

## 4. NUTRITION TRIALS

### 4.1 EVALUATING SULPHUR SOURCES FOR USE IN CANOLA (YALLA-Y-POORA VIC)

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**Rainfall (2005):** 543 mm  
**GSR:** (Apr – Nov) 359 mm

**Location:** SFS Yalla-Y-Poora Research site

**Aim:**

- To investigate the effectiveness of elemental sulphur in canola.
- To identify what percentage of the applied sulphur can be applied as fine (less than 250 micron) elemental sulphur without loss of grain yield or oil content.

#### Acknowledgements:

This trial is in co operation with Shell Canada and Queensland Fertilizer Operations (QFO). Una Allender (SFS Ltd) and Mick Keating (DPI). Thanks to Conna Wilson for the seed.

**Table 4-1: Latest Soil Test Results**

Test	Org. C %	P <sup>7</sup> mg/kg	K mg/kg	S mg/kg	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	Cu DTPA mg/kg	Zn DTPA mg/kg
<b>Result</b>	1.93	16.4	170	12.3	5.8	5.1	0.82	0.25
<b>Status</b>	Mod	Adeq	Adeq	Adeq	Mod Acidic	Mod Acidic	Adeq	Low

Test	CEC meq/100mg	Ca %	Mg %	Na %	S mg/kg 0-35	SALT dS/m	N (kg/ha) 0-10	N (kg/ha) 0-60
<b>Result</b>	7.23	65	22.6	6.7	12	0.10	28.6	
<b>Status</b>		Adeq	Eleva	SI Elev				

<sup>7</sup> P test is Olsen, Colwell P 25 ppm

Phosphate buffering Index 118.5 Deep N available 23 kg and Soil S approx 54.6 Deep soil 0 –35 cm

**Table 4-2: Treatment Details**

Treatment	Product mix	Nutrients applied ( kg/ha)				
		N	P	Se	Ss	St
1	MAP/SOA/Urea	60	25		28	28
2	Super M/Gold N	60	25	26	2	28
3	Super M/SOA/Urea	60	25	14	14	28
4	Super M/MAP/SOA/Urea	60	25	7	21	28
5	Super M/Gold N/Urea/SOA	60	25	21	7	28
6	MAP	60	25	0	1	1
7	S impregnated MAP	60	25	13.1	13.8	27

Urea SOA or Gold N was deep banded under all treatments to balance the total nitrogen (N) input to 60 kg/ha, no more than 12 kg of N was placed with the seed.

A fully randomised complete block design.

**Table 4-3: Calendar Of Events And Observations**

Date	Event	Comments
7/6/2005	Sown @ 5 kg/ha Grace treated with Jockey.	Sown into dry seed bed.
18/8/2005	Site inspection	Under too much moisture stress to tissue test
22/9/2005	Tissue tested First flower present	No visual differences between treatments
	Field day	All flowers gone pods filling well no visual differences.
9/12/2005	Harvested	

## Results

**Table 4-4: Grain Yield Across The Various Treatments**

Treatment	Grain Yield t/ha
1. MAP/SOA/Urea	1.424
2. Super M/Gold N	1.496
3. Super M/SOA/Urea	1.523
4. Super M/MAP/SOA/Urea	1.498
5. Super M/Gold N/Urea/SOA	1.434
6. MAP	1.465
7. S impregnated MAP	1.440
<b>LSD 5 %</b>	<b>0.160 (ns)</b>
<b>CV</b>	<b>11.5%</b>

The dry September limited yields at this site, yields were about on par with the district, there was no difference between treatments at flowering or at any stage of growth. Available soil sulphur (S) at sowing was 55 kg/ha (taken to a depth of 35 cm) and with a yield of 1.5 t/ha maximum, only 38 kg S was required for the crop. This crop had enough soil sulphur already supplied before additional sulphur was applied.