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72/R/CS/10 and 72/W/CS/10 Long Term Liming - Barley

Rothamsted Research

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72/R/CS/10 and 72/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.

Sponsors: J. Bolton, D.B. Slope.

The eleventh year - barley.

For previous years see 'Details' 1967, 68/C/3(t) and 69-71/REW/CS/10.

Whole plot dimensions: 6.40 x 18.3. Area harvested: Sawyers I (R): 0.00512. Stackyard C (W): 0.00516.

Basal applications:

Sawyers I (R): 90 kg N as 'Nitro-Chalk' combine drilled.
Weedkillers: Paraquat at 0.56 kg ion in 220 l. Ioxynil, bromoxynil, 2,4-DP and MCPA ('Tetroxone' at 5.6 l in 220 l).
Stackyard C (W): 130 kg N as 'Nitro-Chalk' broadcast before sowing. Weedkiller: Paraquat at 0.56 kg ion in 280 l.

Seed: Sawyers I (R): Julia (dressed with ethirimol) sown at 160 kg.
Stackyard C (W): Julia (dressed with ethirimol) sown at 150 kg.

Cultivations, etc.:-

Sawyers I (R): Paraquat applied: 9 Sept, 1971. Ploughed: 11 Nov. P and K applied, seed combine drilled: 20 Mar, 1972. 'Tetroxone' applied: 17 May. CAD plots cut and carted, because the crop had failed and plots were very weedy. CAD plots rotary cultivated twice: 3 July, 11 July. Combine harvested: 24 Aug.
Stackyard C (W): Paraquat applied: 9 Sept, 1971. Ploughed: 27 Oct. N, P and K applied: 14 Mar, 1972. Seed drilled: 15 Mar. CAD plots cut and carted, because the crop had failed and plots were very weedy: 3 July. CAD plots rotary cultivated three times: 4 July, 18 July, 31 July. Combine harvested: 15 Aug.

Standard errors per plot. Grain, tonnes/hectare:

Sawyers I (R): 1.130 or 25.8% (11 d.f.)
Stackyard C (W): 0.371 or 7.0% (11 d.f.)

72/R/CS/10 and 72/W/CS/10

TABLES OF MEANS

SAWYERS I (R)

GRAIN: TONNES/HECTARE

	2	CA 4	8	Mean
Mean	3.67	4.55	4.90	4.37
P				
0	2.72	3.92	4.23	3.62
1	4.63	5.19	5.56	5.12
K				
0	3.38	4.14	4.26	3.93
1	3.96	4.97	5.54	4.82

	0	P	1
K			
0	3.34	4.51	
1	3.90	5.74	

	2	CA 4	8
K	0 1	0 1	0 1
P			
0	3.09 2.35	3.51 4.33	3.43 5.03
1	3.68 5.57	4.77 5.61	5.08 6.05

STANDARD ERRORS OF DIFFERENCES

CA	P	K	CA P	CA K	P K	CA P K
0.565	0.461	0.461	0.799	0.799	0.653	1.130

Mean D.M. %: 80.7

72/R/CS/10 and 72/W/CS/10

SAWYERS I (R)

STRAW: TONNES/HECTARE

	2	CA 4	8	Mean
Mean	3.28	4.32	4.75	4.12
P				
0	2.36	3.93	4.20	3.50
1	4.19	4.71	5.30	4.73
K				
0	2.83	3.89	4.19	3.64
1	3.73	4.74	5.31	4.59

	0	P	1
K			
0	3.18		4.10
1	3.82		5.37

	0	2	1	0	CA 4	1	0	8	1
P									
0	2.51	2.22		3.55	4.31		3.47	4.93	
1	3.15	5.24		4.24	5.17		4.91	5.69	

Mean D.M. %: 86.8

72/R/CS/10 and 72/W/CS/10

STACKYARD C (W)

GRAIN: TONNES/HECTARE

	2	CA 4	8	Mean
Mean	4.81	5.28	5.83	5.31
P				
0	4.53	4.97	5.75	5.09
1	5.09	5.59	5.91	5.53
K				
0	4.25	5.19	5.43	4.96
1	5.37	5.37	6.23	5.66

	P 0	1
K		
0	4.89	5.03
1	5.28	6.03

	CA 2		CA 4		8	
K	0	1	0	1	0	1
P						
0	4.32	4.74	4.96	4.98	5.38	6.12
1	4.18	5.99	5.42	5.76	5.47	6.35

STANDARD ERRORS OF DIFFERENCES

CA	P	K	CA P	CA K	P K	CA P K
0.186	0.152	0.152	0.263	0.263	0.214	0.371

Mean D.M. %: 81.9

72/R/CS/10 and 72/W/CS/10

STACKYARD C (W)

STRAW: TONNES/HECTARE

	2	CA 4	8	Mean
Mean	3.52	3.84	4.25	3.87
P				
0	3.00	3.53	4.20	3.57
1	4.04	4.14	4.31	4.17
K				
0	3.01	3.55	3.99	3.51
1	4.03	4.13	4.52	4.22

	0	P 1
K		
0	3.31	3.72
1	3.84	4.61

	2		CA 4		8	
K	0	1	0	1	0	1
P						
0	2.70	3.29	3.32	3.74	3.90	4.49
1	3.32	4.76	3.77	4.51	4.08	4.55

Mean D.M. %: 88.6