Canola Response to Phosphorus at Gunning Gap 2001

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Background

Canola phosphorus (P) response trials have been run on the CWFS regional sites for the last three years. The results of these six trials have been published widely. In general they showed canola yields can be improved on highly P responsive soils by increasing P fertiliser rates above 20 kg/ha.

Canola P response trials were sown again in 2001 to further investigate the potential for responses from high rates of P fertiliser.

Trial	**Canola phosphorus nutrition**
Location	Gunning Gap
Cooperator	M&T Hodges
Sown	**26/04/01**
Variety	Rainbow
Fertilser	300 kg/ha Gypsum presow 50 kg/ha N presow

Soil Test result
Incitec (May 00)

pH (CaCl2)	P (Colwell) ppm	S (MCP) ppm	CEC meq/100g	Ca:Mg ratio	Al saturation
4.7	19	68	7.39	4.05	0.3

Trial results

P **rate**	**Yield**	
	t/ha	**% of Nil**
Nil	1.47	100%
10	1.63	111%
15	1.68	114%
20	1.69	115%
25	1.71	116%
30	1.70	116%
40	1.70	115%
Mean	1.70	
LSD (5%)	0.05	**3%**
Co. Var. %	2%	
Significant	Yes	

Discussion

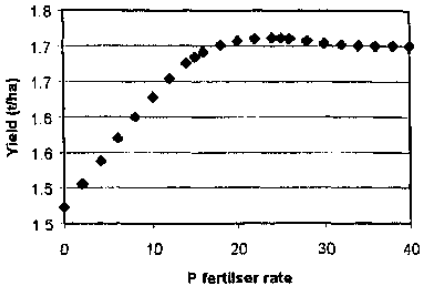
The P response curve (Graph 1) from this trial indicates no yield response to P fertiliser rates above 20 kg/ha. These results are in line with the other P response trials that have shown P responses above 20 kg/ha will only occur when the maximum P responsiveness is greater than 30%. In this trial the maximum P response was only 16%.

This lack of P responsiveness is surprising given a soil Colwell P level of 19 ppm. It is interesting to note that

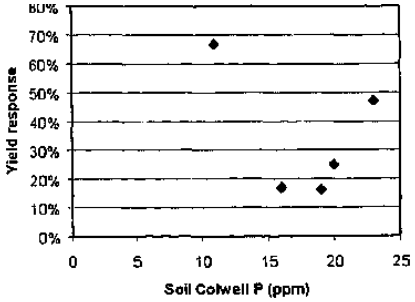
the soil pH is marginal for canola. The question maybe asked is the low pH limiting canola's responsiveness to P fertiliser? The previous two P response trials at Gunning Gap have also been relatively unresponsive to P when compared to other sites with similar soil Colwell P levels.

Soil Colwell P has not been well correlated with yield response in the trials run at Forbes over the last 3 years (Graph 2). A visual appraisal of early P responsiveness has provided a better insight of likely yield response and the potential for yield responses above 20 kg/ha P.

Graph 1. Canola yield response to P fertilser Gunning Gap 2001



Graph 2. Max canola yield response to P fertiliser vs soil Cowiell P (Forbes 99-01)



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