyee is susceptible to stripe and leaf rust and to powdery mildew. It has tolerance to Cercosporella foot rot and its yield potential exceeds that of Moro.

Hard red winter wheats

Batum is a white chaffed hard red winter wheat released by WSU in 1985. Batum is a semidwarf with shorter straw than Wanser or Hatton, and good lodging resistance. Emergence and winter-hardiness may be slightly below that of other hard red winter wheats while yield potential is higher. Batum is susceptible to dwarf bunt, Cercosporella foot rot, and snow mold; but it is resistant to stripe rust and has moderate resistance to leaf rust. It has good milling and baking quality, but test weights are only adequate.

Hatton is a bearded hard red winter wheat released by WSU in 1979. It is best adapted to the lower rainfall areas of eastern Oregon, where conditions may be suitable for production of higher-protein grain. Hatton has good test weight and grain quality. It is medium height with good lodging resistance, but is susceptible to lodging when grown under intensive management. Hatton has a higher yield potential than Wanser.

Wanser is a bearded, medium-tall, hard red winter wheat released by WSU in 1965. It has excellent emergence and good winter hardiness. It is about 10 inches taller than most semidwarf wheats and is susceptible to lodging. It matures early and has good test weight. Wanser has moderate resistance to current races of stripe rust.

Table 1.-- Agronomic characteristics for commonly grown winter wheats

Variety	Released Year	State	Emergence index[1]	Winter-hardiness	Maturity	Height[2]	Lodging resistance[3]	Test weight[1]	Chaff color[4]	Head type
Common white										
Daws	1976	WA	4	8	midseason	SD-M	R	6	W	Awned
Dusty	1984	WA	5	5	mid-late	SD-M	MR	7	W	Awned
Hill 81	1981	OR	5	5	midseason	SD-MT	R	7	W	Awned
Lewjain	1982	WA	6	6	late	SD-M	MR	7	W	Awned
Nugaines	1961	WA	5	7	midseason	SD-M	R	8	W	Awned
Sprague	1974	WA	6	7	early-mid	SD-M	MS	7	W-B	Awned
Stephens	1977	OR	5	4	early-mid	SD-M	R	7	W	Awned
Yamhill	1969	OR	7	4	midseason	MT-T	MR	7	W	Awnletted
Club										
Crew	1981	WA	6	5	midseason	SD-MT	MR	6	W-B	Awnless
Faro	1976	OR	6	5	early-mid	SD-MT	R	5	B	Awnless
Jacmar	1978	Pr	5	7	early-mid	SD-M	R	5	B	Awnletted
Moro	1965	OR	8	5	early-mid	MT	MS	5	B	Awnless
Tres	1984	WA	5	5	midseason	SD-M	R	7	W	Awnletted
Tyee	1979	WA	5	6	midseason	SD-MT	R	5	W	Awnless
Hard red										
Batum	1985	WA	5	7	mid-late	SD-SM	R	6	W	Awned
Hatton	1979	WA	6	9	mid-late	MT	MR	8	W	Awned
Wanser	1965	WA	6	9	midseason	M	MS	8	B	Awned
Weston	1978	ID	6	8	early-mid	MT	R	8	-	Awned

1 Scale of 1 to 10, poor to excellent.
2 SD=semidwarf, SM=short-medium, M=medium, MT=medium-tall, T=tall.
3 R=resistant, MR=moderately resistant, MS=moderately susceptible.
4 W=white, B=brown.

Table 2.-- Disease ratings for commonly grown winter wheats

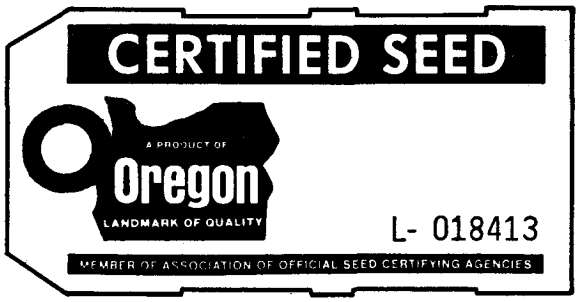
	Rust		Bunt		Flag smut	Cephalo-sporium[2]	Sept-oria	Foot rot[3]	Take all	Snow mold
	Stripe	Leaf	Common	Dwarf						
Common white										
Daws	MR[1]	MS	R	S	MS	MS	MS	MS	S	S
Dusty	MR	MS	R	S	MS	MS	--	S	S	S
Hill 81	MR	MR	R	S	S	MR	MT	S	S	--
Lewjain	R	MS	R	MR	MS	MR	MT	T	S	--
Nugaines	MR	S	R	S	MR	MR	MS	MS	S	S
Sprague[4]	S	S	R	S	S	S	--	S	S	R
Stephens	MR	MS	R	S	MS	S	MS	MR	S	S
Yamhill	MS	MR	S	S	MR	MS	MS	T	S	--
Club										
Crew[5]	MR-S	MR	R	S	MS	S	--	S	S	--
Faro	S	S	MR	S	MS	S	MS	MS	S	--
Jacmar	S	S	MR	MR	MS	MS	MT	T	S	--
Moro	MS	S	MR	R	MR	MR	--	MS	S	--
Tres[6]	MR	MR	MR	S	S	S	--	MS	S	--
Tyee	S	S	MR	S	S	MR	--	T	S	--
Hard red										
Batum	R	MS	R	S	MS	MS	--	S	S	S
Hatton	MR	S	R	MS	--	--	--	S	--	S
Wanser	T	S	R	MR	--	--	--	--	--	MS
Weston	MS	MS	--	--	--	--	--	--	--	--

1 R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible, T=tolerant, MT=moderately tolerant, -- =reaction unknown.
2 Resistance to cephalosporium seems to vary with environment. Resistance may be due to morphological growth patterns rather than true genetic resistance.
3 Cercosporella foot rot.
4 Sprague has good snow mold resistance.
5 Crew is a multiline variety composed of ten separate lines, some of which are rust susceptible.
6 Tres is moderately resistant to powdery mildew.

Table 3.-- Summary of yield data (bushels per acre) for winter wheat varieties tested at several locations in Oregon, 1983-85 averages

Variety	Arlington	Corvallis	Moro	Ontario	Pendleton	Powell Butte
Common white						
Daws	44	97	61	--	74	91
Dusty	--	98	56	139	84	108
Hill 81	43	106	60	142	80	108
Nugaines	--	88	57	104	71	89
Stephens	44	101	61	150	78	96
Yamhill	--	97	--	--	--	--
Club						
Crew	44	80	60	--	78	--
Faro	42	--	59	--	72	--
Jacmar	45	81	53	--	67	81
Tres	44	--	61	104	81	--
Hard red						
Batum	--	--	57	--	69	--
Hatton	--	83	47	--	64	--
Wanser	--	73	40	--	55	--

Note: The figures given in this table are yield averages over the years 1983-1985. Differences among varieties may not be statistically significant. Data was obtained from trials conducted under the leadership of Warren Kronstad, Chuck Rohde, Mathias Kolding, and Fred Crowe.



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