

Summit Granular and Liquid P comparison

Aim: To evaluate granular and liquid P fertilizer sources on sandy, low fixing soils

Research Officer: Alan Forbes & Justin Fuery
Company: SUMMIT FERTILIZERS



Farmer: Paul Hislop
Location: Jerramungup

Background:

Liquid phosphorus has been shown to be effective on the calcareous soils of the Eyre Peninsula, South Australia. These soils have very high pH and effectively lock up both P and Zinc. There have generally been poor responses to Liquid P on sandy soils with low fixing ability. This demo aims to evaluate liquid phosphorous as VigourFLO and MAPZFLO with granular compound ALLSTAR® and Vigour®.

Trial Details:

Plot size and replication	12*50m, 2 reps plus 3 controls		
Soil type	Sandy loam		
Sowing date	31 st May, 2003		
Conditions at sowing	Moist		
Machinery	Ausplow E-Series Multi stream DBS @ 12"		
Seeding rate	Camm @ 70kg (treated with Jockey®)		
Fertiliser	N Basal to 45kg with MAXamFLO		
Herbicides and Insecticides	Roundup	1.5	L/ha
	Trifluralin	2	L/ha
	Chlorpyrifos	1	L/ha
	Triad	800	ml/ha
Paddock History	2002 =Wheat, 2001 = Pasture, 2000= Wheat		

Soil Test results:

Depth (cm)	P (ppm)	K (ppm)	Cu (ppm)	Zn (ppm)	S (ppm)	PRI	pH
0 – 10	22	104	0.3	0.5	12	7	4.8

Results:

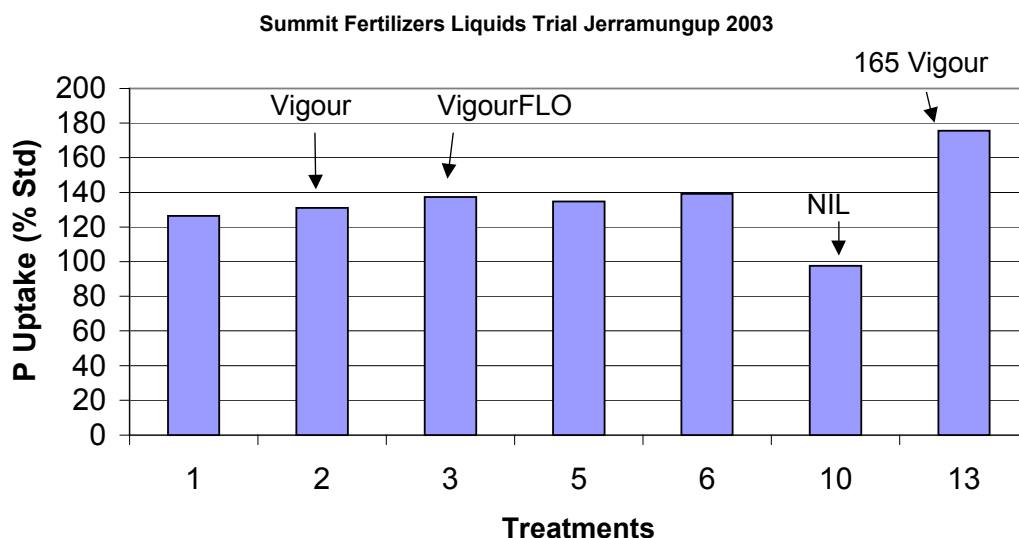


Figure 1. Calingiri P uptake from various phosphorus P sources

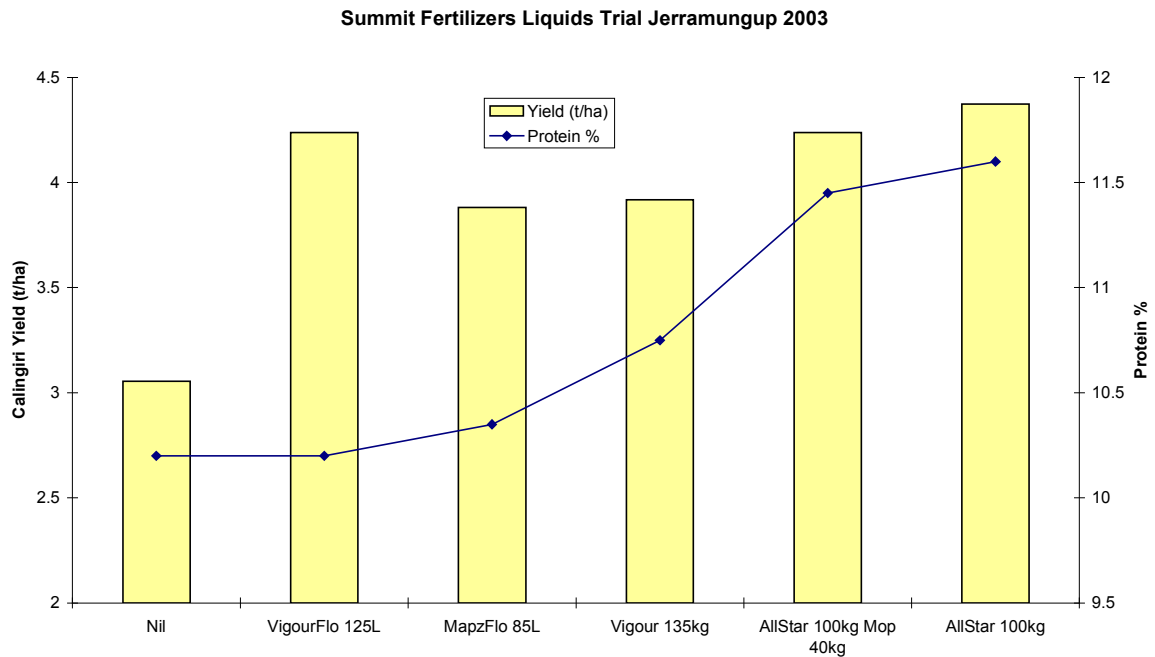


Figure 2. Calingiri grain yield (t/ha) and Protein (%) with various phosphorus treatments.

At equivalent rates of phosphorous, the VigourFLO treatments produced more grain yield than their granular Vigour comparisons. In this instance, 125L VigourFLO produced more grain yield than 135kg of Vigour. This may have been due to slightly improved P uptake from the Liquid P treatments (Figure 1). The application of potassium in VigourFLO may have also assisted as the MAPZFLO treatment did not yield as well as Vigour. The liquid P fertilizers are also thought to help release ‘fixed P’ from the soil. In this instance, where the lock up of P was low, there appeared to be a response when compared to Vigour.

Summit’s Allstar® produced maximum grain yield and protein at this site. This was only slightly greater than VigourFLO at 125L. The greater grain yield from the Allstar may have been a sulphur response. Allstar contains 15% S, 50% of which is in the elemental form. On sandy sites that receive good rainfall, sulphate leaching is common. When in the elemental form, sulphur lasts the entire growing season. The good performance of the Allstar treatments suggests that the elemental sulphur was effective.

Summary:

- VigourFLO increased grain yield above granular Vigour at equivalent P rates
- Allstar produced maximum yield of 4.4t/ha at equivalent P rates