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Yields of the Field Experiments 1971

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71/R/CS/10 and 71/W/CS/10 Long-term Liming - Barley

Rothamsted Research

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71/R/CS/10 and 71/W/CS/10

LONG TERM LIMING

Object: To study the effects of different amounts of lime on the yields of a range of crops. The effects of P and K are also studied - Rothamsted (R) Sawyers I and Woburn (W) Stackyard C.

The tenth year, barley.

Design: 2 blocks of 16 plots.

For previous years see 'Details' 1967, 68/C/3(t), 69/R&W/CS/10 and 70/R&W/CS/10(t).

Whole plot dimensions: 6.40 x 18.3. Area harvested: Sawyers I (R): 0.00516, Stackyard C (W): 0.00520.

Basal applications:-

Sawyers I (R): 94 kg N as 'Nitro-Chalk' combine drilled. Weedkillers: Paraquat at 0.84 kg ion in 225 l. Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l).

Stackyard C (W): 126 kg N as 'Nitro-Chalk' broadcast before planting. Weedkillers: Paraquat at 0.56 kg ion in 281 l*. Ioxynil at 0.525 kg and mecoprop at 1.58 kg in 281 l.

* Treatment CAO PO K1 received 1.12 kg ion in 281 l.

Cultivations, etc.:-

Sawyers I (R): Paraquat applied: 22 Sept, 1970. Ploughed: 28 Oct. P and K applied: 3 Mar, 1971. Seed combine drilled at 157 kg: 10 Mar. 'Oxytril P' applied: 4 May. Combine harvested: 16 Aug. Variety: Julia.

Stackyard C (W): Paraquat applied: 16 Sept, 1970. Ploughed: 28 Oct. N, P and K applied: 4 Mar, 1971. Seed drilled at 157 kg: 17 Mar. Weedkiller applied: 17 May. Combine harvested: 17 Aug. Variety: Julia.

NOTE: On both fields no yields were taken from some of the CAD plots and those recorded for the remainder were very small. The yields from the CAD plots were omitted from the analysis.

Standard errors per plot. Grain, tonnes/hectare:

Sawyers I (R): 0.773 or 18.7% (11 d.f.)
Stackyard C (W): 0.270 or 6.5% (11 d.f.)

71/R/CS/10 and 71/W/CS/10

SUMMARY OF RESULTS

SAWYERS I (R)

GRAIN: TONNES/HECTARE

	CA2	CA4	CA8	Mean		
Mean (± 0.273)	3.54	4.34	4.53	4.14		
		(± 0.386)		(± 0.223)		
PO	2.87	3.89	4.15	3.64		
PI	4.21	4.79	4.91	4.64		
KO	3.31	4.04	4.34	3.90		
KI	3.77	4.64	4.72	4.38		
	PO	PI				
	(± 0.316)					
KO	3.57	4.23				
KI	3.71	5.05				
	CA2	CA4	CA8			
	KO KI	KO KI	KO KI			
	(± 0.547)					
PO	3.05	2.69	3.53	4.25	4.12	4.19
PI	3.56	4.85	4.56	5.03	4.56	5.26

CAO PLOTS

POKO* PIKO* POKI PIKI

0.85 0.97 - 1.69

General mean: 3.74
 Mean D.M. % (all plots): 80.6

* 1 block only

71/R/CS/10 and 71/W/CS/10

SAWYERS I (R)

STRAW: TONNES/HECTARE

	CA2	CA4	CA8	Mean
Mean	2.20	2.94	2.98	2.71
P0	1.67	2.70	2.74	2.37
P1	2.72	3.18	3.22	3.04
K0	1.88	2.80	2.70	2.46
K1	2.51	3.08	3.26	2.95
	P0	P1		
K0	2.18	2.75		
K1	2.57	3.34		
	CA2	CA4	CA8	
	K0	K1	K0	K1
P0	1.56	1.78	2.59	2.82
P1	2.20	3.24	3.02	3.35
			2.37	3.11
			3.03	3.41

CAD PLOTS

POK0*	P1K0*	POK1	P1K1
0.20	0.49	-	0.94

General mean: 2.42
 Mean D.M. % (all plots): 78.9

* 1 block only

7L/R/CS/10 and 7L/W/CS/10

STACKYARD SERIES C (W)

GRAIN: TONNES/HECTARE

	CA2	CA4	CA8	Mean		
Mean (± 0.096)	4.13	4.19 (± 0.135)	4.24	4.19 (± 0.078)		
PO	3.59	4.03	4.04	3.89		
PI	4.66	4.36	4.43	4.48		
KO	4.09	3.82	3.75	3.89		
KI	4.16	4.57	4.73	4.49		
	PO	PI				
	(± 0.110)					
KO	3.50	4.27				
KI	4.28	4.70				
	CA2	CA4	CA8			
	KO KI	KO KI	KO KI			
	(± 0.191)					
PO	3.40	3.79	3.64	4.42	3.46	4.62
PI	4.78	4.53	4.00	4.72	4.03	4.84

CAD PLOTS

POKO* PIKO* POKI PIKI

- 1.30 - 3.64

General mean: 4.05
 Mean D.M. % (all plots): 84.3

* 1 block only

71/R/CS/10 and 71/W/CS/10

STACKYARD SERIES C (W)

STRAW: TONNES/HECTARE

	CA2	CA4	CA8	Mean
Mean	2.52	2.73	2.82	2.69
PO	2.23	2.55	2.79	2.52
P1	2.81	2.90	2.85	2.86
KO	2.25	2.33	2.41	2.33
K1	2.79	3.12	3.23	3.05
	PO	P1		
KO	2.15	2.51		
K1	2.89	3.20		
	CA2	CA4	CA8	
	KO	K1	KO	K1
PO	1.96	2.50	2.10	3.00
P1	2.53	3.09	2.56	3.25
			2.39	3.19
			2.43	3.27

CAO PLOTS

POKO* P1KO* POK1 P1K1

- 0.70 - 2.16

General mean: 2.58
 Mean D.M. % (all plots): 84.4

* 1 block only