1998 CANOLA FERTILISER TRIAL

Researchers: Andrew Speirs Hi-Fert
Rob Durant Hi-Fert

Sites: Gnarwarre, Streatham and Penshurst

These results are related to the trial printed on page 29 of the *1998 Field Day Book.*

BACKGROUND

Although the nitrogen requirements of canola is reasonably well known, the push for higher and higher yields is starting to show up deficiencies in our knowledge of the crops requirement for other elements.

AIM

To investigate the responses of canola to varying rates of sulphur in the elemental and sulphate form.

To investigate canola's response to zinc.

To determine canola's response to a multi-trace element foliar spray (Hi Fol Canola) a new product developed by Hi Fert.

RESULTS

1. 144.5 kg/ha of pre-sown Urea + 155 kg/ha of MAP Sulphur cote at sowing

2. 150 kg/ha of pre-sown Urea Zinc-cote 2.5% + 155 kg/ha of MAP Sulphur cote.

3. 235 kg/ha of pre-sown 28:0:0:16 Zinc cote 1.7% + 155 kg/ha of MAP Sulphur cote.

4. 222 kg/ha of pre-sown 30:0:0:16 + 155 kg/ha of MAP Sulphur cote.

5. 135 kg/ha of pre-sown gypsum + 137 kg/ha of MAP at sowing.

6. Nil pre-sowing 137 kg/ha of MAP at sowing.

7. 210 kg/ha of pre-sown 31.5:0:0:18.75 + 155 kg/ha of MAP Sulphur cote.

8. 144.5 kg/ha of pre-sown Urea + 155 kg/ha of MAP Sulphur cote at sowing + 7 kg/ha of Hi Fol as a foliar spray.

9. 150 kg/ha of pre-sown Urea Zinc-cote 2.5% + 155 kg/ha of MAP Sulphur cote + 7 kg/ha of Hi Fol as a foliar spray.

10. 235 kg/ha of pre-sown 28:0:0:16 Zinc cote 1.7% + 155 kg/ha of MAP Sulphur cote + 7 kg/ha of Hi Fol as a foliar spray.

11. 222 kg/ha of pre-sown 30:0:0:16 + 155 kg/ha of MAP Sulphur cote + 7 kg/ha of Hi Fol as a foliar spray.

12. 135 kg/ha of pre-sown gypsum + 137 kg/ha of MAP at sowing + 7 kg/ha of Hi Fol as a foliar spray.

13. Nil pre-sowing 137 kg/ha of MAP at sowing + 7 kg/ha of Hi Fol as a foliar spray.

14. 210 kg/ha of pre-sown 31.5:0:0:18.5 + 155 kg/ha of MAP Sulphur cote + 7 kg/ha of Hi Fol as a foliar spray.

DISCUSSION

Tissue test results from all sites showed no trace element deficiencies and nitrogen levels were all adequate however 1% higher on plots receiving 80 kg of nitrogen. There was no significant differences in yield in response to zinc or sulphur rates across all sites.

SITE COMMENTS

Streatham site had base treatment of 500kg of gypsum per hectare, 2.5 tonne of lime per hectare and 100 kg of urea per hectare prior to sowing the trial, hence responses to nitrogen, sulphur would be unlikely. The site was affected by frost.

There was no significant differences between fertilizer treatments, this is likely due to the urea and gypsum being applied. There is no significant difference between fertilizer treatments, and plus or minus Hi Fol. The frost may have restricted an expression of Hi Fol response.

RESULTS

Fertilizer treatment Number:		**Yield tonnes/hectare**
T1	80Nitrogen 30P 18Sulphur(Elemental)	2.84
T2	80Nitrogen 30P 18Sulphur(E) 3.75 Zn	2.78
T3	80Nitrogen 30P 38Sulphur(E) Sulphate 18e 4 Zn	2.88
T4	80Nitrogen 30P 36Sulphur(E) Sulphate 18e	2.64
T5	14Nitrogen 30P 20Sulphate	2.66
T6	14Nitrogen 30P 2Sulphate	2.73
T7	80Nitrogen 30P 58Sulphate	2.75

L.S.D 0.30 tonne C.V 9 %

Hi Fol: 2.69t/ha No Hi Fol: 2.82 t/ha

Average of 21 treated and 21 non treated L.S.D 0.16 t/hectare
No significant difference

Penshurst site was sown with the PVI seeder for pastures, which didn't perform as well as the SFS seeder, which resulted in an uneven germination. The team didn't have adequate access to a spray unit, which resulted in the trial been out competed by weeds, reducing yield potential significantly. The atrazine resistant trial next to this trial had good weed control and yields approximately twice that of the Hi Fert trial. The relatively low yields and high variability across the site makes it difficult to determine clear response trends.

Gnarwarre site was sown late (2/7/98) it established well and, potential yield was good, in the end rainfall limited yield. Crop looked healthy, the hot weather and wind resulted in some grain loss (15 - 20%) when in the windrow. The different nitrogen treatments may have affected maturity, and therefore the percentage grain loss would also vary between these treatments. Hi fol appeared to have a positive affect on yield of .23 tonnes per hectare which equates to an increase in gross return of about $ 80.00 per hectare.

Fertilizer treatment Number:		**Yield tonnes/hectare**
T1	80Nitrogen 30P 18Sulphur (Elemental)	1.52
T2	80Nitrogen 30P 18Sulphure(E) 3.75 Zn	1.55
T3	80Nitrogen 30P 38Sulphur(E) Sulphate 18e 4 Zn	1.48
T4	80Nitrogen 30P 36Sulphur(E) Sulphate 18e	1.68
T5	14Nitrogen 30P 20Sulphate	1.61
T6	14Nitrogen 30P 2 Sulphate	1.54
T7	80Nitrogen 30P 58Sulphate	1.53

L.S.D 0.33 tonne CV 15 %

Hi Fol: 1.62 t/ha No Hi Fol: 1.49 t/ha

Average of 16 treated and 13 non treated L.S.D 0.18t/ha