

## Winter Grain Nurseries

The winter grain nurseries were established under rather dry conditions, and probably the full impact of the drought was never really overcome during the early part of the growing season. The Madras seedings were made approximately the first of December and the Redmond Nursery was made on the 22nd and 23rd of February.

### Winter Wheat

The yields reflect the poor conditions and relatively late planting dates at both locations. The Redmond location, planted late in February, also indicated that the planting date may be too late for some of the new lines from OSU. Whereas these lines were among the highest yielding at Madras, they were uniformly at the bottom of the scale at Redmond. At Redmond, these lines were very late in heading, and, in the case of 61-1458, never really matured. This condition suggests relatively more rigid vernalization requirements for these lines, when compared to the more commonly grown winter wheats.

Tables No. 15 and 16 present the yields and bushel weight of the varieties and lines grown at the two locations. At Madras, 63-112-66-4 was the high-yielding line, followed by Gaines and Nugaines. The Redmond location has a much different order of yield, with Nugaines, Omar and Gaines being high-yielding and 64-112-66-4 being well down the line in yield. The results confirm previous observations in regard to the yields of Gaines and Nugaines. That is, that when conditions are less than ideal for the production of winter wheat, Mugaines has the broader range of adaptability.

Table No. 17 shows the head type, glume color, presence or absence of awns, kernel color and plant height in addition to bushel weight and yield for the varieties and lines grown during 1968.

Appendix Tables No. 29 and 30 present the yield by replicate.

### Winter Barley

In comparing the two nurseries, Madras and Redmond, and assuming that the difference in performance is due to date of seeding and not to other possible variables, then, excluding Wade and Cascade x Mocus 59-15, the varieties exhibited a remarkable reversal of yield potential (See Tables No. 18 and 19). Luther, which is high-yielding at the earlier seeding date, is among the lower-yielding at the late seeding date. The yields also indicate that winter barlies do not produce well when seeded late. Even the earliest date seeded was too late for satisfactory grain yields. The spring barley nursery Table No. 21 would indicate that, if one cannot get winter barley in at a reasonable date, it would be better to plant spring barley with less risk of freezing.

Appendix Tables No. 31 and 32 present the winter barley yields in pounds per acre by replicate.

Table No. 15

Yield and Bushel Weight for the Winter Wheat Varieties and Lines  
Grown by the Central Oregon Experiment Station - Redmond Location - 1968

Variety or Line	Pedigree	Bushel Weight	Average Yield #/Acre	Multiple Range Significance 5%	Average Yield Bu./Acre
Nugaines	13968	60.5	3606		60.12
Omar	13072	58.5	3372		56.21
Gaines	13448	59.3	3360		56.01
(Elgin 19 x Elmar) 111 Sel.4					55.37
813	13645	55.8	3322		53.61
McCall	13842	60.5	3216		48.46
Burt	12696	58.5	2907		48.05
Burt x Itana - 125 MC	13842	60.5	2882		47.69
Omar x 1834-1	13750	57.5	2861		46.59
More	13740	55.8	2795		45.57
P.I. 178383 x Omar <sup>3</sup> 111	-	58.8	2734		44.94
Burt x Itana-220	13868	60.5	2696		44.82
63-112-66-4	-	58.0	2688		43.60
P.I. 178383 x Omar <sup>4</sup> M64-2821	-	57.5	2615		42.14
P.I. 178383 x Omar <sup>3</sup> 194	-	58.0	2528		40.73
Burt x Kenya Farmer (58-2025)	13735	57.5	2444		39.07
(C. D. x 101) Druchamp 67-20	-	57.5	2344		38.87
61-1227-66-7	-	53.0	2332		37.45
63-112-66-2	-	56.5	2246		36.99
Columbia	12928	60.8	2219		30.26
61-1458	-	51.5	1815		
L.S.D. @ 5%			768		
@ 1%			1019		
C.V. %			22.2		
Seeded February 22, 1968					

Table No. 16

Average Yield and Bushel Weight of the Winter Wheat Varieties and Lines  
Grown by the Central Oregon Experiment Station at the Madras Location - 1968

Variety or Line	Pedigree	Bushel Weight	Average Yield #/Acre	Multiple Range Significance 5%	Average Yield Bu./Acre
63-112-66-4		59.3	4828		80.43
Gaines	13448	59.5	4363		72.69
Nugaines	13968	59.3	4254		70.87
(C.D. x 101)Druchamp (67-20)	-	57.3	4023		67.02
61-1227-66-7	-	56.0	3894		64.87
63-112-66-2	-	58.0	3871		64.49
P.I. 178383 x Omar <sup>3</sup> 111		58.0	3714		61.88
Moro	13740	56.0	3586		59.74
Burt x Kenya Farmer (58-2025) (Elgin 19 x Elmar) 111 Sel. 4	13736	56.8	3560		59.31
813	13645	57.3	3560		59.31
McCall	13842	59.3	3553		59.19
61-1458	-	53.3	3361		55.99
Columbia	12928	60.0	3280		54.64
P.I. 178383 x Omar <sup>4</sup> M64-2821	-	57.5	3272		54.51
Omar x 1834-1	13750	57.0	3191		53.16
Burt x Itana - 125 WC	13842	58.8	3175		52.90
Burt x Itana 220	13868	59.8	2973		49.53
P.I. 178383 x Omar <sup>3</sup> 194	-	57.3	2913		48.53
Omar	13072	58.3	2910		48.48
Burt	12696	58.0	2677		44.60
L.S.D. @ 5%			586		
@ 1%			777		
C.V. %			13.1		
Seeded Approx. December 1, 1967					

Table No. 17

Yield and Agronomic Information on the Winter Wheat Varieties and Lines  
Grown by the Central Oregon Experiment Station - Redmond Location - 1968

Variety or Line	Pedigree	Head Type	Glume Color	Awned	Kernel Color	Plant Height Inches	Bushel Weight	Average Yield Bu./Acre
Omar	13072	c	w	no	w	25.2	58.50	56.21
(Elgin 19 x Elmar) 111 Sel. 4								
	13645	c	w	no	red	21.6	55.75	55.37
Omar x 1834-1	13750	c	w	no	w	23.0	57.50	47.69
Burt x Itana-220	13868	elong	br	yes	w	26.2	60.50	44.94
Burt x Itana-125WC	13842	elong	br	yes	red	27.8	60.50	48.05
Burt x Kenya Farmer (58-2025)	13736	elong	w	yes	w	26.0	57.50	40.73
Moro	13740	c	w	no	w	23.8	55.75	46.59
Gaines	13448	elong	w	yes	w	21.2	59.25	56.01
Burt	12696	elong	w	yes	w	27.8	58.50	48.46
Columbia	12928	elong	br	yes	red	26.4	60.75	36.99
McCall	13842	elong	br	yes	red	28.4	60.50	53.61
P.I. 178383 x Omar <sup>3</sup> 111		c	w	no	w	25.6	58.75	45.57
P.I. 178383 x Omar <sup>3</sup> 194		c	br	no	w	24.8	58.00	42.14
P.I. 178383 x Omar <sup>4</sup> M64-2821		c	w	no	w	25.4	57.50	43.60
Nugaines	13968	elong	w	yes	w	21.4	60.50	60.12
63-112-66-2		elong	w	yes	w	22.0	56.50	37.45
63-112-66-4		elong	w	yes	w	24.6	58.00	44.82
61-1458		elong	w	no	w	18.4	51.50	30.26
61-1227-66-7		elong	w	no	w	27.2	53.00	38.87
(C.D. x 101) Druchamp		elong	w	yes	w	20.8	57.50	39.07

Head Type:

c = club

elong = elongated

elong - elongated

Glume Color:

w = white (straw-colored)

br = brown

br - brown

Kernel Color:

w = white

Table No. 18

Yield and Agronomic Information on the Winter Barley Varieties and Lines  
Grown by the Central Oregon Experiment Station - Redmond Location - 1968

Variety or Line	Pedigree	Plant Height Inches	Bushel Wt.	Average Yield #/Acre	Multiple Range Signif. 5%	Average Yield Bu./Acre
Cascade x Wocus 59-17	-	23.6	43.5	2514	I	52.37
Olympia x Wocus 59-57	-	24.4	39.5	2172		45.24
Cascade x Wocus 59-9	-	22.4	43.5	2125		44.26
Cascade x Wocus 59-34	-	24.8	43.5	2106		43.88
Cascade x Bonneville 55-3	-	24.0	43.3	2012		41.76
Cascade x Bonneville 55-10	-	24.4	39.8	1996		41.58
Cascade x Wocus 59-15	-	16.4	47.8	1957		40.76
Luther	-	20.4	42.5	1956		40.74
Alpine	8578	21.8	43.5	1920		39.94
Wade		21.6	43.0	1795		37.39
L.S.D. @ 5%				436		
@ 1%				585		
C.V. %				16.5		
Seeded February 23, 1968						

Table No. 19  
 Average Yield and Bushel Weight for the Winter Barley Varieties and Lines  
 Grown by the Central Oregon Experiment Station - Madras Location - 1968

Variety or Line	Pedigree	Bushel Mt.	Average Yield #/Acre	Multiple Range Signif. 5%	Average Yield Bu./Acre
Luther	-	46.3	3577		74.50
Cascade x Bonneville 55-10	-	44.0	3450		71.86
Cascade x Bonneville 55-3	-	44.9	3399		70.80
Cascade x Wocus 59-9	-	45.4	2824		58.82
Alpine	8578	43.6	2586		53.88
Olympia x Wocus 59-57	-	45.6	2586		53.87
Cascade x Wocus 59-17	-	44.6	2495		51.98
Cascade x Wocus 59-34	-	45.4	2429		50.59
Wade	-	43.4	2350		48.96
Cascade x Wocus 59-15	-	45.0	738		15.38
L.S.D. @ 5%			669		
@ 1%			897		
C.V. %			19.7		
Seeded Approx. December 1, 1967					

Appendix Table No. 29

Yield by Replication for the Winter Wheat Varieties and Lines Grown by the  
Central Oregon Experiment Station - Redmond Location - 1968

Variety or Line	Yield in Pounds Per Acre					Average
	Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V	
Omar	4084	2724	2628	4232	3192	3372
(Elgin 19 x Elmar) 111 Sel. 4						
813	3920	2464	2744	2948	4532	3322
Omar x 1834-1	3368	2340	2664	2960	2972	2861
Burt x Itana - 220	3472	2564	2492	2312	2640	2696
Burt x Itana - 125 WC	2952	2228	2172	3528	3532	2882
Burt x Kenya Farmer (58-2025)	2184	2296	3672	1998	2068	2444
Moro	2820	2152	2924	2444	3636	2795
Gaines	3100	2280	2612	4540	4268	3360
Burt	3040	2244	2388	2696	4168	2907
Columbia	2988	1528	1452	1976	3152	2219
McCall	2728	2880	3008	3464	4000	3216
P.I. 178383 x Omar <sup>3</sup> 111	2336	2396	2500	2504	3932	2734
P.I. 178383 x Omar <sup>3</sup> 151	1844	2076	2816	2248	3656	2528
P.I. 178383 x Omar <sup>4</sup> M 64-2821	1524	2400	2976	2380	3796	2615
Nugaines	1848	2568	3148	4920	5548	3606
63-112-66-2	1824	2116	2168	2604	2520	2246
63-112-66-4	2196	1920	3228	2016	4084	2689
61-1458	1864	1472	1436	1912	2392	1815
61-1227-66-7	2192	1744	2548	1816	3360	2332
(C.D. x 101) Druchamp 67-20	2384	2728	1900	2428	2280	2344
L.S.D. @ 5%						768
@ 1%						1019
C.V.%						22.2
Seeded February 22, 1968						

Appendix Table No. 30

Yield by Replicate in Pounds Per Acre for the Winter Wheat Varieties and Lines  
Grown by the Central Oregon Experiment Station at the Madras Location - 1968

Variety or Line	Pedigree	Yield in Pounds Per Acre					Average
		Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V	
Omar	13072	2504	2796	2908	3016	3324	2909.6
(Elgin 19 x Elmar) III Sel. 4							
813	13645	2588	3028	3864	3512	3908	3560.0
Omar x 1834-1	13750	2840	3836	3064	3068	3148	3191.2
Burt x Itana - 220	13868	3200	2620	3028	3328	2688	2972.8
Burt x Itana - 125 WC	13842	3100	3576	2520	3864	2816	3175.2
Burt x Kenya Farmer (58-2025)	13736	3268	3212	3324	4100	3896	3560.0
Moro	13740	3004	3708	3976	3200	4040	3585.6
Gaines	13448	3714	4964	4428	3864	4844	4362.8
Burt	12696	2432	2944	2056	3436	2516	2676.8
Columbia	12928	3432	3444	3036	3128	3360	3280.0
McCall	13842	3160	4284	3372	3484	3464	3552.8
P.I. 178383 x Omar <sup>3</sup> 111		3068	4364	4024	3352	3764	3714.4
P.I. 178383 x Omar <sup>3</sup> 194		2524	3224	2804	3224	2788	2912.8
P.I. 178383 x Omar <sup>4</sup> MG4-2821		2404	3524	2920	3252	4260	3272.0
Mugaines	13968	3032	4928	4620	5248	3444	4254.4
63-112-66-2		2948	3764	3776	4072	4796	3871.2
63-112-66-4		3444	4880	4564	5416	5836	4828.0
61-1458		2880	2944	3668	3960	3352	3360.8
61-1227-66-7		3388	4480	4180	4368	3056	3894.4
(C.D. x 101) Druchamp (67-20)		3032	3864	4332	4648	4240	4023.2
L.S.D. @ 5%							586
@ 1%							777
C.V. %							13.1
Seeded approx. December 1, 1967							



Appendix Table No. 31

Yield by Replication of the Winter Barley Varieties and Lines Grown by the  
Central Oregon Experiment Station - Redmond Location 1968

Variety or Line	Pedigree	Yield in Pounds Per Acre					Average
		Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V	
Alpine	8578	1744	2048	2360	1704	1732	1920
Luther		2084	1712	1624	2244	2116	1956
Wade		1400	1884	1680	2100	1912	1795
Cascade x Wocus 59-9	-	2128	1524	2088	2464	2420	2125
Cascade x Wocus 59-15	-	1920	1844	2224	1868	1928	1957
Cascade x Wocus 59-17	-	2236	2092	2752	2656	2836	2514
Cascade x Wocus 59-34	-	1988	1760	1600	2600	2584	2106
Cascade x Bonneville 55-3	-	1580	2084	2256	2760	1380	2012
Cascade x Bonneville 55-10	-	1488	2360	2416	2020	1696	1996
Olympia x Wocus 59-57	-	1720	2076	2112	2984	1968	2172
L.S.D. @ 5%							436
@ 1%							585
C.V. %							16.5
Seeded February 23, 1968							

Appendix Table No. 32

Yield by Replicate in Pounds Per Acre for the Winter Barley Varieties and Lines  
Grown by the Central Oregon Experiment Station - Madras Location - 1968

Variety or Line	Pedigree	Yield in Pounds Per Acre					Average
		Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V	
Alpine	8578	1840	2816	2344	3068	2864	2586
Luther		3192	3280	3896	3852	3664	3577
Wade		3100	2964	1668	2356	1664	2350
Cascade x Wocus 59-9		1980	3292	3424	2712	2712	2824
Cascade x Wocus 59-15		372	400	1224	816	880	738
Cascade x Wocus 59-17		2996	2308	2232	2860	2080	2495
Cascade x Wocus 59-34		1700	2136	2952	2924	2432	2429
Cascade x Bonneville 55-3		3572	3728	3356	2968	3372	3399
Cascade x Bonneville 55-10		3540	2860	2468	4852	3528	3450
Olympia x Wocus 59-57		1960	2472	2880	3040	2580	2586
L.S.D. @ 5%							669
@ 1%							897
C.V.%							19.7
Seeded Approx. December 1, 1967							