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Yields of the Field Experiments 1972

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72/R/RN/7 Residual Phosphate - Potatoes, Barley, Swedes

Rothamsted Research

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72/R/RN/7

RESIDUAL PHOSPHATE

Object: To study the direct and residual effects of phosphate fertiliser on yields of three crops grown in rotation - Sawyers I and Great Field IV.

Sponsor: G.E.G. Mattingly.

The thirteenth year, potatoes, barley, swedes.

For previous years see 'Details' 1967 and 68/B/5(t), 69/R/RN/7, 70/R/RN/7(t) and 71/R/RN/7.

Whole plot dimensions:-

Great Field IV: 4.27 x 19.3. Area harvested: Potatoes and barley - 0.00520, swedes - 0.00390.

Sawyers I: 4.27 x 20.1. Area harvested: Potatoes and barley - 0.00572, swedes - 0.00429.

Standard applications:

Potatoes: Weedkiller: Linuron at 0.84 kg plus paraquat at 0.42 kg ion in 440 l. Fungicide: Mancozeb at 1.3 kg in 440 l on 3 occasions. Insecticide: Demeton-s-methyl at 0.25 kg applied with the fungicide on the second occasion.

Barley: Ground chalk at 2.9 tonnes. Weedkiller: Ioxynil, bromoxynil, dichlorprop and MCPA ('Tetroxone' at 5.6 l in 220 l).

Swedes: Weedkiller: Paraquat at 0.56 kg ion in 220 l.

Seed: Potatoes: Majestic chitted Scotch seed.

Barley: Julia, dressed with ethirimol, sown at 160 kg.

Swedes: Wilhelmsbürger, dressed with gamma BHC and captan, sown at 0.4 kg.

Cultivations, etc. (both fields):- Ploughed: 10 Nov, 1971.

Potatoes: Fertilisers applied: 19 Apr, 1972. Plots rotary cultivated, potatoes machine planted: 20 Apr. Weedkiller applied: 17 May. Grubbed and rotary ridged: 15 June. Fungicide applied: 11 July, 21 July, 10 Aug. Insecticide applied: 21 July. Sprayed with undiluted BCV at 200 l: 5 Oct. Lifted: 25 Oct.

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Barley: Chalk applied: 1 Nov, 1971. Treatment P fertilisers applied: 18 Mar, 1972. Seed combine drilled: 20 Mar.
Weedkiller applied: 17 May. Combine harvested: 24 Aug.
Swedes: Weedkiller applied: 8 Oct, 1971. Treatment P and basal K applied: 5 May, 1972. Basal N applied: 19 May. Seed drilled: 24 May. Singled: 26 June - 17 July. Lifted: Great Field IV - 8 Nov, Sawyers I - 13 Nov.

Standard errors per plot.

Sawyers I:

Potatoes, total tubers, tonnes/hectare:	2.90 or 10% (11 d.f.)
Barley, grain, tonnes/hectare:	0.198 or 3.3% (11 d.f.)
Swedes, roots, tonnes/hectare:	3.17 or 14.2% (11 d.f.)

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TABLES OF MEANS

POTATOES

Treat- ment (T)	TOTAL TUBERS: TONNES/HECTARE % WARE: 3.81 CM (1.5 INCH)			
	Great Field IV	Sawyers I	Great Field IV	Sawyers I
O	22.7	17.1	95.2	95.7
A1	33.6	24.2	98.3	95.4
A2	42.1	29.8	97.6	95.8
A3	42.0	38.1	96.9	97.0
A4	44.3	39.2	97.6	96.7
T1	38.1	30.3	97.5	96.4
T2	40.2	35.2	96.6	97.1
R2	31.5	23.9	97.6	96.0
R3	37.3	30.6	98.1	96.9
R4	37.4	31.7	97.5	96.3
G1	27.3	22.9	97.9	96.4
S1	28.2	23.5	97.7	96.4
Mean	35.4	28.9	97.4	96.3

Sawyers I only

STANDARD ERROR OF DIFFERENCES

T 2.90

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BARLEY

Treatment (T)	GRAIN: TONNES/HECTARE		STRAW: TONNES/HECTARE	
	Great Field IV	Sawyers I	Great Field IV	Sawyers I
O	4.31	5.48	4.42	4.16
A1	4.32	6.12	4.23	4.79
A2	4.41	6.19	4.67	4.56
A3	3.57	6.45	5.48	4.71
A4	3.93	6.49	5.38	4.88
T1	3.74	6.04	4.41	4.43
T2	3.77	6.32	6.15	4.57
R2	3.73	5.80	4.36	4.33
R3	3.04	6.23	5.06	4.76
R4	3.95	6.19	5.16	4.67
G1	4.90	5.55	4.49	4.28
S1	4.27	5.63	4.29	4.13
Mean	4.00	6.04	4.84	4.52

Sawyers I only

STANDARD ERROR OF DIFFERENCES
T 0.198

Mean D.M. %: 86.0 86.0 83.8 83.8

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SWEDES, ROOTS: TONNES/HECTARE

Treat- ment (T)	Great Field IV	Sawyers I
O	4.9	4.2
A1	14.1	24.0
A2	28.8	28.8
A3	30.6	30.4
A4	31.0	31.2
T1	21.3	28.0
T2	27.3	28.4
R2	16.2	17.8
R3	24.6	24.3
R4	24.9	28.5
G1	8.3	8.4
S1	7.8	13.6
Mean	20.0	22.3

Sawyers I only

STANDARD ERROR OF DIFFERENCES
T 3.17