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Numerical Results of the Field Experiments 1969

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69/S/RN/2 - Rotation 2 - Potatoes, Sugar Beet & Barley

Rothamsted Research

Rothamsted Research (1970) *69/S/RN/2 - Rotation 2 - Potatoes, Sugar Beet & Barley* ; Numerical Results Of The Field Experiments 1969, pp 42 - 46 - DOI: <https://doi.org/10.23637/ERADOC-1-96>

SAXMUNDHAM
 ROTATION II 1969
 (69/S/RN/2)

For history, treatments, rotations and results see 'Details' 1967 and 68/A/10.

Area of each sub plot:	Area harvested:
Potatoes: 0.0048	0.0019
Sugar beet: 0.0050	0.0025
Barley: 0.0273	0.0123.

The plots are now divided into 2 to test a rotation of potatoes, barley, sugar beet, barley as shown below:

	1969	1970	1971	1972
North, block, north:	P	B	SB	B
south:	SB	B	P	B
South block, north:	B	P	B	SB
south:	B	SB	B	P

P = potatoes, B = barley, SB = sugar beet.

Each half plot is further sub-divided into 5 sub plots for the application of the following phosphate treatments:-
 None - 2 sub plots per half plot (P0), 0.5 (P1), 1.0 (P2), 1.5 (P3) cwt P2O5 as superphosphate. The above treatments are applied to the root crops only of the rotation and are cumulative.

Basal applications: Manuring:-

Potatoes:	2.0 cwt N and 2.0 cwt K20 as (25:0:16) plus muriate of potash.
Sugar beet:	1.5 cwt N and 2.5 cwt K20 as (25:0:16) plus muriate of potash.
Barley:	1.0 cwt N and 0.64 cwt K20 as (25:0:16).

Sprays:

Potatoes:	Weedkiller: Paraquat at 0.375 lb ion plus linuron at 0.75 lb in 40 gals. Fungicide and insecticides: (1) Fentin hydroxide plus dimethoate ('Fennite' at 1 lb plus 'Rogor 20 W'
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at 1.5 lb in 40 gals). (2) Fentin hydroxide plus dimethoate ('Fennite' at 1 lb plus 'Rogor E' at 12 fluid oz in 40 gals). (3) Fentin hydroxide ('Fennite' at 2 lb in 40 gals).
Barley: Weedkiller: Mecoprop at 36 oz and 2,4-D at 9 oz in 25 gals.
Sugar beet: Weedkiller: Pyrazon ('Pyramin' at 3 lb in 20 gals). Insecticides: Demeton-s-methyl at 7 oz in 25 gals. Dimethoate ('Rogor E' at 12 fluid oz in 40 gals).

Cultivations, etc.: Ploughed: 31 Oct-14 Nov, 1968.
Potatoes: Fertilisers applied, potatoes planted: 9 Apr, 1969. Weedkiller applied: 14 May. Fungicide and insecticides applied: (1) 10 July, (2) 22 July, (3) 20 Aug. Lifted: 16 Sept. Variety: King Edward.
Barley: Fertilisers applied: 11 Mar, 1969. Seed drilled: 25 Mar. Weedkiller applied: 23 May. Combine harvested: 21 Aug. Variety: Sultan.
Sugar beet: Fertilisers applied, seed drilled: 9 Apr, 1969. Weedkiller applied: 11 Apr. Singled: 20 May. Demeton-s-methyl applied: 21 June. Dimethoate applied: 22 July. Lifted: 7 Oct. Variety: Klein E.

ERRATUM to 'Results' 67/A/10.1: Basal manuring should be 1.2 cwt N and 1.2 cwt K₂O as (16:0:16) and not as stated.

SUMMARY OF RESULTS

POTATOES

TOTAL TUBERS: TONS

Plot	Treatment 1966 and 1967	1969				Mean
		P0	P1	P2	P3	
1	P0	9.20	12.39	16.90	14.58	12.45
2	P0	14.35	15.86	17.02	17.83	15.88
3	P0	16.38	16.32	18.75	19.21	17.41
4	D	14.93	17.48	19.10	19.21	17.13
5	DP1	16.03	15.63	14.58	18.52	16.16
6	P1	15.05	17.94	15.40	14.58	15.60
7	P2	16.96	17.59	17.25	17.02	17.15
8	P0	15.22	18.29	16.44	16.21	16.27
Mean		14.77	16.44	16.93	17.15	16.01

SUGAR BEET

ROOTS (WASHED): TONS

1	P0	2.97	12.96	17.56	17.83	10.86
2	P0	10.22	15.03	14.31	15.94	13.14
3	P0	16.88	18.73	18.19	17.65	17.66
4	D	17.06	18.73	17.47	19.63	17.99
5	DP1	18.55	18.55	17.74	18.91	18.46
6	P1	20.17	19.54	19.00	21.16	20.00
7	P2	18.59	19.63	19.81	17.83	18.89
8	P0	19.49	14.13	19.09	19.90	18.42
Mean		15.49	17.16	17.89	18.60	16.93

SUGAR BEET

Plot	Treatment 1966 and 1967	1969				Mean
		P0	P1	P2	P3	
		SUGAR %				
1	P0	18.3	19.5	19.1	19.6	18.9
2	P0	19.9	19.6	19.9	19.9	19.8
3	P0	19.4	18.8	19.5	19.4	19.3
4	D	19.8	19.1	19.0	19.3	19.4
5	DF1	19.2	19.1	19.3	19.0	19.1
6	P1	18.6	19.0	18.7	19.0	18.8
7	P2	19.2	19.1	18.8	19.2	19.1
8	P0	18.6	18.8	18.7	18.6	18.7
Mean		19.1	19.1	19.1	19.2	19.1

TOTAL SUGAR: CWT

1	P0	10.9	50.5	66.9	69.9	41.8
2	P0	40.7	58.8	56.9	63.3	52.1
3	P0	65.3	70.5	71.1	68.4	68.1
4	D	67.4	71.5	66.3	75.6	69.6
5	DF1	71.3	70.7	68.3	71.7	70.7
6	P1	74.9	74.2	70.9	80.3	75.0
7	P2	71.4	74.9	74.6	68.5	72.2
8	P0	72.7	53.2	71.2	73.9	68.7
Mean		59.3	65.5	68.3	71.5	64.8

SUGAR BEET

TOPS: TONS

Plot	Treatment 1966 and 1967	1969				Mean
		P0	P1	P2	P3	
1	P0	3.69	12.33	13.95	14.04	9.54
2	P0	7.92	11.97	11.07	12.51	10.28
3	P0	14.04	13.95	12.60	12.78	13.49
4	D	12.69	14.31	13.86	16.39	13.99
5	DP1	12.92	14.85	15.94	15.58	14.44
6	P1	15.49	13.05	10.80	12.69	13.50
7	P2	13.14	12.15	11.61	12.06	12.42
8	P0	14.85	7.38	17.29	14.49	13.77
Mean		11.84	12.50	13.39	13.82	12.68

BARLEY: CWT

Plot	Treatment 1966 and 1967	GRAIN	STRAW
2	P0	24.0	11.9
3	P0	33.1	15.9
4	D	34.2	18.4
5	DP1	35.4	19.7
6	P1	34.5	19.8
7	P2	35.7	19.8
8	P0	29.8	15.3
Mean		29.5	15.6

Mean D.M. %: Grain: 76.6
Straw: 83.7