

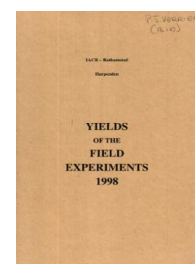
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98/W/CS/474 Efficiency of S Fertilizers - W. Rape

Rothamsted Research

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98/W/CS/474

EFFICIENCY OF S FERTILIZERS

Object: To measure the effect of different forms of sulphur on the yield of winter wheat and the following oilseed rape crop - Woburn, Lansome III.

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

The second year, w. rape.

Design: 4 randomised blocks of $(4 \times 2 + 1)$ split into 2 sub-plots.

Plot dimensions: 8.0 x 12.0.

Treatments: All combinations of:-

Whole plots

- | | |
|---------|---|
| 1. FORM | Form of sulphur to provide 30 kg S: |
| T+A | 50% Stefes Tiger 90 and 50% ammonium sulphate |
| AS | Ammonium sulphate |
| T90 | Stefes Tiger 90 |
| NAS | Sodium thiosulphate |

2. **TIMING**
- | | |
|-----|------------------------|
| SB | To seedbed, pre-sowing |
| MAR | In March |

EXTRA

- None

Sub-plots

YEAR

- | | |
|-------|---|
| 97+98 | Above treatments applied in 1997 and 1998 |
| 97 | Above treatments applied in 1997 only |

NOTE: The nitrogen was balanced on all plots to match that supplied by the ammonium sulphate treatment, this was 26.5 kg N to the seedbed and a spring dressing to provide a total of 180 kg N.

Experimental diary:

- 08-Sep-97 : B : Ploughed. Rotary harrowed.
09-Sep-97 : T : **FORM** T+A, AS, T90, NAS **TIMING** SB YEAR 97+98: Seedbed
sulphur and balancing nitrogen applied.
: B : Apex, dressed Vitavax RS, drilled at 120 seeds per m².
24-Oct-97 : B : Butisan S at 1.5 l with Benazalox at 0.75 kg in 300 l.
17-Feb-98 : B : Folicur at 0.5 l in 200 l.

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Experimental diary:

16-Mar-98 : T : **FORM** T+A, AS, T90, NAS **TIMING** MAR **YEAR** 97+98:
Sulphur treatments applied and balancing nitrogen applied.
09-May-98 : B : Ronilan FL at 0.8 l with Fastac at 200 ml in 200 l.
16-Jul-98 : B : Alpha Glyphogan at 4.0 l in 200 l.
28-Jul-98 : B : Combine harvested.

NOTE: Soil was sampled in May and plants at harvest for chemical analysis.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

TIMING	SB	MAR	Mean	
FORM				
T+A	1.94	2.39	2.16	
AS	1.96	2.45	2.20	
T90	3.16	1.94	2.55	
NAS	2.20	2.68	2.44	
Mean	2.31	2.36	2.34	
YEAR	97+98	97	Mean	
FORM				
T+A	2.31	2.01	2.16	
AS	2.24	2.17	2.20	
T90	2.56	2.54	2.55	
NAS	2.69	2.19	2.44	
Mean	2.45	2.23	2.34	
YEAR	97+98	97	Mean	
TIMING				
SB	2.38	2.25	2.31	
MAR	2.52	2.21	2.36	
Mean	2.45	2.23	2.34	
TIMING	SB		MAR	
YEAR	97+98	97	97+98	97
FORM				
T+A	2.02	1.85	2.60	2.17
AS	1.87	2.05	2.61	2.28
T90	3.13	3.19	1.99	1.89
NAS	2.51	1.89	2.87	2.49
EXTRA	2.06			

Grand mean 2.31

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FORM	TIMING	YEAR	FORM TIMING
0.613	0.434	0.079	0.867

FORM YEAR	TIMING YEAR	FORM TIMING YEAR
0.623	0.441	0.881

Except when comparing means with the same level(s) of

FORM	0.157	
TIMING		0.111
FORM.TIMING		0.222

SED for comparing **EXTRA** with any item in **FORM.TIMING.YEAR** table is 0.874

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	24	1.226	53.2
BLOCK.WP.SP	28	0.314	13.6

GRAIN MEAN DM% 85.5

SUB-PLOT AREA HARVESTED 0.00230