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82/R/CS/10 and 82/W/CS/10 Long Term Liming - S. Oats

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82/R/CS/10 and 82/W/CS/10

LONG TERM LIMING

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

Sponsors: S. McGrath, D.P. Stribley.

The 21st year, s. oats.

For previous years see 'Details' 1967, 1973 and 74-81/R&W/CS/10.

Design: 2 randomised blocks of 16 plots.

Whole dimensions: 6.40 x 18.3.

Treatments: All combinations of:-

1. CHALK Ground chalk (tonnes CaCO₃) (total applied 1962-82):

R	W	Rothamsted		Woburn	
		Total 1962-78	1982	Total 1962-78	1982
0	0	0	0	0	0
9	8	7	2	6	2
20	19	15	5	14	5
40	33	30	10	23	10

2. P P fertilizer applied:

	Until 1978	1981	1982
0	None	None	None
P1	K	25 kg P	50 kg P
P2	P	25 kg P	None
P3	P & K	75 kg P	50 kg P

- NOTES: (1) Until 1978 test P & K were applied cumulatively, rates varied with crop. None was applied in 1979 & 1980 (fallow).
 (2) A basal dressing of 120 kg K has been applied since 1981.
 (3) A sub plot test of Mg applied in earlier years has been ignored, but a basal dressing of 100 kg Mg was applied in 1981 and 40 kg Mg in 1982.

Basal applications:

Sawyers I (R): Manures: N at 30 kg as 'Nitro-Chalk' combine drilled, K at 120 kg as muriate of potash, Mg at 40 kg as kieserite.
 Weedkillers: Dicamba, mecoprop and MCPA (as 'Banlene Plus' at 5.0 l) in 250 l.
 Stackyard C (W): Manures: N at 80 kg as 'Nitro-Chalk', K at 120 kg as muriate of potash, Mg at 40 kg as kieserite. Weedkillers: Dicamba, mecoprop and MCPA (as 'Herrisol' at 4.9 l) in 280 l.

Seed: Peniarth, sown at 190 kg (R), 200 kg (W).

Cultivations, etc.:-

Sawyers I (R): Ground chalk, applied: 3-7 Dec, 1981. Ploughed: 3 Feb, 1982. Spring-tine cultivated: 5 Apr. P, K and Mg applied, seed sown: 14 Apr. Weedkillers applied: 26 May. Combine harvested: 26-27 Aug.

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Stackyard C (W): Ground chalk applied: 25 Nov, 1981. Ploughed: 26 Feb, 1982. P, and K applied: 24 Mar. Mg and N applied, heavy spring-tine cultivated: 25 Mar. Spring-tine cultivated with crumbler attached, seed sown: 29 Mar. Weedkillers applied: 26 May. Combine harvested: 20 Aug.

82/R/CS/10 SAWYERS I (R)

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

P	0	P1	P2	P3	MEAN
CHALK					
0	1.21	1.20	1.52	1.74	1.42
9	1.15	1.92	1.47	1.38	1.48
20	1.18	1.22	1.37	1.47	1.31
40	1.13	1.43	1.32	1.65	1.38
MEAN	1.17	1.44	1.42	1.56	1.40

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	CHALK	P	CHALK P
SED	0.090	0.090	0.180

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.180	12.9

GRAIN MEAN DM% 65.8

PLOT AREA HARVESTED 0.00520

82/W/CS/10 STACKYARD C (W)

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

P	0	P1	P2	P3	MEAN
CHALK					
0	1.32	1.79	1.59	1.86	1.64
8	1.58	1.99	1.75	2.08	1.85
19	1.62	1.68	1.86	2.17	1.83
33	1.64	1.77	2.00	1.94	1.84
MEAN	1.54	1.81	1.80	2.01	1.79

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	CHALK	P	CHALK P
SED	0.096	0.096	0.191

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.191	10.7

GRAIN MEAN DM% 80.1

PLOT AREA HARVESTED 0.00503