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## MORLEY RESEARCH CENTRE

### Winter oilseed rape - response to sulphur

*G M Palmer and D B Stevens*

#### Summary

There were no significant effects from any sulphur treatment at this site where tissue analysis of leaf samples collected at the start of flowering gave a N:S ratio of 4.8:1

#### Object

To investigate the potential benefit to winter oilseed rape from the application of sulphur to the soil in the early spring

#### Method

#### Treatments

1. Nil sulphur
2. Sulphur at 15 kg/ha (as  $K_2SO_4$  at 83.3 kg/ha)
3. Sulphur at 30 kg/ha (as  $K_2SO_4$  at 166.7 kg/ha)
4. Sulphur at 45 kg/ha (as  $K_2SO_4$  at 250 kg/ha)
5. Nil sulphur. K as KCl (at 69.4 kg/ha) equivalent to rate in 2.
6. Nil sulphur. K as KCl (at 138.9 kg/ha) equivalent to rate in 3.
7. Nil sulphur. K as KCl (at 208.3 kg/ha) equivalent to rate in 4.
8. Sulphur at 8 kg/ha as foliar spray (as Thiovit at 10 kg/ha)

The treatments were arranged in randomised blocks with 4 replicates.

Plots were marked out in a crop of Bristol oilseed rape drilled on 28 September 1993 at a site on a medium sandy loam soil at Carbrooke, Norfolk. Sulphur treatments were applied on 10 March ( $K_2SO_4$ /KCl) at the start of spring growth and 22 April (Thiovit) at the start of flowering. Normal farm inputs of fertiliser, herbicides and pesticides were applied overall. The trial was harvested by combine on 21 July.

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\*Not for publication without the Director's consent. This report deals primarily with only one year's work, so any conclusions given are provisional.

### Results and discussion

Tissue analysis of leaves sampled on 26 May at the end of flowering showed that 45 kg/ha sulphur applied in March had reduced the N:S ratio from 4.8 to 2.3. There were no visible symptoms of sulphur deficiency on the trial and no obvious effects from any treatment during the spring.

### Yields

There were no significant effects from any sulphur treatment at this site. This is consistent with other data which suggests that deficiency is unlikely until the N:S ratio exceeds 14.

Table 1. Yield (t/ha at 91% dm)

| Treatments  | (t/ha at 91% dm) |
|---|------------------|
| 1. Nil sulphur  | 3.83             |
| 2. Sulphur at 15 kg/ha (as K <sub>2</sub> SO <sub>4</sub> at 83.3 kg/ha)  | 3.86             |
| 3. Sulphur at 30 kg/ha (as K <sub>2</sub> SO <sub>4</sub> at 166.7 kg/ha) | 4.10             |
| 4. Sulphur at 45 kg/ha (as K <sub>2</sub> SO <sub>4</sub> at 250 kg/ha)   | 4.10             |
| 5. Nil sulphur. K as KCl (at 69.4 kg/ha) equiv. to rate in 2.             | 3.92             |
| 6. Nil sulphur. K as KCl (at 138.9 kg/ha) equiv. to rate in 3.            | 4.02             |
| 7. Nil sulphur. K as KCl (at 208.3 kg/ha) equiv. to rate in 4.            | 3.83             |
| 8. Sulphur at 8 kg/ha as foliar spray (as Thiovit at 10 kg/ha)            | 4.09             |
| LSD   | NS               |
| SE per plot (21df)  | ±0.249           |
| SE as %GM   | 6.3              |