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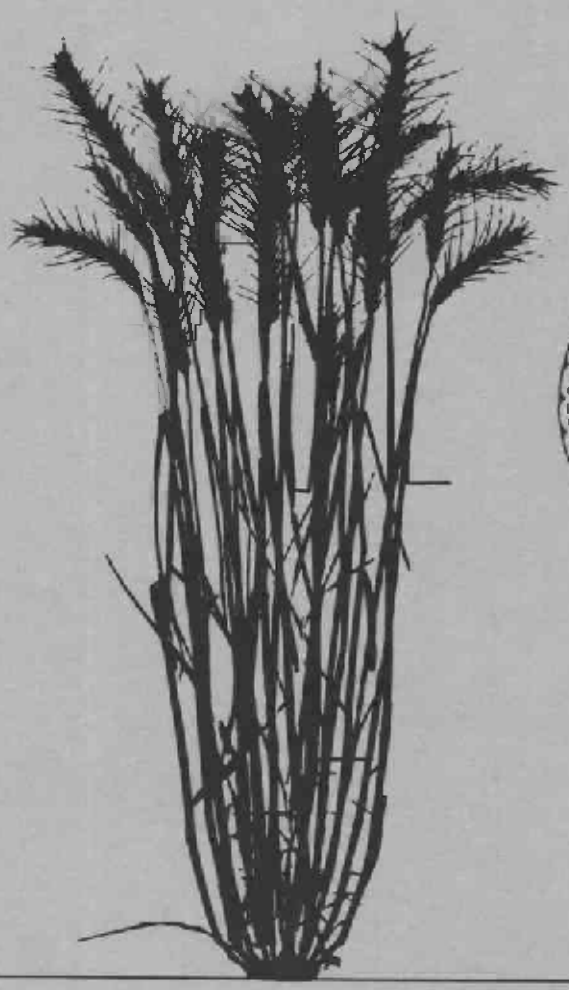
Winter Wheat Varieties for 1991



OREGON STATE UNIVERSITY EXTENSION SERVICE

Winter Wheat Varieties for 1991

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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 selecting a variety, the following criteria should be considered:

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 years 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/Hill 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 soft white and hard red winter wheats and winter triticales are presented in tables 1, 2, and 3-4, respectively. Detailed performance data can be obtained by contacting your nearest OSU Branch Experiment Station. Written descriptions of the most popular and/or newer varieties are given below.

Soft Whites

BASIN is an awned, common-type soft white winter wheat released by Columbia Basin Seeds in 1985. It is rated as resistant to strip rust, leaf rust, common bunt, and flag smut, and as moderately resistant to dwarf bunt. It is a mid-season variety with good straw strength, winter hardiness, and emergence.

CREW is a multi-line club wheat variety released by Washington State University (WSU) in 1982. Small acreages are still being grown but it has been replaced by Tres and Hyak in many areas. Foundation seed will no longer be available.

DAWS is one of the most winter hardy of the soft white wheat varieties adapted to the Pacific Northwest. It is a mid-season, medium height, semi-dwarf developed by WSU. Emergence is only fair and the variety should not be planted where emergence from great depth is required.

DUSTY is a common type soft white wheat variety released by WSU in 1985. It is more winter hardy than Stephens and has good emergence. It is a late season variety and has resistance to many common diseases. Dusty is susceptible to *Cercosporella* foot rot and powdery mildew. It has lodged under some irrigated production conditions. Grower experience with the variety is mixed.

ELTAN (WA7431) is an awned, white chaffed, common soft white wheat released by WSU in 1990. It has good resistance to snow mold, common bunt and dwarf smut. It is moderately resistant to stripe rust, is moderately susceptible to leaf rust and susceptible to stem rust. It was specifically developed for use in areas with snow mold and dwarf smut problems and is likely to replace Sprague and John.

HILL 81 is a semi-dwarf variety released by Oregon State University (OSU) in 1981. It has good emergence and winter hardiness. It is a mid-season variety with greater height than most semi-dwarfs and is susceptible to lodging when grown under intensive management. Yield

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potential is similar to Stephens. Hill 81 has shown tolerance to *Septoria* and to *Cephalosporium* stripe.

HYAK (WA 7166) is an awnletted, white chaffed, club wheat released by WSU in 1988. It is a backcross progeny of Tyee and resembles Tyee in physical appearance and in many agronomic traits, but is more resistant to strawbreaker footrot and to stripe, leaf and stem rusts. Hyak is susceptible to powdery mildew, *Cephalosporium* stripe, common bunt and dwarf bunt. Yields have generally been equivalent to or better than those of Tres.

KMOR (WA7529) is an awned, white chaffed common soft white wheat released by WSU in 1990. It has good resistance to stripe rust, moderate resistance to *Cephalosporium stripe* and strawbreaker foot rot and is susceptible to leaf and stem rust. Kmor is taller than Daws and later in maturity. Yield potential appears to be good. Kmor is intended to be a Daw's replacement.

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. On average, yield is better than that of Hill 81, but less than that of Stephens.

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

STEPHENS is a high-yielding, widely adapted semi-dwarf released by OSU in 1977. It currently occupies approximately 70% 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 recommended to not grow large acreages of Stephens, but to utilize varieties with better winter hardiness and *Cephalosporium* tolerance.

TRES is a club wheat variety released by WSU in 1984. Its name means three, signifying its resistance to three foliar diseases – stripe and leaf rust, and powdery mildew; however, **it is no longer resistant to stripe rust** races present in the Columbia Basin. Tres is one of the ten component lines found in Crew.

Hard Reds

ANDREWS (WA6820) is a WSU developed hard red winter wheat released in 1987. It is a white-chaffed, awned, common-headed semi-dwarf with snowmold resistance and some TCK tolerance. Yields have been only average. Protein tends to be higher than that of Hatton.

BATUM is a white chaffed hard red winter wheat released by WSU in 1985. Batum is a semi-dwarf 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 is resistant to stripe rust and has moderate resistance to leaf rust.

HATTON is an awned 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.

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. In most triticales, disease resistance is broader spectrum than that of wheats due to the rye background. Triticale is considered a non-program crop in USDA grain programs.

FLORA is a winter triticale released by OSU in 1986. Flora has excellent winter-hardiness and is resistant or tolerant of most wheat diseases with the exception of *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 good 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-hardiness	Maturity	Height[3]	Lodging[4] resistance	Test[2] weight	Chaff[5] color	Head type
Common white										
Basin[6]	1985	Pr	6	6	midseason	SD-M	R	8	W	Awned
Cashup[6]	1985	Pr	7	8	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	8	late	SD-M	MS	7	W	Awned
Hill 81	1981	OR	5	4	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
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
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
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
Tres	1984	WA	5	6	midseason	SD-M	R	7	W	Awnletted
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
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
Triticale										
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 smut	Cephalo-[1] sporium	Sept-oria	Foot[2] rot	Take all	Snow mold
	Stripe	Leaf	Common	Dwarf						
Common white										
Basin[3]	R[4]	R	R	MR	R	MR	--	--	--	--
Cashup[3]	R	R	R	S	R	MR	--	--	--	--
Daws	MR	MS	R	S	MS	MS	MS	MS	S	S
Dusty	MR	MS	R	S	MS	MS	--	S	S	S
Eltan	MR	MS	R	R	--	MS	--	S	S	R
Hill 81	MR	MR	R	S	S	MR	MR	S	S	--
John	MS	S	S	S	--	--	--	--	S	R
Kmor	R	S	MR	S	--	MR	--	MR	S	S
Lewjain	R	MS	R	MR	MS	MR	MR	T	S	--
Madsen	R	R	S	S	--	MS	MR	R	--	--
Malcolm	MR	MR	R	S	--	MS	MS	MS	S	S
Nugaines	MR	S	R	S	MR	MR	MS	MS	S	S
Oveson	R	S	MR	S	--	MR	--	MS	S	S
Sprague	S	S	S	S	S	S	--	S	S	R
Stephens	MR	MS	R	S	MS	S	MS	MR	S	S
Yamhill	MS	MR	S	S	MR	MS	MR	T	S	--
Club										
Crew[5]	MR-S	MR	R	S	MS	S	--	S	S	--
Faro	S	S	MR	S	MS	S	MS	MS	S	--
Hyak	R	R	S	S	--	S	--	R	--	--
Jacmar	S	S	MR	MR	MS	MS	MR	T	S	--
Moro	MS	S	MR	R	MR	MR	--	MS	S	--
Tres[6]	MR-S	MR	MR	S	S	S	--	MS	S	--
Tyee	S	S	MR	S	S	MR	--	T	S	--
Hard red										
Andrews	MR	S	R	MR	--	S	--	S	--	MR
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	--	--	--	--	--	--	--	--
Triticale										
Flora	R	R	R	MR	--	S	R	MR	MS	MR
Whitman	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] Cercosporella foot rot.

[3] Information provided by developer, Columbia Basin Seeds

[4] R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible, T=tolerant, MT=moderately tolerant, -- =reaction unknown.

[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. A stripe rust race in parts of Eastern Oregon and Washington has overcome Tres' stripe rust resistance.

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

	Arlington				Heppner				LaGrande				Moro				Pendleton			
	88	89	90	Ave	88	89	90	Ave	88	89	90	Ave	88	89	90	Ave	88	89	90	Ave
Basin	42	23	29	31	57	29	55	47	118	107	112	112	57	59	38	51	68	57	73	66
Cashup	45	19	29	31	51	22	58	44	121	116	120	119	52	65	34	50	76	53	80	70
Daws	42	18	26	29	56	26	62	48	121	107	113	114	64	62	40	55	76	58	93	76
Dusty	43	20	32	32	54	32	64	50	127	104	108	113	63	58	42	54	70	71	94	78
Hill 81	41	20	29	30	56	33	57	49	113	106	123	114	48	68	44	53	81	60	104	82
Lewjain	47	22	32	34	60	28	62	50	125	102	116	114	54	65	44	54	81	63	91	78
Madsen	47	21	32	33	52	31	68	50	121	97	122	113	57	60	45	54	79	66	93	79
Malcolm	40	21	31	31	57	32	59	49	125	108	116	116	68	60	51	60	82	72	104	86
Oveson	50	24	33	36	54	29	59	47	119	100	120	113	61	56	42	53	76	62	99	79
Stephens	48	21	34	34	64	33	64	54	111	104	128	114	65	59	47	57	81	61	101	81
Crew	42	16	--	--	52	26	--	--	115	97	--	--	54	61	--	--	70	61	--	--
Hyak	49	15	29	31	57	26	65	49	112	112	119	114	55	61	34	50	69	60	93	74
Tres	41	20	24	28	56	24	60	47	99	111	113	108	53	63	31	49	84	60	84	76
T/T/F/J[1]	46	19	--	--	54	24	--	--	118	90	--	--	59	60	--	--	75	61	--	--
Andrews	41	19	28	29	59	23	49	44	104	99	109	104	45	57	42	48	70	54	83	69
Batum	48	17	33	33	53	21	60	45	109	96	106	104	68	67	47	61	74	59	87	73
Hatton	47	20	--	--	55	23	--	--	104	92	--	--	48	53	--	--	67	61	--	--
Wanser	44	14	30	29	50	21	44	38	93	92	86	90	38	48	32	39	57	50	43	50
Flora	43	27	29	33	52	19	57	43	115	101	115	110	64	74	51	63	72	69	85	75
Whitman	--	24	29	--	--	26	55	--	--	118	116	--	--	51	46	--	--	68	110	--
Nursery Average	44	20	31	32	55	26	59	47	114	103	115	111	56	60	43	53	74	61	91	74
PLSD (5%)	NS	6	7	NS	NS	NS	8	6	17	NS	14	11	13	NS	6	8	9	6	9	12
PLSD (10%)	NS	5	6	NS	NS	NS	7	5	14	NS	12	9	10	NS	5	7	8	5	8	8
CV	11	20	14	9	13	21	9	8	11	10	8	6	16	14	8	10	8	6	6	9

The figures given in this table are yields for 1988, 1989, 1990 and a 1988-90 average. Levels of statistical significance are shown at the bottom of each column. Data was obtained from trials conducted under the leadership of Pam Zwer, Columbia Basin Ag Research Center Cereal Breeder.

[1]Four-way mixture of Tres, Tyee, Faro and Jacmar

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

Variety	Corvallis[1] 1988	Corvallis[1] 1989	Corvallis[1] 1990	Corvallis[2] 1989	Corvallis[2] 1990	Hermiston 1988	Hermiston 1989[3]	Hermiston 1990[4]	Madras 1988	Madras 1989	Ontario 1990
Basin	102	--	--	--	--	119	--	--	125	--	--
Cashup	99	--	--	--	--	105	--	--	133	--	--
Daws	--	83	106	98	141	--	73	78	--	141	115
Dusty	67	112	116	120	143	107	72	98	120	124	118
Hill 81	104	97	107	117	158	118	55	91	120	109	120
Madsen	--	124	118	--	150	--	71	94	118	130	130
Malcolm	87	114	129	107	143	125	38	90	140	136	120
Oveson	82	109	117	--	141	113	78	84	128	117	129
Stephens	85	100	101	122	129	126	59	102	135	130	123
Yamhill	--	--	--	--	123	--	--	--	--	--	--
Crew	71	--	--	--	--	90	58	--	108	--	--
Hyak	--	127	111	98	99	--	55	51	104	--	117
Tres	34	96	100	--	111	88	68	72	108	--	117
T/T/F/J	65	96	--	--	--	90	87	--	102	--	--
Andrews	78	73	--	--	--	92	--	--	112	130	--
Batum	78	66	110	88	119	60	73	--	100	96	--
Hatton	30	47	--	--	--	56	76	--	98	76	--
Wanser	25	65	93	--	--	59	59	--	88	84	--
Flora	105	--	107	102	127	102	75	93	--	--	119
Whitman	--	114	97	113	158	--	--	118	--	128	101
Average	80/53	106/63	110/102	108	131	108/68	66/69	88	120/100	127/96	119
PLSD (5%)	17/19	14/18	15/7	23	16	--	--	20	12/18	--	NS
PLSD (10%)	14/16	12/15	12/5	19	13	--	--	17	10/15	--	NS
CV	13/15	9/14	10/3	12	7	--	--	17	7/12	--	13

Levels of statistical significance, when available, are shown at the bottom of each column. The first figure (left column) is used for white wheat and triticale comparisons, the second for red wheats.

Data was provided by Dale Coats and Fred Crowe (Madras), Warren Kronstad (Corvallis - unsprayed), Matt Kolding (Hermiston and Ontario) and Russ Karow (Corvallis - sprayed).

[1]Not sprayed for Septoria control. There was heavy Septoria infestation in 1988 and 1990, little in 1989. [2]Sprayed with fungicide for Septoria control.

[3]Severe cold in late January 1989 negatively impacted yields. [4]Severe disease pressure limited 1990 yields at Hermiston.

Interpreting Data From Variety Trials

The varieties in any particular variety trial are handled as much alike as is humanly possible. Identical seeding rates, dates and depth, fertility, weed control etc. are used. The reason for identical treatment is so that differences observed among varieties, if any, can be attributed to genetic rather than plot management causes. However, even with special care given to provide uniform handling, non-genetic variation is often observed in variety evaluation trials. Two "identical" plots are more likely than not to have slightly different yields. This type of variation is known as random error and must be accounted for when interpreting results of a trial.

In order to account for random error, researchers use several experimental tools. Plots are replicated several times, mean or average values are reported rather than single plot values and a value which estimates the random variation present in a trial is used to make comparisons among means or averages.

The values given in tables 3 and 4 are average values. Each number is the average of either 3 or 4 replications. A grand mean for each trial is presented at the bottom of each column. A "PLSD" value is also given. PLSD stands for "protected least significant difference". While two varieties may have numerically different yield values, unless the difference in yield is equal to or greater than the PLSD value, the difference may not be real or repeatable. It may just represent random error.

Consider the 1990 Hermiston data column in table 4. A PLSD (5%) value of 20 bu/a is given. Any pair of variety yield means for Hermiston in 1990 must be different by 20 bushels or more in order to be considered real. For example, Daws and Dusty have yields of 98 and 78 bu/a, respectively. The difference between these two values is 20 hence this difference would be considered real- Daws and Dusty are different in yield. Dusty and Hill81, on the other hand, have yields of 98 and 91, respectively. Since the difference between these values is only 7 bushels, these two varieties would not be considered different in yield. This difference may be due to random variation.

In some cases random error in a trial may be so great that there are no "real" differences among varieties. A case in point is the 1990 data for Ontario reported in table 4. While variety average yields range from 101 to 130 bushels per acre, there was so much random error that none of the differences are considered real. The "NS" designation in the PLSD column means that differences are nonsignificant.

PLSD values will differ from trial to trial, from year to year and from location to location. One trial may have a PLSD of 1 while another has a PLSD of 50. There is no such things as a bad PLSD or a good PLSD. It is simply a number which reflects the variation that was present in a trial and that can be used to compare means.

Another commonly reported mean separating value is the LSD. An LSD is similar to a PLSD in meaning and use, but is a value of slightly less utility. An LSD value can be generated for any set of data, even if treatment means are not really different. A PLSD indicates that real differences are present in the data.

If you look carefully at the bottom of tables 3 and 4, you will see that two PLSD values are given - PLSD (5%) and PLSD (10%). In simplest terms, a PLSD of 5% means that 5% of the time, or 1 out of 20 times, a difference greater than the PLSD value could still be due to chance alone. In other words, there is a 95% confidence associated with the PLSD value.

A PLSD of 10% means that 10% of the time, or 1 out of 10 times, a difference greater than the PLSD value could be due to chance alone. There is a 90% confidence in the value. A PLSD (10%) will always be smaller in value than a PLSD (5%). With a smaller PLSD value, more differences between mean values will be declared "real".

Depending on how much risk you are willing to assume, you can choose to use either the 5% or 10% PLSD. In selecting a new variety there is little cost involved in the change other than the cost of new seed. Using a 10% PLSD may be warranted in such cases.

On the other hand, if one is looking at changing combines or tillage equipment, a 5% or even 1% (99% confidence) PLSD might be desirable as you would want a high confidence in the reality of a difference before making a costly change.

Another value which can be used to evaluate an experiment is the CV (coefficient of variation) value. CVs are also reported in tables 3 and 4. A CV value roughly indicates how much random variation was present in a trial. For yield data, CV values of 1 to 15 would be considered normal. Values in excess of 15 would indicate that considerable variation was present in a trial. In such cases, there are likely to be no significant differences among means.

Whenever you are given data to evaluate, look for a PLSD value. If none is given, ask the data supplier if there is any statistical reason to believe that the treatment values are really different. You may be surprised by the answer!

The 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, the following questions should be asked:

What is the identity of this seed? Varieties are developed with the goal of improving yields through disease resistance and improved agronomic characteristics. Seed Certification is one method of insuring 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 of this seed? 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% pure seed, then, from a 100 lb. bag of seed you can expect 99 lbs. of pure seed of the specified crop.

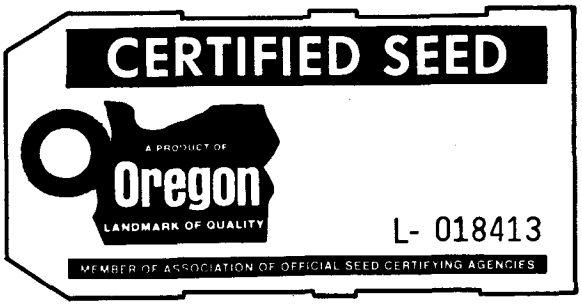
What is the percentage of other crop seeds? Barley, oats, vetch, and other crop seed can be found in seed lots. The percentage of other crop seed tells you how much of the seed you are buying is of these other crops.

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 gives you an indication of 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 which 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 will 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.

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