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96/R/RAS/1 Sulphur and Magnesium for Spring Oilseed Rape

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96/R/RAS/1

SPRING OILSEED RAPE

SULPHUR AND MAGNESIUM FOR SPRING OILSEED RAPE

Object: To study the effects of rates of sulphur and magnesium fertilizers on the yield and sulphur content of spring oilseed rape - Great Harpenden II.

Sponsors: S.P. McGrath, F. Zhao.

Design: 4 randomised blocks of 12 plots.

Whole plot dimensions: 3.0 x 15.0.

Treatments:

SULMAG Sulphur and magnesium, rate (kg) and form:

	S	Mg	
-	None	None	(duplicated)
KS1	10	-	as potassium sulphate to seedbed
KS2	20	-	as potassium sulphate to seedbed
KS4	40	-	as potassium sulphate to seedbed
KS8	80	-	as potassium sulphate to seedbed
S2	20	-	as 'Thiovit' to seedbed
S4	40	-	as 'Thiovit' to seedbed
E2	20	15.4	as Epsom salts to crop
E4	40	30.8	as Epsom salts to crop
MG1	-	15.4	as magnesium chloride to crop
MG2	-	30.8	as magnesium chloride to crop

- NOTES:** (1) Potassium chloride as muriate of potash was applied to balance the potassium to supply 222 kg K₂O. Epsom salts and magnesium chloride dressings were split and applied one week apart and as two or four sprays on each occasion.
(2) Thiovit contains 80% elemental S.

Experimental diary:

- 25-Oct-95 : B : Deep tine cultivated, twice.
30-Jan-96 : B : Ploughed.
01-Apr-96 : **T : SULMAG:** Potassium chloride applied.
 : **T : SULMAG:** Potassium sulphate applied.
 : B : Spring-tine cultivated.
02-Apr-96 : **T : SULMAG:** Thiovit applied.
 : B : 34.5% N at 145 kg.
 : B : Treflan at 2.3 l in 300 l. Spring-tine cultivated.
03-Apr-96 : B : Rotary harrowed, Starlight, dressed thiram, drilled at
 7 kg.
04-Apr-96 : B : Rolled.
27-Apr-96 : B : Decis at 0.3 l in 200 l.
08-May-96 : B : 34.5% N at 144 kg.
13-May-96 : B : Cyperkill 10 at 250 ml in 200 l.

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Experimental diary:

05-Jun-96 : T : **SULMAG**: Epsom salts and magnesium chloride applied with
Vassgro Spreader at 56 ml in 750 l.
 : B : Dow Shield at 0.5 l in 320 l.
12-Jun-96 : B : Fastac at 200 ml in 320 l.
13-Jun-96 : T : **SULMAG**: Epsom salts and magnesium chloride applied with
Vassgro Spreader at 56 ml in 750 l.
30-Aug-96 : B : Combine harvested.

Previous crops: W. barley 1994, potatoes 1995.

NOTE: Leaves were sampled for nitrogen and sulphur content at flowering.
Soil was sampled to measure sulphur content before drilling.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SULMAG	
-	2.87
KS1	2.62
KS2	2.84
KS4	2.88
KS8	2.72
S2	2.80
S4	2.81
E2	2.99
E4	2.72
MG1	2.92
MG2	2.90
Mean	2.83

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

SULMAG	
0.104	min.rep
0.090	max-min

SULMAG

min.rep Any of the remainder
max-min - v any of the remainder

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	34	0.147	5.2

GRAIN MEAN DM% 83.5

PLOT AREA HARVESTED 0.00299 (32 Plots) or 0.00253 (16 Plots)