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92/W/CS/388 Sulphur and Nitrogen - W. Oilseed Rape

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92/W/CS/388

SULPHUR AND NITROGEN

Object: To test the crop response to sulphur and whether nitrogen affects this response - Woburn, Butt Close W.

Sponsors: S.P. McGrath, G.F.J. Milford, J. Fieldsend.

The first year, w. rape.

Design: 3 blocks of 3 x 4 plots.

Plot dimensions: 4.0 x 10.0.

Treatments: All combinations of:-

1. **S** Sulphur (kg S) in spring as calcium sulphate:

S0	0
S1	10
S2	20
S4	40

2. **N** Nitrogen (kg N) in spring as 27% N:

N0	0
N1	180
N2	230

- NOTES:** (1) Nitrogen treatments were applied in two split applications.
(2) Because of poor growth nitrogen was applied at 50 kg N to the N0 plots on 23 Apr, 1992.
(3) Sulphur was applied as gypsum (17.5% S).

Experimental diary:

- 27-Aug-91 : B : Ploughed,
04-Sep-91 : B : Rolled, rotary harrowed, Falcon drilled at 7.0 kg.
07-Sep-91 : B : Rolled.
29-Oct-91 : B : 27% N at 145 kg.
06-Jan-92 : B : PK as (0:16:36) at 740 kg.
15-Jan-92 : B : Benazalox at 1.25 kg in 200 l.
13-Feb-92 : **T** : **N** N1 and N2: 27% N at 185 kg.
 S S1, S2 and S4: Gypsum applied.
01-Apr-92 : **T** : **N** N1 and N2: 27% N at 481 kg and 667 kg
 respectively.
23-Apr-92 : **T** : **N** N0: 27% N at 185 kg.
20-Jul-92 : B : Reglone at 3.0 l with Agral at 0.40 l in 400 l.
26-Jul-92 : B : Combine harvested.

Previous crops: W. wheat 1990 and 1991.

NOTE: Soil samples were taken for chemical analysis in autumn, late winter and spring. Plant samples were taken in winter, spring and summer for chemical analysis of crop components.

92/W/CS/388

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

N	N0	N1	N2	Mean
S				
S0	0.56	0.89	1.03	0.83
S1	0.77	1.29	1.40	1.15
S2	0.52	1.52	1.45	1.17
S3	0.55	1.55	1.70	1.27
Mean	0.60	1.31	1.40	1.10

*** Standard errors of differences of means ***

S	N	S
		N
0.113	0.098	0.195

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	22	0.239	21.6
GRAIN MEAN DM%	77.2		

STRAW (AT 90% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

N	N0	N1	N2	Mean
S				
S0	1.16	1.46	1.46	1.36
S1	1.07	1.64	2.29	1.66
S2	2.06	2.32	1.93	2.10
S3	1.04	2.17	2.07	1.76
Mean	1.33	1.90	1.93	1.72

STRAW MEAN DM% 71.1

PLOT AREA HARVESTED 0.00132