

CEREAL GRAIN VARIETAL ADAPTATION

Spring Grain Nursery

The spring grain nursery was seeded on the Kenneth Harris Farm at Madras, Oregon, on March 30, 1961. The nursery consisted of 14 spring wheat varieties, 12 spring oat varieties and 20 spring barley varieties.

The soil at this location is classified as a Madras loam and had the following cropping history.

<u>Year</u>	<u>Crop</u>	<u>Fertilizer</u>	<u>Yield</u>
1958	Ladino Clover		350# - Acre
1959	Potatoes	162# N - 96# P ₂ O ₅ - 60# K ₂ O	22 Ton - Acre
1960	Potatoes	170# N - 96# P ₂ O ₅ - 60# K ₂ O	23 Ton - Acre
1961	Wheat	35# N	

The field had been in Ladino clover at least two years prior to 1958. Phosphate and sulfur were applied during the years the field was in clover.

The early portion of the 1961 growing season was favorable for the growth of grain, however, the relatively warm and moist season was favorable for rust also. Hot, dry weather during the last of July and the first of August prematurely ripened the grains. In the case of barley and oats, this had little apparent effect on yield but wheat was harder hit and probably yield was reduced by the weather and also by the rust infestation.

Spring Wheat

The yield and agronomic data, (Table No. 11), taken on the spring wheat varieties generally show that rust infection did influence yield. Susceptible varieties, such as Federation, Onas 53, Lemhi 53 and Lemhi, which are usually high yielding were significantly lower yielding than Svenna, Marfed, Henry and Kenhi, which from their rust ratings indicate they have some to excellent resistance to rust. Of these top four varieties, Svenna, Marfed and Kenhi have performed well in relation to Federation every year. Henry is generally lower yielding than Federation and only on years of high rust incidence does it outyield Federation.

Kenhi has demonstrated its ability to yield well under a range of unfavorable conditions during the three years it has been grown and should be considered for use in Central Oregon.

On the basis of their performance during heavy rust, it appears that Marfed and Kenhi should be recommended over Federation, Lemhi, and Lemhi 53.

Table No. 11

Summary of the Yield and Agronomic Results of the Spring Wheat Nursery
Grown on the Kenneth Harris Farm, Madras, Oregon, 1961

Variety or Line	Pedigree	Average Bu./Acre	Significance 5% Level (1)	Average Bu. Wt. Pounds	Plant Height Inches	Heading Date	Stripe Rust Rating (2)
Svenna	-----	56.0		59.25	38	6/17	1 /
Marfed	11916	51.3		3			
Henry	12265	51.2		2-			
Kenhi	13268	49.3		3			
Orfed	11913	45.4		4			
Kenya X Lemhi ² 50-13405	12948	45.1		2 /			
Atson	-----	43.3		1			
Baart 46	12385	42.8		2 /			
52-AB-9702	13435	42.6		3-			
Onas 53	13069	42.2		4 /			
Federation 41	12230	39.3		3 /			
Federation	4734	38.7		5			
Lemhi 53	13258	34.0		3 /			
Lemhi	11415	33.2		5			

Coefficient of Variation - 2.9%

Seeded March 30, 1961

Harvested August 12, 1961

The varieties in this nursery were ripened prematurely by abnormally warm weather during the last of July and the first of August.

(1) Any two varieties spanned by the same line are not significantly different in yield.

(2) Rust rated from 1 to 5; 1 is no rust, 5 is severe infestation.

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Svenna appears to have good yielding potential and a high degree of resistance to rust but is taller and later maturing than Marfed and Kenhi. Yields by replication are presented in Appendix Table No. 18.

Spring Barley

The hot weather during the late growth stages caused the barley heads to ripen somewhat prematurely but judging from the yields this effect was not severe. The grain ripened and was starting to shatter while the straw was still green. It was necessary to cut the barley and allow the straw to cure for several days before it could be removed from the field.

In calculating the yields of the hulless barleys, the standard 48 pounds per bushel was used. The use of this standard weight places the yield in bushels per acre considerably higher than they realistically should be. The yield of the hulless barleys in the nursery calculated at 48 pounds per bushel, 60 pounds per bushel and pounds per acre are presented below.

Variety or Line	Yield in Bu./Acre 48# Bu.	Yield in Bu. Acre 60# Bu.	Yield in Pounds Per Acre
Trebi	99.1		4757
855-14-23	110.1	88.0	5281
855-16-5	104.4	83.5	5015
855-14-2	90.6	72.5	4353

The above figures indicate that if it is desirable to compare hulless barley with the standard form of barley, then the comparison should be made in pounds or tons per acre and not as bushels per acre.

Table No. 12 presents a summary of the yield and agronomic data of the varieties grown during 1961. The results indicate that B 571-23 and B 571-11 were significantly higher yielding than any of the commonly grown varieties. During the six years they have been compared to Trebi, they have yielded 116% and 103% of Trebi respectively. Both varieties are more severely affected by drouth during short water years than Trebi. For the years that notes were taken, B 571-23 and B 571-11 were similar to Trebi in height and maturity but are stiffer strawed than Trebi. Seed of B 571-23 will be increased in 1962 for field testing. The new variety, Unitan, (Glacier X Titan), C.I. 10421, in two years of comparison has yielded only 94% of Trebi and as far as has been observed has no special advantage for the Central Oregon area.

Yields by replicate are presented in Appendix Table No. 19.

Summary of Yield and Agronomic Results of the Spring Barley Nursery
Grown on the Kenneth Harris Farm, Madras, Oregon, 1961

Variety or Line	Pedigree	Average Yield Bu./Acre	Significance 5% Level (1)	Average Bu. Wt. Pounds	Plant Height Inches
B571-23	-----	127.3		46.75	31
B571-11	-----	125.1		47.75	28
B571-2	10116	117.1		48.25	36
Ezond X Frontier Sel. 462	9184	115.1		50.00	32
51-AB-4706	10121	114.9		49.75	33
51-AB-5396	10525	114.4		50.75	32
B571-5	10115	111.3		45.00	28
B570-8	10118	110.4		47.75	35
855-14-23 (Hulless) (2)	-----	110.1		60.75	29
Hiland	9530	107.4		49.50	34
Firlbecks III	10088	107.3		53.75	30
855-16-5 (Hulless) (2)	-----	104.4		60.75	32
Hannchen	531	103.3		51.50	32
4363-32	10639	102.9		51.25	29
Bonneville	7248	101.8		49.75	31
51-AB-5348	10526	101.3		48.25	29
B567-3	10119	100.5		46.00	28
Trebi	936	99.1		47.50	30
Glacier X Titan (Unitan)	10421	95.1		50.50	34
855-14-2 (Hulless) (2)	-----	90.6		60.75	27

Coefficient of Variation - 8.8%

Seeded March 30, 1961

Harvested August 2, 1961

- (1) Any two varieties spanned by same line are not significantly different in yield.
(2) Bushels per acre calculated from the standard 48 pounds per bushel.

Spring Oats

The oat varieties were also affected by the warm weather during the ripening period. Similar to the barley, it was necessary to harvest the oats while the straw was still green to prevent heavy losses to shattering as the panicles were prematurely ripened. There was very little difference in ripening date of any of the varieties, consequently the taller and later maturing varieties were more seriously affected.

The above observations are borne out by the yield and agronomic data presented in Table No. 13. The results indicate that generally the shorter and earlier maturing varieties were higher yielding under the conditions of 1961. Overland was significantly higher yielding than Centore and Park, and under usual conditions the Overland yields similar to or less than these varieties. Victory, the tallest and one of the latest maturing varieties in the nursery was seriously hurt by the adverse weather.

Yields by replicate are presented in Appendix Table No. 20.

Winter Grains

Two winter grain nurseries were established during the fall and winter of 1961.

One nursery was established in the Prineville area and was split with the winter wheat seeded on the Jack Vice farm and the barley on the Stanley Brown farm. The soil types for these locations are not known. The cropping history was not obtained at the Brown location, however, the farmer follows the alfalfa, potato and grain rotation. The winter wheat at the Vice location was seeded in land with the following cropping history:

<u>Year</u>	<u>Crop</u>	<u>Fertilizer</u>
1957	Alfalfa	Sulfur
1958	Burt Wheat	none
1959	Potatoes	
1960	Burt Wheat	none

During the 1961 season, Burt wheat was seeded in the remainder of the field with 200 pounds of Ammonium sulphate and 200 pounds superphosphate applied to the entire field.

The second nursery was seeded March 9, 1962. The late seeding date was used to determine the success of winter wheat and winter barley when seeded in late winter. Much of the winter grain seeded in Deschutes and Crook counties follows potatoes and it is often impossible for the farmer to seed before February. When other work or the weather interferes, the

Table No. 13

Summary of the Yield and Agronomic Results of the Spring Oat Nursery
Grown on the Kenneth Harris Farm, Madras, Oregon, 1961

Variety or Line	Pedigree	Average Yield Bu./Acre	Significance 5% Level (1)	Average Bu. Wt. Pounds	Plant Height Inches	Heading Date
Overland	4181	107.1		33.50	32	6/16
(BXA) X Iogold X (VXR)	6612	103.6		37.25	33	6/19
C.I. 4189 X Overland	6613	96.2		37.00	37	6/19
C.I. 7263	7263	91.2		38.00	38	6/17
Cody	3916	90.9		38.00	32	6/18
Weibulls 16004	7257	88.4		37.75	36	6/16
Park	6611	83.2		37.75	38	6/19
Marne	—	82.1		36.00	37	6/19
Gentore	3865	81.5		37.25	36	6/17
Clinton X Overland ²	5933	78.3		36.50	33	6/18
Victory	1145	71.8		37.00	41	6/18
S 225 (Milford)	—	67.3		34.50	36	6/20

Coefficient of Variation - 12.7%

Seeded March 30, 1961

Harvested August 2, 1961

(1) Any two varieties spanned by the same line are not significantly different in yield.

farmer is confronted with the dilemma of having to know how late he can seed winter grains, wheat particularly, and still obtain a reasonably successful crop.

The nursery was established on the Lawrence Allen farm, Tumalo, Oregon. Prior to 1960 the land had been in alfalfa and orchard grass for ten or fifteen years. The sod was turned under with a liberal application of barnyard manure. Oats was seeded in 1960 and 400 pounds of ammonium sulphate was applied. The crop yield was about one ton of oats per acre.

Winter Wheat

The results of the two winter wheat nurseries are shown in Tables Nos. 14 and 15. Considering the difference in planting dates, it is remarkable that the varieties proved as much alike in the nurseries as they did. The average yield difference between the two nurseries should not be mistakenly ascribed to the planting dates. The two areas are enough different in climate and soil that these yield differences could exist with seedings on the same date.

The pronounced winter habit of Pullman Sel. 9, Gaines, 14X53 Sel. 58 and Sel. 8, Itana, Omar, Kharkof, Rio-Rex X Athena P63, and the Norin 10 X Staring selections makes these varieties and lines of doubtful value for late seeding in the Central Oregon area. Of the newer varieties, Burt appears to be fairly well adapted to late seedings. Gaines yielded well even though it was very late heading.

Under Central Oregon cropping conditions, Gaines does not appear to have any yield advantage over Burt or several of the newer selections, however, it does have the advantage of shorter straw and rust resistance when compared to Burt. Gaines pronounced winter habit may make it more winter hardy than Burt, while presenting a problem in those years when the farmers are confronted with a late seeding date.

The new selections and varieties are making it increasingly difficult to justify the hard red winter varieties in an irrigated winter wheat nursery. Appendix Tables 21 and 22 present the winter wheat yields by replication.

Winter Barley

The barley nurseries were seeded on November 24 at the Prineville location and March 9 at the Tumalo location. The results of these seedings are presented in Tables No. 16 and 17. The results indicate that the varieties performed relatively the same regardless of the time of seeding.

At both locations a Tennessee Upright selection, Wautauga, was an

Table No. 14

Summary of Yield and Agronomic Results of the Winter Wheat Nursery
Grown on the Jack Vice Farm, Prineville, Oregon, 1961

Variety or Line	Pedigree	Average Yield Bu./Acre	Significance 5% Level	Average Bu. Wt. Pounds	Average Plant Ht. in Inches	Stripe ⁽¹⁾ Rust 6/15/61
14X53 Sel. 9	13449	92.2		60.00	34	-
14X53 Sel. 58	13447	86.7		60.75	38	-
Pullman Sel. 9	13432	74.8		60.50	37	T
Burt	---	73.0		61.50	47	/
Gaines	13448	69.0		60.00	33	-
Rio-Rex X Cheyenne	12925	68.4		62.00	49	T
Rio-Rex X Athena (P63)	---	65.8		58.00	46	/
Columbia	12928	64.5		60.50	50	/
Orfed X Wasatch	12943	62.8		61.75	49	/
Kharkof	1442	61.5		61.75	51	/
Omar	11689	59.9		59.75	50	/
Itana	12933	59.3		59.50	51	/
Orfed X Elgin X Elmar(380)	---	58.9		59.50	48	/
Norin 10 X Staring 1673	13273	57.3		58.00	31	-
Norin 10 X Staring 1744	13275	43.9		53.00	30	T

Coefficient of Variation - 9.1%

Seeded November 3, 1960
Harvested August 8, 1961

Ratings: - No rust
T Trace
/ Rust Present

(1) The rust in this nursery was considered to be stripe rust, however, the disease was not examined by a pathologist. In no case was the amount of rust considered severe enough to be economically important.

Table No. 15

Summary of the Yield and Agronomic Results of the Winter Wheat Nursery
Grown on the Lawrence Allen Farm, Tumalo, Oregon - 1961

Variety or Line	Pedigree	Average Yield Pu./Acre	Significance 5% Level	Average Pu. Wt. Pounds	Heading Date
Burt	---	50.5	 	62.50	6/22
Pullman Sel. 9	13432	49.2		62.50	6/30
Gaines	13448	47.3		62.75	(1)
Orfed X Elgin X Elmar (380)	---	45.7		61.50	6/22
14X53 Sel. 58	13447	44.5		61.50	(1)
Orfed X Wasatch	12943	43.7		64.25	6/20
Rio-Rex X Cheyenne	12225	41.8		63.50	6/25
14X53 Sel. 9	13449	41.2		62.50	6/29
Columbia	12928	39.2		63.50	6/24
Itana	12933	38.0		62.75	7/1
Omar	11689	37.4		60.75	6/30
Kharkof	1442	37.3		63.00	6/29
Norin 10 X Staring 1744	13275	37.2		56.75	(1)
Rio-Rex X Athena P63	---	28.4		58.25	(1)
Norin 10 X Staring 1673	13273	25.8		56.50	(1)

Coefficient of Variation - 15.6%

Seeded March 9, 1961
Harvested August 5, 1961

- (1) Headed several days later than July 1, 1961
(2) Any two varieties spanned by the same line are not significantly different in yield.

Table No. 16

Summary of Yield and Agronomic Results of the Winter Barley Nursery
Grown on the Stanley Brown Farm, Prineville, Oregon, 1961

Variety or Line	Pedigree	Average Yield Bu./Acre	Significance 5% Level	Average Bu. Wt. Pounds	Plant Height Inches
Corvallis 36495	6367	105.1	I	46.50	51
Upright (Wautauga)	9172	105.0		46.50	52
B120-78-10 (Wocus)	8059	103.8		45.25	51
Hudson	8067	92.4		52.25	51
Alpine	9578	88.3		43.50	49
B570-8	10118	87.4		39.75	46
B571-2	10116	83.5		43.75	50
Olympia	6107	79.2		45.25	54
Oklahoma 1005 (Rogers)	9174	79.2		46.50	54
Bonneville	7248	59.2		43.50	44
Winter Club	592	44.8		42.50	46

Coefficient of Variation - 8.2%

Seeded November 24, 1960
Harvested July 21, 1961

Table No. 17

30.

Summary of Yield and Agronomic Results of the Winter Barley Nursery
Grown on the Lawrence Allen Farm, Tumalo, Oregon - 1961

Variety or Line	Pedigree	Average Yield Bu./Acre	Significance 5% Level (1)	Average Bu. Wt. Pounds	Heading Date
Upright (Wautauga)	9172	87.8		44.00	6/16
Oklahoma 1005 (Rogers)	9174	77.4		46.00	6/22
Alpine	9578	76.4		48.00	6/26
Corvallis 36495	6367	73.0		47.00	6/17
B 571-2	10116	70.9		46.25	6/18
B 120-78-10 (Wocus)	8059	66.6		42.50	6/22
Hudson	8067	64.4		51.50	6/17
Olympia	6107	63.9		44.25	6/18
B 570-8	10118	56.0		41.50	6/19
Bonneville	7248	38.3		41.75	6/26

Coefficient of Variation - 16%

Seeded March 9, 1961
Harvested August 5, 1961

Winter Club was also seeded in this nursery, but was very immature at time the other varieties were harvested and was abandoned.

Alpine and Upright exhibited the greatest tolerance to spring frosts.

With the exception of Winter Club, all varieties ripened with a 3 or 4 day period around Aug. 2, 1961.

(1) Any two varieties spanned by the same line are not significantly different in yield.

outstanding variety. During the years when winter barley nurseries have been successful, 5 out of 8, Wautauga has been consistently the top variety yielding 126% of Olympia. The varieties Santiam, Rogers and Wocus, a hardy spring type barley, have also performed well.

At the Prineville location, Corvallis 36495, Wautauga and Wocus were significantly higher yielding than any of the commonly grown winter barleys. Alpine was not significantly different from the top yielding varieties at the Tumalo location, however, Wautauga was significantly higher yielding than Olympia and Winter Club. Actually, yields were not taken from Winter Club at the Tumalo location. It had a very thin stand, as a result of frost injury, and was extremely late maturing and was not harvested. Appendix tables 23 and 24 present the winter barley yields by replication for the two locations.

Yield in Bushels Per Acre by Replicate and Average for Fourteen Spring Wheat Varieties or Lines
Grown on the Kenneth Harris Farm, Madras, Oregon, 1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
Federation	4734	36.0	38.0	39.4	41.2	38.7
Lemhi	11415	37.8	30.7	32.0	32.4	33.2
Marfed	11916	51.5	48.1	53.5	52.2	51.3
Onas 53	13069	41.2	39.6	44.5	43.6	42.2
Lemhi 53	13258	32.6	37.4	34.2	31.8	34.0
Kenhi	13268	45.4	46.8	51.9	52.9	49.3
Orfed	11913	49.9	43.9	43.5	44.4	45.4
Federation 41	12230	39.1	35.3	44.2	38.5	39.3
Henry	12265	50.2	44.4	50.8	59.5	51.2
Baart 46	12385	41.3	39.1	41.0	49.8	42.8
Atson	-----	44.8	38.7	44.0	45.6	43.3
Kenya X Lemhi ² 50-13405	12948	49.7	44.6	44.2	41.9	45.1
Svenno	-----	55.5	59.1	57.0	52.5	56.0
52-AB-9702	13435	43.8	38.6	41.6	46.3	42.6

Seeded March 30, 1961

Harvested August 12, 1961

Yield in Bushels Per Acre by Replicate and Average for Twenty Spring Barley Varieties or Lines
Grown on the Kenneth Harris Farm, Madras, Oregon, 1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
B571-23	-----	158.1	121.5	122.9	106.5	127.3
Hannchen	531	107.7	100.0	107.0	98.5	103.3
Trebi	936	111.4	90.0	100.5	94.4	99.1
51-AB-5348	10526	110.2	109.8	101.0	84.0	101.3
B571-5	10115	121.4	105.2	109.9	108.7	111.3
B571-2	10116	133.0	126.3	111.0	98.0	117.1
B570-8	10118	128.9	110.5	99.0	103.3	110.4
B571-11	-----	132.3	125.0*	124.9	118.3	125.1
Ezond X Frontier Wyo. Sel. 462	9184	117.1	103.7	118.1	121.5	115.1
Hiland	9530	97.3	110.0	105.5	116.6	107.4
B567-3	10119	108.1	101.5	105.5	87.0	100.5
B855-14-23 (Hulless)	10641	111.2	122.5	105.3	101.3	110.1
B855-14-2 (Hulless)	-----	98.4	95.5	91.5	77.1	90.6
Bonneville	7248	101.3	100.6	100.4	105.0	101.8
B855-16-5 (Hulless)	-----	84.6	120.0	107.0	106.1	104.4
4363-32	10639	103.9	97.3	106.3	103.9	102.9
51-AB-5396	10525	130.5	111.2	113.0	102.8	114.4
Firlbecks III	10088	103.1	111.7	107.5	106.8	107.3
51-AB-4706	10121	110.8	110.0	130.5	108.1	114.9
Glacier X Titan (Unitan)	10421	102.5	86.5	97.9	92.9	95.0

Seeded March 30, 1961

Harvested August 2, 1961

* One-half sample lost. Average of other three replicates used in making estimate.

Appendix Table No. 20

Yield in Bushels Per Acre by Replicate and Average for Twelve Spring Oat Varieties or Lines
Grown on the Kenneth Harris Farm, Madras, Oregon
1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
Victory	1145	71.6	75.2	67.1	73.1	71.8
Overland	4181	110.3	114.8	110.2	93.2	107.1
Centore	3865	101.9	65.6	97.9	60.7	81.5
Cody	3916	97.3	105.0	73.6	87.7	90.9
Weibulls 16004	7257	75.8	88.2	101.4	88.2	88.4
(B x A) x Iogold x (V x R)	6612	100.7	117.2	106.4	90.2	103.6
CI 4189 x Overland	6613	99.0	105.5	87.1	93.3	96.2
Clinton x Overland ²	5933	86.1	79.1	80.8	67.2	78.3
C.I.	7263	112.9	109.0	75.9	66.9	91.2
Marne	----	73.8	88.1	91.9	74.6	82.1
S 225 (Milford)	----	69.4	63.6	77.6	58.7	67.3
Park	6611	84.4	84.7	83.4	80.2	83.2

Yield in Bushels Per Acre by Replicate and Average for Fifteen Winter Wheat Varieties or Lines
Grown on the Jack Vice Farm, Prineville, Oregon, 1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
Burt	-----	69.5	77.6	70.7	74.1	73.0
Omar	11689	54.7	56.2	67.7	60.8	59.9
Rio-Rex X Cheyenne	12925	71.5	70.5	66.9	64.8	68.4
Norin 10 X Staring 1673	13273	50.1	66.8	45.4	66.9	57.3
Norin 10 X Staring 1744	13275	50.1	41.8	48.9	34.7	43.9
Pullman Sel. 9	13432	85.4	71.3	79.4	63.2	74.8
Itana	12933	58.9	60.0	63.1	55.1	59.3
Columbia	12928	56.0	69.3	67.3	65.5	64.5
Kharkof	1442	65.5	60.2	64.4	55.9	61.5
Orfed X Elgin X Elmar (380)	-----	57.1	66.1	59.1	53.1	58.9
Rio-Rex X Athena (P63)	-----	63.5	64.2	68.8	66.8	65.8
Orfed X Wasatch	12943	66.4	66.1	63.7	54.9	62.8
14X53 Sel. 9	13449	83.7	94.6	94.8	95.8	92.2
Gaines	13448	66.8	75.3	73.1	60.7	69.0
14X53 Sel. 58	13447	91.0	96.4	80.4	79.1	86.7

Seeded November 3, 1960

Harvested August 8, 1961

Appendix Table No. 22

Yield in Bushels Per Acre by Replicate and Average for Fifteen Winter Wheat Varieties or Lines
Grown on the Lawrence Allen Farm, Tumalo, Oregon, 1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
Burt	-----	55.9	43.8	47.2	55.1	50.5
Omar	11689	43.2	38.3	34.0	34.0	37.4
Rio-Rex Cheyenne	12925	31.9	43.9	44.7	46.5	41.8
Norin 10 X Staring 1673	13273	29.2	34.8	18.7	20.3	25.8
Norin 10 X Staring 1744	13275	39.8	27.0	52.2	29.8	37.2
Pullman Sel. 9	13432	51.9	51.7	49.4	43.9	49.2
Itana	12933	38.6	37.0	41.4	34.9	38.0
Columbia	12928	35.9	47.3	34.5	39.1	39.2
Kharkof	1442	42.9	36.2	32.0	38.2	37.3
Orfed X Elgin X Elmar (380)	-----	45.6	45.3	41.0	51.0	45.7
Rio-Rex X Athena (P63)	-----	27.3	33.8	33.8	18.8	28.4
Orfed X Wasatch	12943	42.2	42.2	46.5	44.0	43.7
14X53 Sel. 9	13449	35.4	53.9	40.4	35.2	41.2
Gaines	13448	42.1	51.5	53.3	42.1	47.3
14X53 Sel. 58	13447	38.6	39.4	50.7	49.3	44.5

Seeded March 9, 1961
Harvested August 5, 1961

Appendix Table No. 23

Yield in Bushels Per Acre by Replicate and Average for Eleven Barley Varieties or Lines
Grown in the Winter Barley Nursery, on the Stanley Brown Farm, Prineville, Oregon, 1961

Yield in Bushels Per Acre
By Replicate

Variety or Line	Pedigree	I	II	III	IV	Average Yield
Winter Club	592	45.2	43.1	47.6	43.3	44.8
Olympia	6107	77.7	74.2	80.5	84.2	79.2
Corvallis 36495	6367	99.0	108.1	108.1	105.3	105.1
Upright (Wautauga)	9172	94.0	111.0	117.8	97.2	105.0
Oklahoma 1005 (Rogers)	9174	78.0	79.1	84.0	75.7	79.2
Hudson	8067	92.6	88.8	98.0	90.1	92.4
Bonneville	7248	54.5	57.1	74.2	51.0	59.2
B570-8	10118	72.1	88.9	104.8	83.7	87.4
B571-2	10116	80.7	95.5	79.0	78.6	83.5
B120-78-10 (Wocus)	8059	92.6	106.9	100.1	115.8	103.8
Alpine	9578	76.9	86.9	101.4	88.1	88.3

Seeded November 24, 1960
Harvested July 21, 1961

Appendix Table No. 24

Yield in Bushels Per Acre by Replicate and Average for Thirteen Barley Varieties or Lines
Grown in the Winter Barley Nursery, Lawrence Allen Farm, Tumalo, Oregon, 1961

Variety or Line	Pedigree	Yield in Bushels Per Acre By Replicate				Average Yield
		I	II	III	IV	
Winter Club (1)	592	—	—	—	—	
Olympia	6107	68.1	62.1	61.5		63.9
Corvallis 36495 (Santiam)	6367	74.3	65.5	79.1		73.0
Upright (Wautauga)	9172	85.2	89.0	89.1		87.8
Oklahoma 1005 (Rogers)	9174	66.8	88.2	77.1		77.4
Hudson	8067	65.8	76.9	50.6		64.4
Bonneville	7248	45.6	33.1	36.1		38.3
B570-8	10118	63.8	65.2	39.1		56.0
B571-2	10116	61.4	70.2	81.1		70.9
B120-78-10 (Wocus)	8059	62.7	89.0	48.1		66.6
Alpine	9578	66.8	90.1	72.4		76.4

Seeded March 9, 1961
Harvested August 5, 1961

(1) Not harvested because of heavy frost damage and late date of maturity.