

Potato Varietal Tests

Two nurseries were established during 1967, one at the Redmond location and the other at the Madras location of the Central Oregon Experiment Station.

The same twenty-four varieties or lines occurred in each nursery. Both nurseries received too much fertilizer and this may have changed the relative placement of the variety in comparison to other years. As nearly as could be calculated, approximately 3500# of 15-10-10 fertilizer was banded at each location.

No early blight was observed at either location, this fact very much affected the relative placement of varieties or lines like Haag, which are highly susceptible to this disease.

While the placement of the varieties varied somewhat at each location (See Tables No. 6 and 7), no variety or line occurring in the top third of the varieties in one nursery occurred in the bottom third of the varieties in the other nursery.

The three red varieties, Red Pontiac, Red Lasoda and La Rouge, were probably the highest yielding varieties of the group. Shoshoni, Monona and Haag produced better under this high fertility low Early Blight relationship than they have in passed years. Norgold and Kennebec did not produce relatively well in this environmental condition. Russet Burbank produced roughly 2/3 the tonnage of the top yielding variety in the Redmond Nursery with 20.8 tons per acre and approximately 3/4 at the Madras Station.

The percentage of No. 1 potatoes was very low at each location. This was very probably due to the interaction of the hot summer x high fertility x irrigation.

The specific gravity of all the varieties was considerably lower at Redmond than at Madras and the yield was much higher. These points probably reflect the difference in irrigation methods. The sprinkler system at Redmond made more nutrients available all of the time while the water penetration problem at Madras, where row irrigation was followed, limited the availability of the nutrients.

Of the varieties shown in Table No. 8, not one variety is capable of competing in the same market as Russet Burbank. Several have russetting, but are round or ovoid rather than long. Many of the varieties are round and have smooth skin.

Yield wise it would not be difficult to replace Russet Burbank and in a normal year many varieties will have a better grade. However, as long as the market is established around a long, white russetted potato with good keeping qualities and relatively high specific gravity, the variety which replaces Russet Burbank in this market will have to be equal to or superior in these qualities. The varieties tested here do not have these qualities. Norgold has the shape and russeting, but generally the yield is low and keeping qualities are poor.

Some of the round, white varieties and lines tend to green in the soil even though they are covered with soil. The greening was not associated with cracks in the soil, but rather the depth of the soil above the tuber.

It is questionable whether there is need to continue with two locations of this experiment and possibly it is needless to continue the testing on a continual basis. Perhaps one testing program in the state could eliminate the large majority of the new material and the local areas test only that material which may have an influence on their market.

Appendix Tables No. 24 and 25 present the Specific Gravity by Replicate and shows the multiple range significance at the five percent level.

Table No. 6

The Yield, Multiple Range Significance, Yield of No. 1 Potatoes, Percentage of Market Grade and Specific Gravity for Twenty-four Varieties or Lines of Potatoes Grown at The Redmond Location of the Central Oregon Experiment Station - 1967

Variety or Line	Total Yield Tons/Acre	Total Yield 5% Significance	Yield No. 1 Tons/Acre	Market Grade Percentage			Specific Gravity
				No. 1	No. 2	Culls	
Red Pontiac	30.72		9.33	31.16	38.17	30.67	1.063
Red Lasoda	29.63		9.19	31.79	34.58	33.63	1.065
La Rouge	28.52		7.01	24.25	40.28	35.47	1.060
Katahdin	26.08		12.48	47.73	30.82	21.46	1.066
Shoshoni	24.14		10.19	42.29	39.32	18.46	1.061
B5144-2	23.91		10.34	43.43	29.64	26.93	1.056
Sebago	23.39		5.13	22.52	44.35	33.13	1.078
Alaskan Russet	23.33		8.36	35.42	25.85	38.72	1.069
Haag	23.08		10.51	44.56	26.92	28.51	1.069
Monona	23.05		11.45	49.66	32.41	17.93	1.065
Russet Rural	22.90		10.45	45.28	31.05	23.68	1.072
B4987-14	22.88		7.16	31.23	32.38	36.39	1.069
B2759-5	22.85		7.90	34.44	30.73	34.82	1.083
Penobscott	22.68		7.13	31.35	38.96	29.69	1.069
B5058-1	22.22		8.76	39.23	24.97	35.79	1.063
Kennebec	22.10		8.73	39.42	30.58	30.00	1.072
Snowflake	21.53		9.88	44.94	28.01	27.05	1.082
Russet Burbank	20.81		12.00	57.35	11.69	30.96	1.071
B4814-2	20.24		8.82	44.27	27.58	28.15	1.067
B5083-1	19.58		10.71	55.17	15.67	29.16	1.069
Norgold	19.47		8.07	42.16	35.38	22.47	1.063
B3820-14	18.18		8.02	43.67	25.62	30.71	1.074
B4987-30	14.83		4.01	28.09	28.21	43.70	1.063
B4784-1	13.34		5.50	40.96	14.80	44.24	1.060
L.S.D.@5%	3.37					.006	
C. V. %	11.96						

Table No. 7

The Yield, Multiple Range Significance, Yield of No. 1 Potatoes, Percentage of Market Grade and Specific Gravity for Twenty-four Varieties or Lines of Potatoes Grown at The Madras Location of the Central Oregon Experiment Station - 1967

Variety or Line	Total Yield Tons/Acre	Total Yield 5% Significance	Yield No. 1 Tons/Acre	Market Grade Percentage			Specific Gravity
				No. 1	No. 2	Culls	
La Rouge	23.28		9.25	39.85	26.26	33.89	1.075
Shoshoni	22.90		8.65	38.73	24.19	37.07	1.078
Monona	20.67		8.25	40.20	26.84	32.96	1.070
Penobscott	19.04		7.50	38.81	13.94	47.25	1.083
B2759-5	18.90		6.10	32.00	14.24	53.76	1.090
Red Lasoda	18.64		7.44	40.43	22.88	36.69	1.077
Red Pontiac	18.44		7.36	39.41	10.51	50.07	1.067
Katahdin	18.15		8.48	46.16	25.43	28.40	1.081
Haag	18.04		5.64	31.42	27.51	41.07	1.082
Russet Rural	17.89		5.27	29.45	24.79	45.76	1.080
Russet Burbank	17.64		6.33	34.95	19.15	45.90	1.085
Sebago	17.24		5.01	29.40	26.73	43.87	1.095
B5144-2	16.41		7.73	47.33	41.03	32.57	1.072
Snowflake	16.29		5.75	35.35	25.36	39.29	1.082
Alaskan Russet	15.98		5.18	32.73	24.91	42.35	1.076
B5058-1	15.46		5.10	32.48	17.49	50.03	1.072
Norgold	12.94		5.67	42.91	18.34	38.74	1.065
B5083-1	12.88		4.90	38.64	13.27	48.08	1.081
Kennebec	12.74		5.87	46.26	15.93	37.81	1.081
B4784-1	11.45		3.69	33.09	15.41	51.50	1.068
B4987-30	10.77		2.40	23.61	26.21	50.18	1.072
B4987-14	10.71		4.35	41.53	16.41	42.06	1.073
B4814-2	10.65		3.78	36.52	9.29	54.19	1.074
B3820-14	9.28		3.86	43.17	16.05	40.79	1.089
L.S.D. @ 5%	4.30						
C.V. %	21.34						

Table No. 8

Physical Characteristics of Twenty-four Varieties or Lines of Potatoes
Grown by the Central Oregon Experiment Station - 1967

Variety or Line	Skin Color	Skin Russetting	Eye Depth	Longitudinal Shape	Cross-section Shape	Remarks
Red Pontiac	Red	slight	deep	round	ovid to round	
Red Lasoda	Red	smooth	med.-deep	round	ovid	
La Rouge	Red	smooth		round-oblong	round-ovid	
Katahdin	White	smooth		round	flat to ovid	
Shoshoni	white	medium	some deep	round	flat to ovid	
B5144-2	white	smooth		long	flat to ovid	small tubers
Sebago	white	slight		round	flat to ovid	
Alaskan Russet	white	heavy		long	round	strong tendency air cracks
Haag	white	medium	deep	round	flat to ovid	deep stem&blossom end pits
Monona	white	smooth	deep	round	ovid	
Russet Rural	white	med-heavy		long	ovid	small tubers
B4987-14	white	slight		round	ovid	
B2759-5	white	slight		round	ovid	small tubers
Penobscott	white	smooth		round	ovid	tendency to green
B5058-1						
Kennebec	white	slight		round to long	flat	
Snowflake	white	smooth		round	flat to ovid	
Russet Burbank	white	heavy		long	flat to ovid	
B4814-2	white	heavy		round	flat to ovid	short dormancy period (1)
B5083-1	white	smooth		round	flat	
Norgold	white	heavy		long	round	
B3820-14	white	smooth				
B4987-30	white	smooth		round	ovid	
B4784-1	white	slight		round	ovid	poor keeper, heavy greening

(1) Breaking dormancy by 12/20 perhaps storage temperatures too high

Appendix Table No. 11

The Effect of Nitrogen, Phosphate and Potassium Fertilizer
Applications on the Yield of Russet Burbank Potatoes

A. E. Albertsen Farm, Powell Butte, Oregon - 1967

Fertilizer Application Pounds Per Acre			Yield of Potatoes in Tons Per Acre By Replicate				
N	P ₂ O ₅	K	I	II	III	IV	Ave.
150	0	0	(2)	9.143	7.901	10.799	9.281
150	160	0		11.316	10.557	8.625	10.166
150	0	75/150		11.075	10.419	10.350	10.615
150	80	0		8.729	8.487	11.385	9.534
150	160	0 (1)		9.591	11.178	9.522	10.097
150	240	0		9.557	12.282	6.279	9.373
150	160	75 (2x2)		9.488	11.454	7.901	9.614
150	160	225 (2x2)		7.901	6.452	12.351	8.901
150	160	450 (2x2)		9.212	11.178	8.039	9.476
150	160	225 (disc)		--	11.661	12.282	11.972
150	160	450 (disc)		8.487	7.452	13.524	9.821
150	160	225 (plow)		6.486	9.177	13.179	9.614
150	160	450 (plow)		10.178	11.661	8.453	10.097
150	160	75/150		6.107	8.832	13.248	9.396
150	160	75/375		9.039	5.555	11.385	8.660
150	80/80	75/375		7.211	6.590	12.351	8.717
150	160	75/150		--	11.247	9.660	10.454
250	160	75/375		--	9.453	12.282	10.868
250	240	75/375		9.833	8.591	11.454	9.959
150	160	75/375 (1)		9.729	9.419	12.213	10.454

(1) No Zinc - All other treatments received 30# Zn SO₄ in band

(2) Replication lost to water rot

Appendix Table No. 12

The Effect of Nitrogen, Phosphate and Potassium Treatments on the Market Grade of Russet Burbank Potatoes Grown on the A. E. Albertsen Farm, Powell Butte, Oregon - 1967

Fertilizer Application Pounds Per Acre			No. 1 %			No. 2 %			Culls %
N	P ₂ O ₅	K	10 oz.+	10 oz.-	Total	10 oz.+	10 oz.-	Total	
150	0	0	4.66	54.66	59.32	2.00	10.00	12.00	28.66
150	160	0	3.34	59.00	62.34	.66	12.00	12.66	25.00
150	0	75/150	2.00	57.66	59.66	2.00	14.34	16.34	24.00
150	80	0	6.66	55.66	62.32	2.00	9.34	11.34	26.34
150	160	0	2.66	56.00	58.66	.66	17.00	17.66	23.66
150	240	0	3.36	56.58	59.94	2.00	3.50	10.50	29.56
150	160	75 (2x2)	2.00	59.00	61.00	6.00	12.00	18.00	21.00
150	160	225 (2x2)	4.74	54.22	58.96	5.70	11.44	17.14	23.88
150	160	450 (2x2)	.66	43.00	43.66	4.34	24.00	28.34	28.00
150	160	225 disc	8.70	49.82	58.52	4.94	18.18	23.12	18.36
150	160	450 disc	8.34	55.00	63.34	3.34	12.34	15.68	21.00
150	160	225 plow	5.34	60.32	65.66	6.00	11.00	17.00	17.34
150	160	450 plow	7.34	52.00	59.34	9.66	11.66	21.32	19.66
150	160	75/150	6.04	52.88	58.92	5.42	14.54	19.96	21.10
150	160	75/375	6.80	53.60	60.40	6.72	10.16	16.88	22.72
150	80/80	75/375	6.78	48.54	55.32	9.84	11.86	21.70	22.98
150	160	75/150	4.56	54.70	59.26	3.04	15.02	18.06	22.66
250	160	75/375	4.62	52.80	57.42	10.80	12.60	23.40	19.18
250	240	75/375	2.66	43.00	45.66	10.34	16.66	27.00	27.34
150	160	75/375	8.00	50.32	58.32	13.00	8.00	21.00	20.66

Appendix Table No. 13

The Effect of Nitrogen, Phosphate and Potassium Fertilizer
Treatments on the Specific Gravity of Russet Burbank Potatoes

A. E. Albertsen Farm, Powell Butte, Oregon - 1967

Fertilizer Application Pounds Per Acre			Specific Gravity By Replicate				
N	P ₂ O ₅	K	I	II	III	IV	Ave.
150	0	0	(2)	1.074	1.077	1.085	1.079
150	160	0		1.079	1.084	1.082	1.082
150	0	75/150 pl		1.073	1.075	1.073	1.074
150	80	0		1.080	1.082	1.079	1.080
150	160	0 (1)		1.080	1.082	1.081	1.081
150	240	0		1.083	1.079	1.078	1.080
150	160	75 (2x2)		1.077	1.081	1.079	1.079
150	160	225 (2x2)		1.075	1.075	1.077	1.076
150	160	450 (2x2)		1.076	1.080	1.069	1.075
150	160	225 disc		1.075	1.081	1.080	1.079
150	160	450 disc		1.077	1.078	1.078	1.078
150	160	225 plow		1.077	1.078	1.078	1.078
150	160	450 pl		1.072	1.075	1.074	1.074
150	160	75/150pl		1.071	1.075	1.077	1.074
150	160	75/375 pl		1.074	1.071	1.077	1.074
150	80/80	75/375 pl		1.071	1.072	1.073	1.072
150	160	75/150 pl		1.075	1.077	1.073	1.075
250	160	75/375 pl		1.070	1.072	1.071	1.071
250	240	75/375 pl		1.073	1.073	1.070	1.072
150	160	75/375pl(1)		1.071	1.072	1.071	1.071

(1) No zinc - all other treatments received 30# Zn SO₄ in band

(2) Replication lost to water rot

Appendix Table No. 14

The Effect of Nitrogen, Phosphate and Potassium Fertilizer
Applications on the Yield of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Yield of Potatoes in Tons Per Acre By Replicate				
N	P ₂ O ₅	K	I	II	III	IV	Ave.
150	0	0	10.074	17.871	15.318	18.837	15.525
150	0	100	14.421	16.836	17.043	14.283	15.646
150	80	100	15.594	18.147	17.181	19.493	17.604
150	160	100	20.804	19.665	15.525	19.009	18.751
150	240	100	18.906	14.904	14.352	14.835	15.749
150	160p1(2)	100	23.426	16.353	12.765	20.666	18.303
250	0	100	19.286	13.593	17.181	16.491	16.638
250	80	100	19.976	17.319	12.006	16.077	16.345
250	160	100	19.148	18.216	19.941	15.663	18.242
250	240	100	21.908	13.386	18.630	14.628	17.138
250	160 p1(2)	100	19.838	15.387	16.560	18.906	17.673
150	160	0	15.111	16.353	11.937	17.595	15.249
250	160	0	16.422	19.389	20.148	11.523	16.870
250	160	100 (1)	16.215	17.595	15.594	21.356	17.690
350	160	100	15.180	18.665	17.526	16.629	17.000
150	80	100	13.110	15.525	16.008	16.422	15.266
250	80	100	14.490	18.561	14.628	12.351	15.008
150	160	100	10.074	11.247	11.730	19.113	13.091
L.S.D. @ 5%							ns
C. V. %							17.48

(1) Received 30#/A Zn SO₄ remainder of Treatments no Zinc

(2) Phosphate plowed down - other treatments banded.

Appendix Table No. 15

The Effect of Nitrogen, Phosphate and Potassium Treatments on the Market Grade of
Russet Burbank Potatoes - Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			No. 1 %			No. 2 %			Culls %
N	P ₂ O ₅	K	10 oz.+	10 oz.-	Total	10 oz.+	10 oz.-	Total	
150	0	0	14.00	16.00	30.00	22.83	17.50	40.33	29.62
150	0	100	13.76	16.26	30.02	21.76	16.00	37.76	32.26
150	80	100	19.50	15.00	34.50	22.76	19.76	42.52	23.00
150	160	100	14.76	12.76	27.52	14.26	18.50	32.76	39.76
150	240	100	17.00	28.50	45.50	9.76	19.50	29.26	25.26
150	160 p1(2)	100	16.26	20.00	36.26	14.76	20.00	34.76	29.00
250	0	100	15.26	20.50	35.76	10.26	16.76	27.02	37.26
250	80	100	15.00	17.26	32.26	14.00	20.76	34.76	33.00
250	160	100	16.76	18.00	34.76	17.50	19.76	37.26	28.00
250	240	100	11.00	11.26	22.26	15.00	19.26	34.26	43.50
250	160 p1(2)	100	14.76	18.26	33.02	18.00	19.26	37.26	29.76
150	160	0	9.50	19.50	29.00	12.50	24.00	36.50	34.50
250	160	0	13.50	18.50	32.00	13.26	24.50	37.76	30.26
250	160	100(1)	10.26	15.00	25.26	14.26	23.76	38.02	36.76
350	160	100	11.00	13.26	24.26	25.26	26.50	51.76	24.00
150	80	100	10.00	19.76	29.76	10.76	25.50	36.26	34.00
250	80	100	11.76	17.76	29.52	16.76	20.50	37.26	33.26
150	160	100	13.00	15.26	28.26	14.50	22.76	37.26	34.50

(1) 30# Zinc Sulphate per acre - other treatments no zinc

(2) Phosphate plowed down prior to planting

Appendix Table No. 16

The Effect of Nitrogen, Phosphate and Potassium Fertilizer Applications on the Specific Gravity of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Specific Gravity By Replicate				
N	P ₂ O ₅	K	I	II	III	IV	Ave.
150	0	0	1.096	1.095	1.093	1.091	1.094
150	0	100	1.088	1.083	1.091	1.094	1.090
150	80	100	1.090	1.096	1.087	1.091	1.091
150	160	100	1.089	1.091	1.094	1.088	1.091
150	240	100	1.092	1.093	1.095	1.092	1.093
150	160 p1(2)	100	1.087	1.092	1.090	1.083	1.088
250	0	100	1.091	1.095	1.095	1.090	1.093
250	80	100	1.084	1.091	1.092	1.094	1.090
250	160	100	1.090	1.086	1.085	1.088	1.087
250	240	100	1.090	1.087	1.093	1.094	1.091
250	160 p1(2)	100	1.086	1.092	1.084	1.085	1.087
150	160	0	1.094	1.091	1.098	1.093	1.094
250	160	0	1.089	1.089	1.092	1.093	1.091
250	160	100(1)	1.091	1.096	1.090	1.083	1.090
350	160	100	1.093	1.091	1.092	1.086	1.091
150	80	100	1.094	1.090	1.090	1.089	1.091
250	80	100	1.095	1.095	1.089	1.087	1.092
150	160	100	1.094	1.096	1.095	1.089	1.094
L.S.D. @ 5%							ns
C. V. %							.288

- (1) 30# Zinc Sulphate per acre - other treatments no Zinc
(2) Phosphate plowed down prior to planting

Appendix Table No. 17

The Effect of Several Fertilizer Treatments on the Percentage Phosphorus Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Percentage Phosphorus in Petioles (1)				Ave.
N	P ₂ O ₅	K	I	By II	Replicate III	IV	
150	0	0	.21	.19	.22	.22	.21
150	0	100	.18	.24	.21	.21	.21
150	80	100	.29	.28	.32	.32	.30
150	160	100	.39	.41	.44	.35	.40
150	240	100	.39	.40	.40	.42	.40
150	160 pl(2)	100	.25	.26	.24	.30	.26
250	0	100	.20	.21	.23	.33	.24
250	80	100	.21	.24	.32	.35	.28
250	160	100	.22	.31	.40	.35	.32
250	240	100	.22	.38	.27	.33	.30
250	160 pl(2)	100	.17	.27	.30	.29	.26
150	160	0	.31	.23	.35	.42	.33
250	160	0	.27	.42	.40	.44	.38
250	160	100(3)	.24	.27	.37	.37	.31
350	160	100	.31	.41	.29	.38	.35
150	80	100	.40	.27	.36	.32	.34
250	80	100	.26	.26	.35	.35	.31
150	160	100	--	.29	.42	.41	.37

(1) Sample taken late bud or early bloom

(2) Plowed down

(3) Received 30#/A Zn SO₄ - remainder of treatments no Zinc

Appendix Table No. 18

The Effect of Several Fertilizer Treatments on the Percentage Potassium Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Percentage Potassium in Petioles (1)				
N	P ₂ O ₅	K	I	By II	Replicate III	IV	Ave.
150	0	0	10.2	11.6	11.4	11.4	11.2
150	0	100	10.9	12.1	11.4	11.6	11.5
150	80	100	11.8	11.6	11.6	12.0	11.8
150	160	100	12.1	11.6	11.1	11.1	11.5
150	240	100	11.6	11.9	11.4	11.5	11.6
150	160 p1(2)	100	11.4	11.9	10.8	11.6	11.4
250	0	100	11.6	11.4	10.8	11.3	11.3
250	80	100	11.6	12.0	11.6	11.3	11.6
250	160	100	11.4	10.6	11.4	11.5	11.2
250	240	100	11.8	10.9	10.2	10.6	10.9
250	160 p1(2)	100	12.0	11.1	11.4	11.5	11.5
150	160	0	11.8	11.1	10.8	10.5	11.1
250	160	0	11.6	9.9	10.2	10.6	10.6
250	160	100(3)	12.4	11.4	11.4	11.4	11.7
350	160	100	12.2	10.8	10.2	11.9	11.3
150	80	100	12.0	11.9	11.1	11.3	11.6
250	80	100	12.6	11.4	11.6	11.4	11.8
150	160	100	--	10.2	11.8	11.2	11.1

(1) Sample taken late bud or early bloom

(2) Plowed down

(3) Received 30#/A Zn SO₄ - remainder of treatments no Zinc

Appendix Table No. 19

The Effect of Several Fertilizer Treatments on the Percentage Calcium Content of the Petioles (1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Percentage Calcium in Petioles (1)				
N	P ₂ O ₅	K	By Replicate				Ave.
			I	II	III	IV	
150	0	0	.82	1.18	.98	1.07	1.01
150	0	100	.95	1.24	1.10	.80	1.02
150	80	100	.80	1.12	.85	1.04	.95
150	160	100	.93	.98	.85	.98	.94
150	240	100	.95	1.04	.95	.95	.97
150	160 p1(2)	100	1.04	1.18	.85	.85	.98
250	0	100	1.06	.87	1.01	1.04	1.00
250	80	100	1.12	1.27	1.09	.98	1.12
250	160	100	1.48	1.21	.75	1.01	1.11
250	240	100	1.48	1.18	1.12	.95	1.18
250	160 p1(2)	100	1.48	1.06	.90	.90	1.09
150	160	0	1.06	1.42	.93	.95	1.09
250	160	0	1.18	1.12	.95	.90	1.04
250	160	100(3)	1.27	1.01	.98	1.01	1.08
350	160	100	.95	1.06	1.15	1.01	1.04
150	80	100	.93	1.18	.80	.82	.93
250	80	100	1.18	1.04	.95	.80	.99
150	160	100	--	1.12	.90	.93	.98

(1) Sample taken late bud or early bloom

(2) Plowed down

(3) Received 30#/A Zn SO₄ - remainder of treatments no Zinc

Appendix Table No. 20

The Effect of Several Fertilizer Treatments on the Percentage Magnesium Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			Percentage Magnesium in Petioles (1)				
N	P ₂ O ₅	K	I	By II	Replicate III	IV	Ave.
150	0	0	.55	.57	.56	.58	.57
150	0	100	.55	.61	.54	.55	.56
150	80	100	.53	.52	.45	.47	.49
150	160	100	.50	.50	.45	.50	.49
150	240	100	.57	.65	.58	.60	.60
150	160 p1(2)	100	.50	.58	.62	.53	.56
250	0	100	.55	.61	.58	.62	.59
250	80	100	.52	.51	.59	.57	.55
250	160	100	.58	.58	.45	.52	.53
250	240	100	.53	.74	.52	.62	.60
250	160 p1(2)	100	.52	.68	.63	.50	.58
150	160	0	.44	.54	.58	.53	.52
250	160	0	.50	.68	.54	.69	.60
250	160	100 (3)	.60	.56	.69	.53	.60
350	160	100	.55	.71	.62	.57	.61
150	80	100	.52	.45	.54	.58	.52
250	80	100	.64	.50	.58	.58	.58
150	160	100	--	.69	.62	.50	.60

(1) Sample taken late bud or early bloom

(2) Plowed down

(3) Received 30#/A Zn SO₄ - remainder of Treatments no Zinc

Appendix Table No. 21

The Effect of Several Fertilizer Treatments on the P.P.M. Zinc Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			P.P.M. Zinc in Petiole (1)				
N	P ₂ O ₅	K	By Replicate				Ave.
			I	II	III	IV	
150	0	0	28	22	26	30	27
150	0	100	26	32	22	46	32
150	80	100	22	26	32	26	27
150	160	100	20	32	24	24	25
150	240	100	16	14	20	26	19
150	160 p1(2)	100	20	40	30	32	31
250	0	100	26	52	30	30	35
250	80	100	14	30	26	28	25
250	160	100	18	18	26	26	22
250	240	100	20	22	14	26	21
250	160 p1(2)	100	20	18	26	32	24
150	160	0	76	22	18	28	36
250	160	0	20	22	22	52	29
250	160	100(3)	26	54	76	40	49
350	160	100	60	36	16	24	34
150	80	100	50	40	20	36	37
250	80	100	42	30	26	42	35
150	160	100	--	26	16	22	21

(1) Sample taken late bud or early bloom

(2) Plowed down

(3) Received 30#/A Zn SO₄ -remainder of treatments no Zinc

Appendix Table No. 22

The Effect of Several Fertilizer Treatments on the P.P.M.
Manganese Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application: Pounds Per Acre			P.P.M. Manganese in Petiole (1)				
N	P ₂ O ₅	K	By Replicate				Ave.
			I	II	III	IV	
150	0	0	32	56	36	48	43
150	0	100	40	72	32	58	51
150	80	100	48	42	80	44	54
150	160	100	50	54	48	58	53
150	240	100	46	50	46	52	49
150	160 p1(2)	100	46	58	50	80	59
250	0	100	46	58	46	54	51
250	80	100	42	72	46	42	51
250	160	100	40	44	54	52	48
250	240	100	42	46	42	42	43
250	160 p1(2)	100	46	44	42	70	51
150	160	0	66	44	42	56	52
250	160	0	52	48	48	50	50
250	160	100(3)	46	50	62	56	54
350	160	100	42	46	42	42	43
150	80	100	50	76	46	68	60
250	80	100	54	46	34	56	48
150	160	100	--	46	46	52	48

- (1) Sample taken late bud or early bloom
 (2) Plowed down
 (3) Received 30#/A Zn SO₄ - remainder of treatments no Zinc

Appendix Table No. 23

The Effect of Several Fertilizer Treatments on the P.P.M.
Iron Content of the Petioles(1) of Russet Burbank Potatoes

Madras Location - Central Oregon Experiment Station - 1967

Fertilizer Application Pounds Per Acre			P.P.M. Iron in Petiole (1)				Ave.
N	P ₂ O ₅	K	I	By II	Replicate III	IV	
150	0	0	134	138	160	152	146
150	0	100	134	156	140	148	145
150	80	100	126	122	142	126	129
150	160	100	118	134	126	168	137
150	240	100	126	168	134	168	149
250	0	100	118	164	134	152	142
250	80	100	110	122	126	176	134
250	160	100	140	142	114	142	135
150	160	0	214	122	160	152	162
250	160	0	130	126	114	190	140
350	160	100	150	194	136	134	154

(1) Sample taken late bud or early bloom

Appendix Table No. 24

The Specific Gravity of Twenty-four Varieties or Lines of Potatoes Grown on
 The Redmond Location of the Central Oregon Experiment Station - 1967
 The Table Presents Data by Replicate & Average, & Indicates Multiple Range Significance of the Entries

Variety or Line	Specific Gravity by Replicate					(1) Ave.	Multiple Significance	Range 5%
	I	II	III	IV	V			
B2759-5	1.092	1.079	1.081	1.082	1.080	1.083		
Snowflake	1.081	1.081	1.084	1.074	1.092	1.082		
Sebago	1.077	1.083	1.072	1.084	1.075	1.078		
B3820-14	1.073	1.076	1.074	1.072	1.077	1.074		
Kennebec	1.070	1.082	1.075	1.070	1.064	1.072		
Russet Rural	1.069	1.072	1.074	1.078	1.068	1.072		
Russet Burbank	1.071	1.072	1.075	1.070	1.068	1.071		
Penobscott	1.062	1.074	1.067	1.070	1.074	1.069		
B4987-14	1.084	1.071	1.062	1.068	1.061	1.069		
Alaskan Russet	1.068	1.070	1.072	1.065	1.068	1.069		
Haag	1.065	1.068	1.077	1.065	1.068	1.069		
B5083-1	1.070	1.072	1.070	1.071	1.064	1.069		
B4814-2	1.068	1.069	1.064	1.067	1.066	1.067		
Katahdin	1.068	1.065	1.065	1.065	1.069	1.066		
Red Lasoda	1.067	1.058	1.064	1.063	1.061	1.065		
Monona	1.065	1.074	1.060	1.064	1.064	1.065		
B4987-30	1.062	1.066	1.064	1.062	1.059	1.063		
Red Pontiac	1.064	1.056	1.075	1.063	1.056	1.063		
B5058-1	1.064	1.064	1.062	1.065	1.059	1.063		
Norgold	1.062	1.066	1.063	1.062	1.063	1.063		
Shoshoni	1.063	1.062	1.061	1.062	1.057	1.061		
B4784-1	1.061	1.059	1.057	1.060	1.065	1.060		
La Rouge	1.062	1.056	1.057	1.063	1.062	1.060		
B5144-2	1.061	1.057	1.059	1.053	1.052	1.056		

Appendix Table No. 25

The Specific Gravity of Twenty-four Varieties or Lines of Potatoes Grown on
The Madras Location of the Central Oregon Experiment Station - 1967

The Table Presents Data by Replicate & Average, & Indicates Multiple Range Significance of the Entries

Variety	Specific Gravity by Replicate					(1) Ave.	Multiple Range Significance 5%
	I	II	III	IV	V		
Sebago	1.095	1.094	1.090	1.090	1.105	1.095	
B2759-5	1.075	1.090	1.095	1.096	1.095	1.090	
B3820-14	1.084	1.094	1.092	1.095	1.082	1.089	
Russet Burbank	1.083	1.085	1.083	1.088	1.085	1.085	
Penobscott	1.081	1.088	1.078	1.081	1.086	1.083	
Snowflake	1.071	1.086	1.088	1.080	1.085	1.082	
Haag	1.078	1.083	1.081	1.081	1.087	1.082	
Katadhin	1.078	1.087	1.078	1.082	1.079	1.081	
Kennebec	1.081	1.081	1.081	1.082	1.078	1.081	
B5083-1	1.074	1.078	1.084	1.083	1.084	1.081	
Russet Rural	1.077	1.082	1.073	1.079	1.088	1.080	
Shoshoni	1.096	1.078	1.065	1.074	1.078	1.078	
Red Lasoda	1.082	1.080	1.079	1.074	1.072	1.077	
Alaskan Russet	1.074	1.076	1.075	1.076	1.078	1.076	
La Rouge	1.075	1.070	1.079	1.072	1.080	1.075	
B4814-2	1.075	1.075	1.069	1.076	1.076	1.074	
B4987-14	1.071	1.085	1.070	1.065	1.073	1.073	
B4987-30	1.071	1.074(2)	1.077	1.076	1.064	1.072	
B5144-2	1.068	1.073	1.074	1.078	1.069	1.072	
B058-1	1.073	1.079	1.060	1.073	1.074	1.072	
Monona	1.076	1.069	1.073	1.069	1.064	1.070	
B4784-1	1.059	1.070	1.068	1.072	1.073	1.068	
Red Pontiac	1.066	1.072	1.069	1.065	1.061	1.067	
Norgold	1.062	1.063	1.054	1.076	1.070	1.065	

(1) Original calculations carried out to one more significant digit

(2) Corrected value