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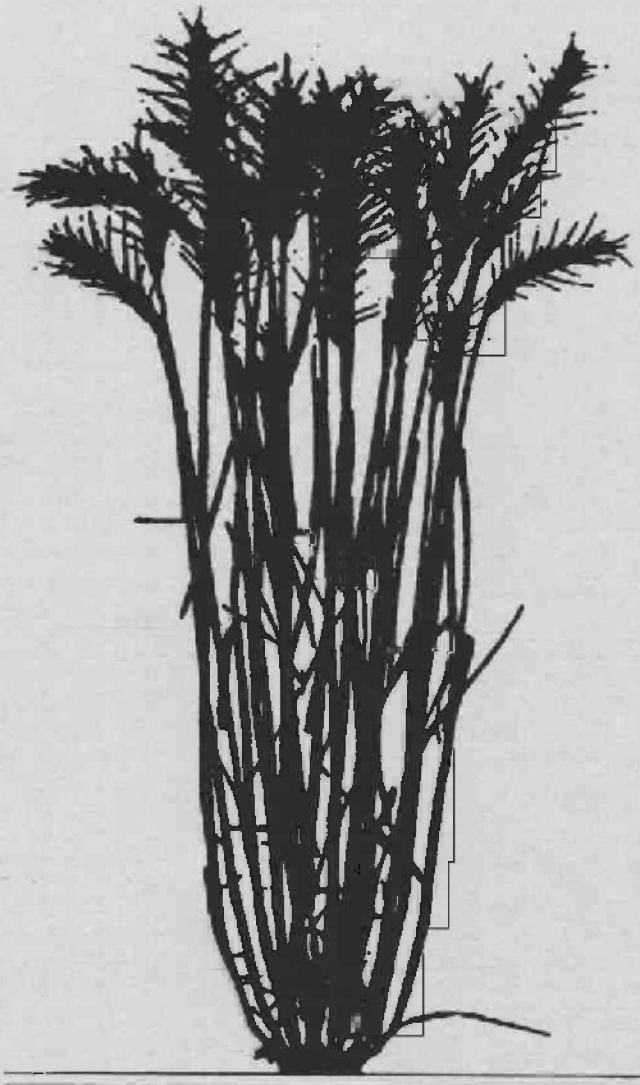
Winter Wheat Varieties for 1993



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Winter Wheat Varieties for 1993

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This publication describes commonly grown soft white and hard red winter wheat varieties and provides yield and agronomic data to aid growers in variety selection. When selecting a variety, consider the following criteria:

Yield Potential. 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 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.

Disease/Pest/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. Use of varietal mixtures is becoming more common as a means to address disease and environmental stress problems. Club mixtures for improved stripe rust control are in use. A Stephens/Daws mix is being used in areas with potential for winter or spring frost injury. None of the currently grown varieties show resistance to Russian Wheat Aphid.

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

Winter Hardiness. Winter hardiness is not a major limiting factor in winter wheat production in Oregon. Varieties with only an average level of winter hardiness perform successfully in most years. If winter kill is a problem in your area, select varieties with a higher winter hardiness rating or consider use of a mixed variety planting.

Grain Quality. Bushel weight (test weight) is a price determining factor in the market place. Choose varieties with good test weight records. All PNW released varieties meet minimum quality standards established by PNW breeders, but suitability for different end use applications can vary.

Agronomic characteristics, disease ratings, and yield data for commonly grown winter wheats and winter triticales are presented in tables 1, 2, 3, and 4 respectively. Detailed performance data can be obtained by contacting your nearest OSU Extension Office or Branch Experiment Station. Written descriptions of the most popular and newer varieties are given below.

Soft Whites

GENE (OR8300801) is an awnless, common soft white winter wheat released by OSU in 1992. It is an early-maturing, short-statured, *Septoria tritici* resistant variety. It is susceptible to *Septoria nodorum* and common bunt. Gene has outyielded Stephens and other commonly grown varieties when grown in western Oregon and in some areas of eastern Oregon. It has only fair winterhardiness.

MacVICAR (OR75336) is a mid-height, medium maturity common soft white wheat released by OSU in 1992. It is an awned semi-dwarf with good lodging resistance. It appears to be best adapted to the Treasure Valley but has performed well in other areas. MacVicar grain protein levels are consistently lower than those of other commonly grown soft whites.

MADSEN (WA7163) is an awned, common soft white winter wheat with white chaff. It was released by WSU in 1988. Madsen is a backcross progeny of Hill 81 and is similar to Hill 81 in appearance and agronomic characteristics, but is more resistant to strawbreaker footrot. Madsen has shown good field resistance to stripe, leaf, and stem rusts. Madsen is equal in height to Hill 81 and slightly earlier in maturity. Yield potential is similar to that of Hill 81.

MALCOLM is a high-yielding, semi-dwarf, common soft white wheat released by OSU in 1987. It has had yields superior to those of Stephens and other common varieties. Like Stephens, Malcolm is susceptible to both *Cephalosporium* stripe and *Septoria*. Winter hardiness is fair.

RELY is a soft white winter club wheat released by WSU in 1990. It is a multiline (a blend of 10 separate lines) that is intended to replace Crew. Rely is resistant

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to stripe rust, leaf rust, and powdery mildew. It is moderately susceptible to strawbreaker footrot. Rely is susceptible to Cephalosporium stripe and dwarf bunt. It is similar to Crew or Tres in plant height, straw strength, seedling vigor, and winterhardiness.

ROD (WA7662) is an awned, common-type soft white winter wheat released by WSU in 1992. Rod is similar in height to Stephens but is weaker strawed. It is late maturing. Rod has good stripe rust and common bunt resistance, but is susceptible to other common wheat diseases. Winterhardiness is similar to that of Madsen.

ROHDE (OR855) is a high-yielding, stripe rust resistant club wheat released by OSU in 1992. It is awned and has bronze chaff. It has yielded well across environments, an unusual trait for a club wheat. Rohde is very susceptible to strawbreaker footrot and will need to be treated with fungicide or grown in fields where strawbreaker has not been a problem. Rohde is taller than commonly grown soft white wheats, but has good lodging resistance. Winter hardiness is comparable to Lewjain. Foundation seed should be available in fall 1993.

STEPHENS is a high-yielding, widely adapted semidwarf released by OSU in 1977. It occupies approximately 70 percent of the wheat acreage in Oregon. Stephens has only an average level of winter hardiness and is susceptible to *Cephalosporium* stripe. In areas where either of these problems occur frequently, it is best to grow several different varieties to reduce loss risks.

YAMHILL is a standard height, beardless common soft white released by OSU in 1969. It has fair winterhardiness and a strong vernalization requirement. Its unique attribute is ability to tolerate wet soil conditions better than any other soft white winter wheat. It is susceptible to stripe rust and requires fungicide treatment in most years.

W301 is an early maturing, stiff-strawed, snow tolerant, common soft white wheat released by OSU in 1992. It is specifically intended for use in high elevation, heavy snow cover regions of the Pacific Northwest. It is similar in maturity and height to Stephens but has a lower yield potential. It is earlier, stiffer strawed and has greater yield potential than Lewjain, John, Luke or Eltan - varieties commonly grown in cold, snowy areas. Foundation seed should be available in fall 1993.

Hard Reds

HOFF (ORCR8313) is a hard red winter wheat released by OSU in 1991. It is an awned, early-maturing, mid-tall semidwarf. It has good resistance to stripe and leaf rusts and is moderately resistant to foot rot. Straw strength is only average and lodging may be a problem in fields where nitrogen fertility is high. It has a yield potential superior to that of other hard red winter wheats commonly grown in Oregon.

Triticales

Triticales are wheat x rye hybrids grown primarily for feed. Winter, spring, and facultative types are available. Newer varieties have yield potentials similar to wheat, but test weights are significantly lower. Most triticales have a broad spectrum of disease resistance due to their rye parentage. Triticale is considered a non-program crop in USDA grain programs.

CELIA (FT91062) is a medium-height, early-to-medium maturing, awned, stiff-strawed triticale released by OSU in 1993. It is a replacement for the variety Flora. Like Flora, Celia has prostrate early growth and an excellent disease resistance profile. Current data suggests that Celia is facultative in growth habit. Foundation seed should be available in fall 1993.

FLORA is a winter triticale released by OSU in 1986. Flora has excellent winter-hardiness and is resistant or tolerant of most wheat diseases except *Cephalosporium* stripe. Yield potential is excellent. Flora has yielded as well as or out yielded Stephens in many instances. Test weights are poor and kernels are shrunken.

WHITMAN (WA80011) is a facultative (spring-winter) triticale released by WSU in 1988. It has had adequate winter-hardiness to survive winters at Pullman, Washington, if snow cover is present during coldest weather. Without snow cover, it is very susceptible to winter kill. It is resistant to current races of stripe and leaf rust. Whitman is a tall triticale with excellent yield potential. Whitman heads out early but is similar in harvest date to Daws or Nugaines. Test weights are only fair.

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

Variety	Released Year	Released State[1]	Emergence[2] index	Winter-[2] hardiness	Maturity	Height[3]	Lodging[4] resistance	Test[2] weight	Chaff[5] color	Head type
Common white										
Basin[6]	1985	Pr	6	7	midseason	SD-M	R	8	W	Awned
Cashup[6]	1985	Pr	7	7	midseason	SD-M	R	8	W	Awned
Daws	1976	WA	4	8	midseason	SD-M	R	6	W	Awned
Dusty	1985	WA	5	7	late	SD-M	MR	7	W	Awned
Eltan	1990	WA	6	9	mid-late	SD-M	MS	7	W	Awned
Gene	1991	OR	5	3	early	SD-SM	R	6	W	Awnless
Hill 81	1981	OR	5	5	midseason	SD-MT	R	7	W	Awned
John	1984	WA	6	7	midseason	SD-M	R	7	W	Awned
Kmor	1990	WA	5	7	mid-late	SD-MT	MR	6	W	Awned
Lewjain	1982	WA	6	6	late	SD-M	MR	7	W	Awned
MacVicar	1992	OR	5	5	midseason	SD-M	R	7	W	Awned
Madsen	1988	WA	5	5	midseason	SD-MT	R	7	W	Awned
Malcolm	1987	OR	5	4	early-mid	SD-M	R	7	W	Awned
Nugaines	1961	WA	5	6	midseason	SD-M	R	8	W	Awned
Oveson	1987	OR	5	4	mid-late	SD-MT	MR	7	W	Awned
Rod	1992	WA	5	5	mid-late	SD-M	MR	8	W	Awned
Sprague	1973	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
W301	1992	OR	5	8	early-mid	SD-M	R	7	W	Awned
Club										
Crew	1982	WA	6	5	midseason	SD-MT	MR	6	W-B	Awnless
Faro	1976	OR	6	5	early-mid	SD-MT	R	5	B	Awnless
Hyak	1988	WA	5	8	early-mid	SD-MT	MR	6	W	Awnletted
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
Rely	1990	WA	5	5	midseason	SD-M	MR	6	W	Awnless
Rohde	1992	OR	5	6	early-mid	SD-MT	R	7	B	Awned
Tres	1984	WA	5	6	midseason	SD-M	R	7	W	Awnless
Tyee	1979	WA	5	6	midseason	SD-MT	R	5	W	Awnless
Hard red										
Andrews	1987	WA	5	7	early	SD-M	R	7	W	Awned
Batum	1985	WA	5	7	mid-late	SD-SM	R	6	W	Awned
Blizzard	1988	ID	9	9	mid-late	SD-M	S	8	W	Awned
Buchanan	1989	WA	8	9	mid-late	SD-MT	MS	6	W	Awned
Hatton	1979	WA	6	9	mid-late	MT	MR	8	W	Awned
Hoff	1991	OR	5	4	early-mid	SD-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
Triticale										
Celia	1993	OR	5	9	early-mid	SD-SM	R	4	W	Awned
Flora	1986	OR	6	9	early-mid	SD-SM	R	2	B	Awned
Whitman	1988	WA	5	3	midseason	MT	MR	2	B	Awned

[1] WA = Washington, OR=Oregon, ID=Idaho, Pr=Private

[2] Scale of 1 to 10, poor to excellent.

[3] SD=semidwarf, SM=short-medium, M=medium, MT=medium-tall, T=tall.

[4] R=resistant, MR=moderately resistant, MS=moderately susceptible.

[5] W=white, B=brown.

[6] Information provided by developer, Columbia Basin Seeds

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

	Rust		Bunt		Flag	Cephalo-[1]	Sept-[2]	Foot[3]	Take	Snow
	Stripe	Leaf	Common	Dwarf	smut	sporium	oria	rot	all	mold
Common white										
Basin	MR[4]	MS	R	--	--	MS	--	--	--	--
Cashup	MR	M	R	S	--	MS	--	--	--	--
Daws	MR	MS	R	S	MS	MS	MS	S	S	S
Dusty	MR	MS	R	S	MS	--	--	S	S	S
Eltan	MR	MS	R	R	--	M	--	S	S	MR
Gene	MR	MR	S	S	MS	--	R	--	S	--
Hill 81	MR	M	R	S	MS	MS	MR	S	S	--
John	S	VS	MR	S	MS	MS	--	--	S	R
Kmor	R	MS	R	S	--	M	--	MS	S	S
Lewjain	MR	MS	R	MR	MS	--	MR	MS	S	--
MacVicar	MR	MS	S	S	--	--	MS	MR	MS	--
Madsen	R	R	R	S	MS	MS	MR	R	--	--
Malcolm	MR	M	R	S	MS	S	S	MS	S	S
Nugaines	M	S	R	S	--	--	MS	MS	S	S
Oveson	MR	MS	MR	S	MS	--	--	S	S	S
Rod	R	M	R	S	--	S	--	S	--	S
Sprague	S	MS	R	S	MS	MS	--	S	S	R
Stephens	R	MS	R	S	MS	S	S	MS	S	S
Yamhill	S	M	S	S	MS	MS	MR	T	S	--
W301	R	MR	MS	MS	MR	T	S	T	--	R
Club										
Crew[5]	M	MS	R	S	S	S	--	S	S	--
Faro	S	S	MR	S	S	S	MS	MS	S	--
Hyak	MR	R	MS	S	S	MS	--	R	--	--
Jacmar	S	VS	MR	MR	M	MS	MR	T	S	--
Moro	S	VS	R	MR	M	--	--	S	S	--
Rely	MR	MR	MS	S	VS	S	--	MS	S	--
Rohde	R	MS	MR	S	--	MR	S	S	--	--
Tres[6]	S	MS	MS	S	VS	MS	--	S	S	--
Tyee	S	S	MR	S	VS	--	--	T	S	--
Hard red										
Andrews	MR	VS	R	MR	R	S	--	S	--	MR
Batum	R	MR	R	S	MS	S	MS	S	S	S
Blizzard	MS	M	R	R	R	--	--	S	S	--
Buchanan	MR	MS	MS	S	R	--	--	S	S	MR
Hatton	S	S	R	S	R	MS	--	S	--	S
Hoff	MR	MR	S	S	S	S	MR	MR	S	--
Wanser	M	MS	R	S	VR	--	MR	--	--	MS
Weston	S	MS	--	MR	R	--	--	--	--	--
Triticale										
Celia	R	R	--	--	--	S	R	MR	MS	MR
Flora	R	R	R	MR	R	S	R	MR	MS	MR
Whitman	R	R	R	--	R	S	R	--	MS	--

[1] Resistance to cephalosporium seems to vary with environment. Resistance may be due to morphological growth patterns rather than true genetic resistance.

[2] Rating is for *Septoria tritici*

[3] Ratings are for Pseudocercosporella foot rot.

[4] R=resistant, MR=moderately resistant, M=intermediate reaction, MS=moderately susceptible, S=susceptible, VS=very susceptible, T=tolerant, --=reaction unknown.

[5] Crew is a multiline variety composed of 10 separate lines, some of which are rust susceptible.

[6] Tres is moderately resistant to powdery mildew.

Table 3.--Summary of yield data (60 lb. bushels per acre) for winter wheat and winter triticale varieties tested over years at several locations in Eastern Oregon.

	Arlington				Heppner				LaGrande				Moro				Pendleton			
	89	90	91	Ave	89	90	91	Ave	89	90	91	Ave	90	91	92	Ave	90	91	92	Ave
Basin	23	29	22	25	29	55	44	43	107	112	106	108	38	48	56	47	73	78	71	74
Cashup	19	29	23	24	22	58	40	40	116	120	121	119	34	41	58	44	80	63	61	68
Daws	18	26	28	24	26	62	39	42	107	113	106	109	40	45	57	47	93	76	65	78
Dusty	20	32	28	27	32	64	39	45	104	108	99	104	42	52	--	--	94	72	--	--
Eltan	--	--	38	--	--	--	39	--	--	--	68	--	--	55	44	--	--	70	55	--
Gene	--	40	14	--	--	64	35	--	--	109	102	--	50	53	67	57	101	76	84	87
Hill 81	20	29	24	24	33	57	38	43	106	123	114	114	44	47	62	51	104	79	63	82
Kmor	--	--	32	--	--	--	37	--	--	--	110	--	--	58	59	--	--	72	72	--
Lewjain	22	32	31	28	28	62	36	42	102	116	100	106	44	60	58	54	91	80	72	81
Madsen	21	32	32	28	31	68	36	45	97	122	112	110	45	53	55	51	93	78	89	87
Malcolm	21	31	20	24	32	59	36	42	108	116	109	111	51	53	60	55	104	82	63	83
MacVicar	--	32	12	--	--	63	39	--	--	128	108	--	51	54	59	55	96	83	63	81
Oveson	24	33	16	24	29	59	33	40	100	120	110	110	42	51	62	52	99	73	52	75
Rod	--	--	30	--	--	--	29	--	--	--	111	--	--	52	66	--	--	52	76	--
Stephens	21	34	23	26	33	64	33	43	104	128	107	113	47	52	63	54	101	83	75	86
W301	--	--	--	--	--	--	--	--	--	--	--	--	--	--	65	--	--	--	81	--
Hyak	15	29	30	25	26	65	37	43	112	119	120	117	34	55	61	50	93	73	66	77
Rely	--	--	--	--	--	--	--	--	--	--	--	--	--	--	58	--	--	--	73	--
Rohde	--	36	28	--	--	61	35	--	--	120	114	--	46	47	69	54	86	67	61	71
Tres	20	24	32	25	24	60	33	39	111	113	124	116	31	51	60	47	84	60	62	69
Andrews	19	28	26	24	23	49	48	40	99	109	106	105	42	48	56	49	83	74	44	67
Batum	17	33	33	28	21	60	44	42	96	106	88	97	47	60	--	--	87	65	--	--
Buchanan	--	--	22	--	--	--	59	--	--	--	75	--	--	49	49	--	--	76	41	--
Hoff	20	29	29	26	23	49	34	35	103	109	99	104	38	40	52	43	84	67	52	68
Wanser	14	30	30	25	21	44	44	36	92	86	86	81	32	39	47	39	43	47	30	40
Flora	27	29	43	33	19	57	38	38	101	115	123	113	51	53	51	52	85	87	77	83
Whitman	24	29	29	27	26	55	27	36	118	116	130	121	46	50	61	52	110	70	82	87
Trial average	20	31	23	26	26	59	36	41	103	115	105	109	43	50	58	50	91	74	63	76
PLSD (5%)	6	7	6	NS	NS	8	7	NS	NS	14	17	12	6	8	8	7	9	11	15	14
PLSD (10%)	5	6	5	NS	NS	7	6	NS	NS	12	14	10	5	7	7	6	8	9	12	11
CV	11	14	15	17	13	9	12	13	10	8	10	6	8	10	8	9	6	9	14	11

The averages at the bottom of each column are nursery averages. Data for some lines tested in each nursery are not shown; hence, averaging the data shown here may result in a different number. The PLSD values given can be used to make comparisons among all varieties. NS indicates that differences are not statistically significant. Data was obtained from trials conducted under the leadership of Pam Zwer, Columbia Basin Agricultural Research Center cereal breeder.

Table 4.--Summary of yield data (60 lb. bushels per acre) for winter wheat and winter triticales tested over years at a western Oregon and three irrigated sites.

Variety	Corvallis[1]			Corvallis[2]			Hermiston		Madras			Ontario		
	1990	1991	1992	1990	1991	1992	1991	1992	1990	1991	1992	1990	1991	1992
Daws	106	--	--	141	--	90	--	84	84	82	91	115	--	--
Dusty	116	--	--	143	91	--	99	--	78	74	82	118	130	111
Eltan	--	33	90	--	57	78	131	84	--	62	72	--	145	--
Gene	122	128	147	140	102	109	40	108	83	79	88	--	60	--
Hill 81	107	69	124	158	78	100	100	88	74	77	94	120	126	--
Kmor	--	40	74	--	65	103	94	101	--	64	87	--	138	112
Madsen	118	123	132	150	114	97	106	90	84	80	94	130	124	--
Malcolm	129	123	109	143	99	96	114	110	79	83	98	120	140	137
MacVicar	115	90	124	156	105	105	105	107	83	88	87	128	131	128
Oveson	117	--	--	141	--	97	--	75	72	56	97	129	--	--
Rod	126[3]	60[3]	108[3]	--	--	111	--	96	--	--	99	--	--	--
Stephens	101	120	113	129	111	105	79	93	90	84	77	123	125	120
W301	124[3]	68[3]	--	--	--	102	--	103	--	--	84	--	--	--
Hyak	111	64	76	99	75	96	107	79	64	68	70	117	125	--
Rely	--	--	--	--	--	93	--	--	--	--	73	--	--	--
Rohde	105	126	115	142	90	101	--	108	--	--	89	--	--	115
Tres	100	--	--	111	66	--	112	--	72	60	79	117	121	99
Batum	110	47	--	119	--	--	--	--	66	72	67	--	--	--
Hatton	--	--	--	--	--	--	--	--	--	72	72	--	--	--
Hoff	126	82	142	137	73	75	95	96	96	104	79	--	112	--
Wanser	93	34	75	--	--	--	--	--	78	64	70	--	--	--
Flora	107	--	103	127	97	90	111	--	75	79	--	119	133	--
Whitman	97	--	132	158	131	108	83	--	75	58	--	101	129	--
Trial average	110/102	104/100	120/129	131	87	96	98	93	80/88	76/89	86/79	119	124	115
PLSD (5%)	15/7	22/24	29/22	16	26	19	--	24	21/16	19/20	12/13	NS	25	14
PLSD (10%)	12/5	18/20	24/18	13	22	16	--	20	17/13	16/17	10/11	NS	21	12
CV	10/3	15/17	17/12	7	19	14	--	9	18/13	15/14	10/12	13	14	9

Levels of statistical significance, when available, are shown at the bottom of each column. At some sites, white and red wheats were grown in separate nurseries. In such cases, two sets of statistics are shown. The first figure (left column) is used for white wheat and triticale comparisons, the second for red wheats.
Data was provided by Warren Kronstad (Corvallis - unsprayed), Russ Karow (Corvallis - sprayed), Mat Kolding (Hermiston), Mylen Bohle (Madras), and Mike Barnum (Ontario).

[1]Not sprayed for Septoria control. There was heavy Septoria infestation in 1990 and 1991, little in 1992. [2]Sprayed with fungicide for Septoria control.
[3]Grown in separate trial. Direct comparison not possible.

Foundation Seed Program Changes

Russ Karow

A significant change is being made in the way foundation cereal seed will be produced for use by Oregon growers. Most foundation cereal seed will no longer be produced in Oregon. Instead, arrangements have been made for production in Washington and Idaho. This article explains what foundation seed is, how it has been produced in the past, and how it will be produced in the future.

Each cereal variety has a unique genetic makeup. Because of this unique genetic makeup, there are differences among varieties in traits such as height, heading date, yield, disease resistance, et cetera. Growers often choose to grow a particular variety because of its unique traits. Growers count on genetic identity and purity in the seed they purchase.

How is genetic identity and purity assured? Through a foundation seed production system. In Oregon, cereal breeders produce small amounts of breeder's seed of new or existing varieties. The plants producing this seed are carefully monitored and rogued during the growing season. Breeder's seed is as genetically pure and mechanically clean as humanly possible. The small amount of breeder's seed is used to grow the next generation of seed called foundation seed. Foundation seed is released to commercial seed growers for further increase.

In most states, foundation seed is produced under the watchful eye of a foundation seed project. Such a project has existed in Oregon since 1968. The project manager and staff have contracted with growers for production acreage, cleaned drills, rogued fields, cleaned combines and seed cleaning plants, bagged, tested and distributed seed over many years. Through most of this time, the Oregon project has barely broken even or has lost money. Losses have been incurred due to the high fixed costs associated with small acreage fields, rejection of fields for purity reasons, and carryover inventories of slow moving varieties. Losses have been covered out of Department of Crop and Soil Science funds or through funding provided by Seed Certification, a sister agency. With ever decreasing budgets at Oregon State University and a diminishing probability for outside funding for the project, it became obvious that something else needed to be done to assure Oregon growers adequate supplies of quality foundation seed - the primary goal of the program.

Several options were investigated. The most viable was pursued by Eric Anderson, Ione wheat grower and Oregon Wheat Commission member, on behalf of the Oregon Wheat Commission and OSU. Eric approached the foundation seed projects in Washington and Idaho to determine if there was interest in assuming full responsibility for foundation seed production for Oregon growers. Foundation projects in the three states were already cooperating in small ways to produce seed for PNW growers, but production of all seed for another state was a new idea. Following Eric's initial investigations, university personnel from the three states conversed via phone and in meetings and reached an agreement where by Washington State University, the Washington State Crop Improvement Association, and the University of Idaho agreed to produce seed on behalf of Oregon State University for Oregon growers. A formal Memorandum of Understanding has been written and signed and policies and procedures for implementation of the MOU have been developed by a committee of growers, seed dealers, and university personnel.

What does this agreement mean for Oregon cereal growers? For the most part, there will be few noticeable effects. Growers who purchase certified seed from local seed suppliers will see no change at all. Starting in fall 1993, growers who purchase foundation seed will need to contact Washington State Crop Improvement to obtain seed stocks. WSCIA will serve as the clearinghouse for Oregon grower seed requests and inquires. Growers in eastern Oregon will have access to foundation seed at Pendleton and Caldwell, Idaho. Western and southwest Oregon growers will have access to seed at Corvallis, provided they plan ahead and order seed early (a truck will deliver preordered seed to the Foundation Seed Plant at Hyslop Farm). Late orders will need to be shipped at grower expense or picked up in Washington or Idaho.

Seed quality will be unaffected by the change, and seed price, for common varieties, will remain unchanged or decrease as a result of this agreement. Minor varieties will be produced on demand at a negotiated price. Copies of the Memorandum of Understanding and of program policies and procedures can be obtained by contacting the Dept. of Crop and Soil Science at OSU.

Why are Washington and Idaho interested in producing foundation seed for Oregon growers? Both have functioning programs with some surplus capacity. Both may realize benefits in production efficiency and ability to expand or improve their operations due to the added volume of production. Both may have better early access to new Oregon varieties.

There will be an annual review of this agreement, and the advisory committee will provide on-going advice on how best to meet Oregon grower needs through this tristate effort. Growers with questions or concerns about the new program are invited to contact Sheldon Ladd, Head, Dept. of Crop and Soil Science, or Russ Karow, Extension cereals specialist at OSU.

A bright and profitable future is seen as a result of this cooperative effort to serve the needs of Oregon cereal growers.

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 must 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" or bulk shipping certificate verifying 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 yield best results. For example, if a seed lot has a 99 percent pure seed, then, from a 100 lb. bag of seed you can expect 99 lbs. of pure seed of the specified crop.

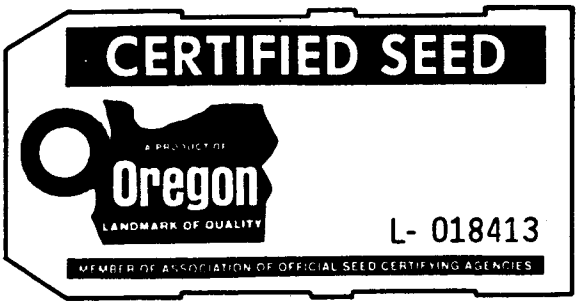
What is the percentage of other crop seeds? Barley, oats, vetch, and other crop seed can be found in seed lots. The percentage of other crop seed tells you how much of the seed you are buying is of these other crops.

What is the inert matter content of this seed? Sand, stones, dirt, sticks, pods, chaff, 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 number of seeds of plants recognized as weeds that are 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 last 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 must both be stated. If you buy seed with a low germination, you are paying for dead seed.

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.

Call your local office of the OSU Extension Service for information on seed certification or to obtain Foundation Seed stock.

Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.