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86/R/CS/10 and 86/W/CS/10 Long Term Liming - W. Triticale

Rothamsted Research

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86/R/CS/10 and 86/W/CS/10

LONG TERM LIMING

Object: To study the effects of different amounts of lime and phosphate on the yields and compositions of a sequence of crops. Rothamsted (R) Sawyers I and Woburn (W) Stackyard C.

Sponsor: S.P. McGrath.

The 25th year, w. triticale.

For previous years see 'Details' 1967, 1973 and 74-85/R&W/CS/10.

Design: 2 randomised blocks of 16 plots.

Whole plot dimensions: 6.40 x 18.3.

Treatments: All combinations of:-

1. CHALK Residual effects of ground chalk (tonnes CaCO₃) (total applied 1962-83):

		Rothamsted total		Woburn total	
		1962-78	1982-83	1962-78	1982-83
R	W				
0	0	0	0	0	0
14	8	7	7	6	2
23	24	15	8	14	10
50	43	30	20	23	20

2. P Residual effects of P fertilizer applied:

	Until 1978		1981		1982		1983	
	R	W	R	W	R	W	R	W
0	0		0		0		0	0
P1	0		P1		P1		0	P2
P2	P		P1		0		P2	P2
P3	P		P3		P1		P2	P4

Rates 1981-83 P1, P2, P3, P4 = 25, 50, 75, 100 kg P as superphosphate

NOTES: Until 1978 test P was applied cumulatively, rates varied with crop, K was also applied cumulatively, to P1 and P3 plots. Since 1981 K has been applied basally (none in 1986).

Basal applications:-

Sawyers I (R): Manures: N at 170 kg as 'Nitram'. Weedkiller: Glyphosate at 1.4 kg in 200 l.

Stackyard C (W): Manures: N at 190 kg as 'Nitram'. Weedkillers: Clopyralid at 0.05 kg with bromoxynil octanoate at 0.24 kg and mecoprop at 2.1 kg in 250 l.

Seed: Sawyers I (R): Lasko, sown at 190 kg.

Stackyard C (W): Lasko, sown at 160 kg.

86/R/CS/10 and 86/W/CS/10

Cultivations, etc.:-

Sawyers I (R): Weedkiller applied: 23 Sept, 1985. Ploughed: 8 Oct.

Rolled, disced, rotary harrowed, seed sown: 23 Oct. N applied:

30 Apr, 1986. Combine harvested: 10 Sept.

Stackyard C (W): Ploughed: 9 Oct, 1985. Rolled, power harrowed, seed

sown: 22 Oct. N applied: 30 Apr, 1986. Weedkillers applied:

19 May. Combine harvested: 7 Sept.

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

GRAIN TONNES/HECTARE

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

P	O	P1	P2	P3	MEAN
CHALK					
0	5.49	4.08	7.66	7.75	6.24
14	6.99	8.10	8.40	8.51	8.00
23	7.81	8.12	8.51	8.65	8.27
50	7.52	8.32	8.32	8.62	8.20
MEAN	6.95	7.15	8.22	8.38	7.68

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

TABLE	CHALK	P	CHALK P
SED	0.246	0.246	0.491

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

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.491	6.4

GRAIN MEAN DM% 84.6

PLOT AREA HARVESTED 0.00373

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

GRAIN TONNES/HECTARE

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

P	O	P1	P2	P3	MEAN
CHALK					
0	6.52	6.77	6.91	6.85	6.76
8	6.25	6.82	6.89	6.94	6.73
24	6.39	6.65	6.73	6.42	6.55
43	6.30	6.86	6.82	6.87	6.71
MEAN	6.37	6.77	6.84	6.77	6.69

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

TABLE	CHALK	P	CHALK P
SED	0.167	0.167	0.334

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

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.334	5.0

GRAIN MEAN DM% 83.8

PLOT AREA HARVESTED 0.00503