Spring Cereal Grain Varietal Nurseries

The summer of 1967 was too hot for all cereal grains and particularly hard on irrigated spring grains. The spring grains were scorched by the heat regardless of the soil moisture condition. The Madras nursery was caught by the heat in a rather dry condition and was hurt to a greater extent than the Redmond nursery.

Spring Wheat

Tables No. 20 and 21 present the yield and agronomic data for the several varieties and lines grown at Madras and Redmond and in essence indicate that on a hot summer the early varieties are less damaged than the late varieties. For example, the recently released Adams (Idaed X Burt Sel 42-5) (See Table No. 21) is the high yielding variety and Federation is one of the low yielding varieties, but Adams was dropped from the Madras seedings in 1966 because of its previous poor performance during normal or cool years. Federation is usually very near the top in yield and during 1967 was one of the poorest.

The plant height data in Table No. 20 probably indicates that lines and varieties other than 64Ab9405 are too tall for modern wheat culture, unless they are highly resistant to lodging. If spring grains are to have a role in the future on irrigated farms, the yields are necessarily going to increase. This means high nitrogen rates with plants growing near lodging limits and past experience indicate that in general the tall varieties will lodge first.

The low bushel weights are a further indication that these spring wheats were cut short by the hot weather.

Appendix Tables No. 36 and 37 present the yield of the two nurseries by replicate.

Spring Oats

The yield and agronomic data taken from the Madras and Redmond locations are shown in Tables No. 22 and 23. In three of the four nurseries grown during the last two years Cayuse has been the top yielding variety and in the fourth there was no significant difference in yield between it and the high yielding variety. Since this line has been released, it should be considered for release and recommended in Central Oregon. It is a late maturing variety, but apparently more heat tolerant than most lines, since it has yielded well above any other variety or line at Madras and Redmond during 1967. Park has not performed well at the Madras location. The data do not indicate whether this is a failing of the variety or whether it is by chance.

The yield by replicate is shown for the two locations in Appendix Tables No. 38 and 39.

Table No. 20

Yield and Agronomic Data for Twelve Varieties or Lines of Spring Wheat
Grown at the Madras Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lb/A	Yield 5% Significance	Plant Height Inches	Lodging %	Bushel Weight Pounds	Kernel Color
Idaed x Burt Sel. 48-2		20.98		36.00	0	61.5	R
Premier Fr^2 x $Idaed^5$ 1301	13984	19.95		38.75	0	57.5	W
Burt x KF	13641	18.62		39.75	0	60.5	R
Premier Fr^2 x $Idaed^5$ 1277	13983	18.36		40.75	0	58.0	W
Lee x No.58Tc A61195-46	13979	17.90		38.00	0	55.5	R
No.58Tcx(Tc-KF,III-52-8)A6135	13743	17.76		37.75	0	57.5	R
Eureka-Lemhi x $Idaed^3$ 1300	13980	16.97		38.00	0	57.5	W
Federation 67	13732	16.86		38.00	0	58.5	W
Lemhi 62 x $Idaed^2$ 1264	13982	16.84		38.00	0	58.5	W
[illegible]	13977	15.39		37.00	0	56.0	W
Federation	4734	15.27		36.00	0	57.5	W
Lemhi 62 x C.I.13636 1269	13981	15.21		35.50	0	56.5	W
L.S.D. @ 5%			ns				
C.V. %			25.5				
Seeded March 18, 1967							

Table No. 21

Yield and Agronomic Data for Twenty Varieties or Lines of Spring Wheat Grown at the Redmond Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lbs/A	Yield 5% Significance	Bushel Weight Pounds
Idaed x Burt Sel. 42-5 (Adams)	13722	28.87		62.00
Burt x KF	13641	28.01		61.50
Idaed x Burt Sel. 48-2		24.79		62.50
Burt x Onas 52 Sel.466	Wn.4468	24.54		60.00
Lemhi 62 x Idaed^2 1264	13982	22.97		60.00
Lemhi	11415	21.84		59.50
64 Ab 9405	13977	21.29		58.50
Premier Fr^2 x Idead 1301	13984	20.59		60.00
Onas 52 x Idaed Sel.18-1	13721	20.59		58.00
Federation 67	13732	20.50		60.00
Idaed 59	13631	20.48		60.50
Eureka - Lemhi x Idaed^3 1300	13980	20.43		58.50
Lemhi 66	13969	19.53		59.50
Burt x KF (58-2025)	13736	18.30		59.00
Lemhi 62 x C.I.13636 1269	13981	18.25		59.00
No. 58 Tc x (Tc-KF, III-52-8) A6135	13743	17.59		58.00
Premier Fr^2 x Idead 1277	13983	17.42		60.00
Federation	4734	17.30		59.00
Lee x No. 58 Tc, A61195-46	13979	16.91		58.50
L.S.D. @ 5%		5.19		
C. V. %		19.6		
Seeded March 21, 1967				

Table No. 22

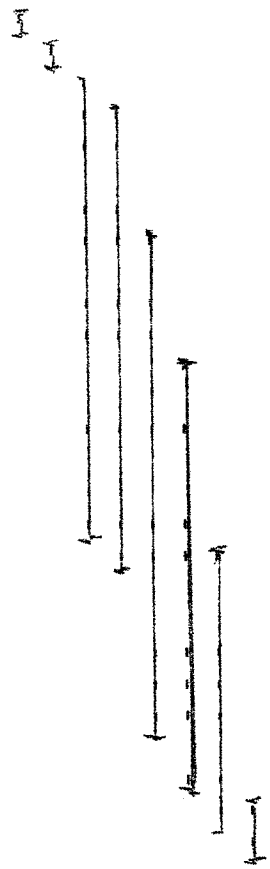
Yield and Agronomic Data for Twelve Varieties or Lines of Spring Oats
Grown at the Madras Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lbs/A	5% Significance Yield	Plant Height Inches	% Lodging	Bushel Weight Pounds
Cayuse (Craig x Alamo)	8263	28.00		35.00	0	35.00
Orbit	7811	21.09		36.25	0	35.00
Au Sable	7670	20.28		40.50	0	36.00
Br x Garry x Clinton 3 x Clinton 4 x C.I. 5093	7815	19.32		40.25	0	36.00
Garry 3 x Clinton 2 x Boone x Cartier	7982	18.41		42.25	0	35.50
Sioux	8172	17.91		37.25	0	31.00
Bingham	7588	17.36		38.25	1.25	31.00
Garry Sel.4 x Clinton x Victory3 xVictoria2x Hajua x Banner	8048	16.88		44.75	2.50	31.00
Lodi	7561	16.78		40.25	0	30.50
Stormont	8170	16.01		39.50	0	33.50
Minn.II -22-220	2874	15.48		34.00	0	32.50
Park	6611	15.15		38.50	17.50	32.00
L.S.D. @ 5%		4.57				
C. V. %		17.1				
Seeded March 17, 1967						

Table No. 23

Yield and Agronomic Data for Eighteen Varieties or Lines of Spring Oats Grown at the Redmond Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lbs/A	Yield 5% Significance	Bushel Weight Pounds
Cayuse (Craig x Alamo)	8263	28.57		37.50
Minn.II 22-220	2874	23.22		36.00
Park	6611	19.47		39.50
Orbit	7811	19.16		34.50
Victory	1145	19.10		37.50
Zanster	7476	18.42		36.50
Au Sable	7670	17.11		40.00
Bond x Anth.^{2} x Overland (47Ab2685)	7960	16.97		34.50
Bingham	7588	16.74		34,00
Beaver x Garry 2 x Clinton 3 x Clinton 4 x C.I. 5093	7815	16.54		37.50
Garry 3 x Clinton 2 x Boone x Cartier	7982	16.21		36.50
58 Ab 2781	7572	15.48		35.50
Garry Sel.4 x Clinton x Victory 3 x Victoria 2 x Hajira x Banner	8048	14.30		33.50
Sioux	8172	14.25		32.00
Basin	5346	14.18		36.00
58 Ab 2777	7591	12.89		36.00
Lodi	7561	11.69		37.00
Stormont	8170	9.21		27.50
L.S.D. @ 5%		3.22		
C. V. %		15.1		
Seeded March 21, 1967				



Spring Barley Nurseries

Yield and Agronomic data taken from the Madras and Redmond spring barley nurseries are shown in Tables No. 24 and 25. The yield data was extremely variable at each location. The low bushel weights on all varieties and lines also reflect the effect of the very warm summer. 51 Ab 5348, which has been one of the high yielding lines for several years, showed a serious weakness at the Madras location. It apparently has a very weak straw. Further comparisons of this line should be under conditions favorable to lodging.

A field comparison of 51Ab5348 and Trebi was made at the Redmond station. The seeding was made in April and the growth was rather poor. The average yield of 51Ab5348 was 2704 Lbs/A as compared to 1962 Lbs/A for Trebi. The bushel weight was 42 pounds per bushel for each. As mentioned above, further testing of 51Ab5348 should be under conditions favorable to lodging.

Appendix Tables No. 40 and 41 present the yield of the two nurseries by replicate.

Table No. 24

Yield and Agronomic Data for Fourteen Varieties or Lines of Spring Barley
Grown at the Madras Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lbs/A	5% Significance Yield	Plant Height Inches	Lodging %	Bushel Weight Pounds
51 Ab 5348	10526	31.40		36.50	66.25	44.00
Glacier x Mars Mt.58635	13101	31.09		38.50	27.50	41.50
Firlbecks III	10088	29.22		37.00	25.00	48.00
Gem x Triall[3]	13329	28.49		39.50	39.50	47.00
Glacier x Manchuria	11346	27.66		39.50	17.50	44.50
Unitan	10421	27.37		37.00	17.50	44.50
Dickson	10968	25.54		38.75	61.25	45.00
Galt	11770	25.45		37.25	25.00	46.00
Vale	10117	25.31		37.00	10.00	41.50
CCCI x Mt.59745	13330	24.88		37.25	12.50	47.50
Trebi	936	23.72		37.25	52.50	45.00
63 Ab 2986	13328	22.99		34.75	20.00	45.00
63 Ab 2867	13327	22.09		39.50	47.50	44.50
Hannchen	531	21.85		48.00	51.25	48.00
L.S.D. @ 5%		ns				
C. V. %		18.5				
Seeded March 18, 1967						

Table No. 25

Yield and Agronomic Data for Fifteen Varieties or Lines of Spring Barley Grown on the Redmond Location of the Central Oregon Experiment Station - 1967

Variety or Line	Pedigree	Average Yield 100 Lbs/A	Yield 5% Significance	Bushel Weight Pounds
CCCI 5461 x Mt.59745	13330	31.51		44.50
Gem x Traill[3]	13329	30.10		43.50
Trebi	936	27.11		41.00
Firlbecks III	10088	26.01		47.50
63 Ab 2867	13327	25.78		42.00
Dickson	10968	24.78		43.00
51 Ab 5348	10526	24.65		41.00
63 Ab 2986	13328	23.85		42.00
Unitan	10421	23.81		39.00
Galt	11770	20.83		40.50
Hannchen	531	20.79		45.00
Vale	10117	20.48		38.00
Glacier x Mars Mt.58635	13101	19.89		33.50
Trebi x Lubin (Steveland)	13100	19.09		39.00
Glacier x Manchuria	11346	17.26		38.50
L.S.D. @ 5%		6.54		
C. V. %		27.2		
Seeded March 21, 1967				

Appendix Table No. 36

Yield by Replicate for Twelve Varieties or Lines
of Spring Wheat Grown on the Madras Location
of the Central Oregon Experiment Station - 1967

Variety or Line	Yield in 100 Pounds Per Acre I	II	III	IV	Ave.
Federation	17.27	15.11	14.35	14.35	15.27
Burt x KF	19.07	20.86	22.10	12.43	18.62
Idaed x Burt Sel.48-2	17.11	27.18	24.46	15.15	20.98
No.58Tc(Tc-KF,III-52-28)A6135	17.51	20.78	18.27	14.47	17.76
Premier Fr^2 x $Idaed^5$ 1277	19.59	18.59	19.43	15.83	18.36
Premier Fr^2 x $Idaed^5$ 1301	27.30	20.86	18.98	12.67	19.95
64 Ab 9405	14.63	19.31	18.03	9.59	15.39
Lemhi 62 x $Idaed^2$ 1264	18.35	19.35	17.63	12.03	16.84
Lee x No.58 Tc A61195-46	14.39	24.34	17.55	15.31	17.90
Eureka-Lemhi x $Idaed^3$ 1300	17.39	17.39	18.71	14.39	16.97
Federation 67	15.29	20.34	18.55	13.27	16.86
Lemhi 62 x C.I. 13636 1269	16.83	19.31	15.11	9.59	15.21
L.S.D. @ 5%					ns
C. V. %					25.5
Seeded March 18, 1967					

Appendix Table No. 37

Yield by Replicate for Twenty Varieties or Lines
of Spring Wheat Grown on the Redmond Location
of the Central Oregon Experiment Station - 1967

Variety or Line	Yield in 100 Pounds Per Acre					
	I	II	III	IV	V	Ave.
Federation	22.30	20.62	18.75	15.07	9.75	17.30
Lemhi	22.86	22.26	21.06	22.18	20.86	21.84
Lemhi 66	23.62	22.30	23.98	15.19	12.55	19.53
Burt x KF	28.34	29.06	28.30	28.66	25.70	28.01
Idaed 59	28.02	26.14	18.71	12.27	17.27	20.48
Burt x KF (58-2025)	18.03	17.63	17.39	20.06	18.39	18.30
Idaed x Burt Sel.42-5	31.82	33.09	22.82	25.38	31.22	28.87
Onas 52 x Idaed Sel.18-1	23.82	21.70	26.98	13.47	16.99	20.59
Burt x Onas 52 Sel.466	28.38	25.10	17.83	32.02	19.35	24.54
Idaed x Burt Sel.48-2	23.80	32.14	37.81	12.91	17.19	24.79
No. 58 Tc x (Tc-KF, III-52-8)	22.02	21.62	12.27	17.15	14.91	17.59
Premier Fr[2] x Idaed 1277	26.58	12.39	22.86	11.35	13.91	17.42
Premier Fr[2] x Idaed 1301	17.47	27.02	24.74	16.03	17.67	20.59
64 Ab 9405	22.78	21.90	22.50	17.27	22.02	21.29
Lemhi 62 x Idaed[2] 1264	25.22	22.06	26.06	21.10	20.42	22.97
Lee x No. 58 Tc, A 61195-46	19.67	24.30	14.39	12.19	13.99	16.91
Eureka=Lemhi x Idaed[3] 1300	23.90	19.63	17.95	19.43	22.26	20.43
Federation 67	26.50	25.86	26.30	18.95	14.91	20.50
Lemhi 62 x CI 13636 1269	17.59	19.75	20.38	17.23	16.31	18.25
L.S.D. @ 5%						5.19
C. V. %						19.6
Seeded March 21, 1967						

Appendix Table No. 41

Yield by Replicate for Fifteen Varieties or Lines of Spring Barley Grown on the Redmond Location of the Central Oregon Experiment Station - 1967

Variety or Line	Yield in 100 Pounds Per Acre					
	I	II	III	IV	V	Ave.
Trebi	30.18	18.43	22.66	19.51	17.67	27.11
Firlbecks III	27.54	23.22	18.99	12.31	21.98	26.01
Unitan	32.46	15.23	20.26	13.43	13.87	23.81
51 Ab 5348	30.30	19.95	18.79	15.63	13.91	24.65
Vale	30.74	16.15	16.32	3.20	15.51	20.48
Glacier x Manchuria	18.11	14.07	14.35	8.71	13.79	17.26
Dickson	30.22	22.66	19.67	10.23	16.34	24.78
Galt	27.98	18.31	10.67	14.39	11.95	20.83
Trebi x Lubin (Steveland)	14.95	13.23	18.63	20.58	8.95	19.09
Hannchen	21.38	20.54	17.99	8.23	15.03	20.79
Gem x Traill[3]	34.49	21.30	23.86	23.50	17.23	30.10
63 Ab 2867	22.94	19.63	26.58	11.83	22.14	25.78
Glacier x Mars Mt. 58635	15.95	25.30	14.55	8.75	14.99	19.89
63 Ab 2986	31.30	16.43	18.63	15.59	13.43	23.85
C.C.C.I. 5461 x Mt. 59745	35.61	31.18	22.78	10.11	26.34	31.51
L.S.D. @ 5%						6.54
C. V. %						27.2
Seeded March 21, 1967						