Effect of starter fertiliser on establishment and grain yield on three albus and three angustifolius lupin varieties at three row spacings - Merriwagga 2014

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Introduction

Lupins have a high sensitivity to fertiliser toxicity at sowing, and lack of fertiliser response to grain yield. This is as a result of root exudates that make soil P more available. Previous trials have questioned the necessity of starter fertiliser in lupins. This trial is designed to measure these effects for the fourth year in a row under local environments.

Site details

Soil type:	Red sandy loam
Sowing date:	24th April
Available N at sowing:	36 kg/ha (0-60 cm)
Previous crop:	Bolac wheat
Rainfall:	160 mm April–October + 125 mm December–March

Treatments

6 lupin varieties	*3 Albus varieties:* Rosetta, Kiev Mutant, Luxor *3 Narrow leaf varieties:* Jenabillup, Mandellup, Barlock
2 fertiliser treatments	Nil and 60 kg/ha Granulock 15 (14.3N, 12P, 10.5S) applied with seed at sowing time
3 row spacings	25, 50 and 75cm

Results

There was a significant (albeit small) difference in yield between varieties as shown in figure 1. There was no difference in yield when 60 kg/ha Granulock 15 was added in any variety.

There was no difference in yield across row spacings, however there was a slight difference within varieties across row spacings as shown in figure 2. This is hard to explain and may be due to chance.

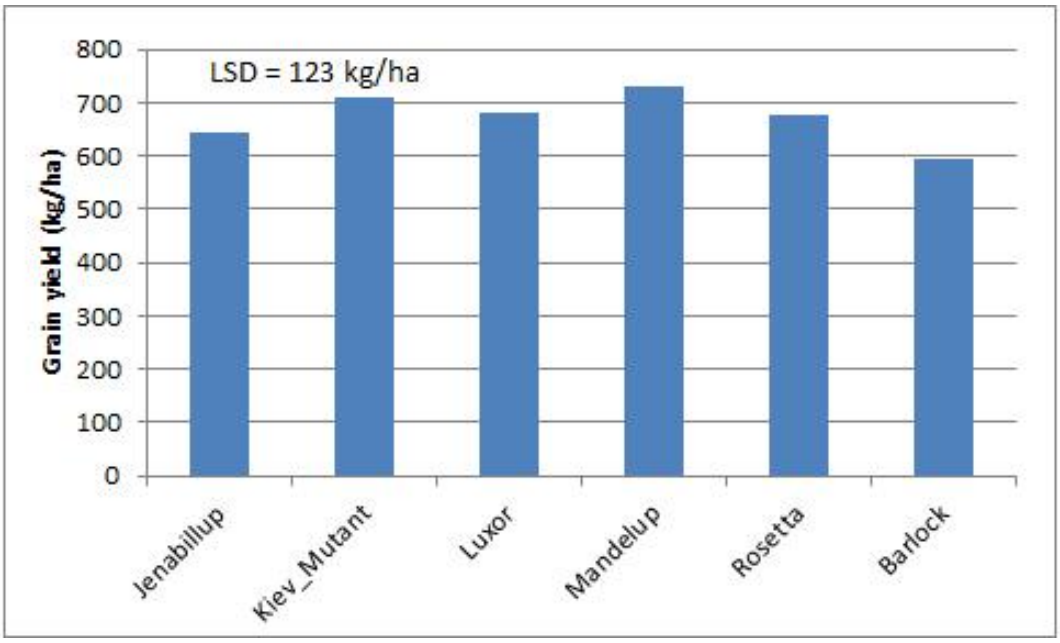

Figure 1: Yield of varieties averaged across all row spacings and fertiliser at Merriwagga in 2014 (l.s.d. = 123 kg/ha).

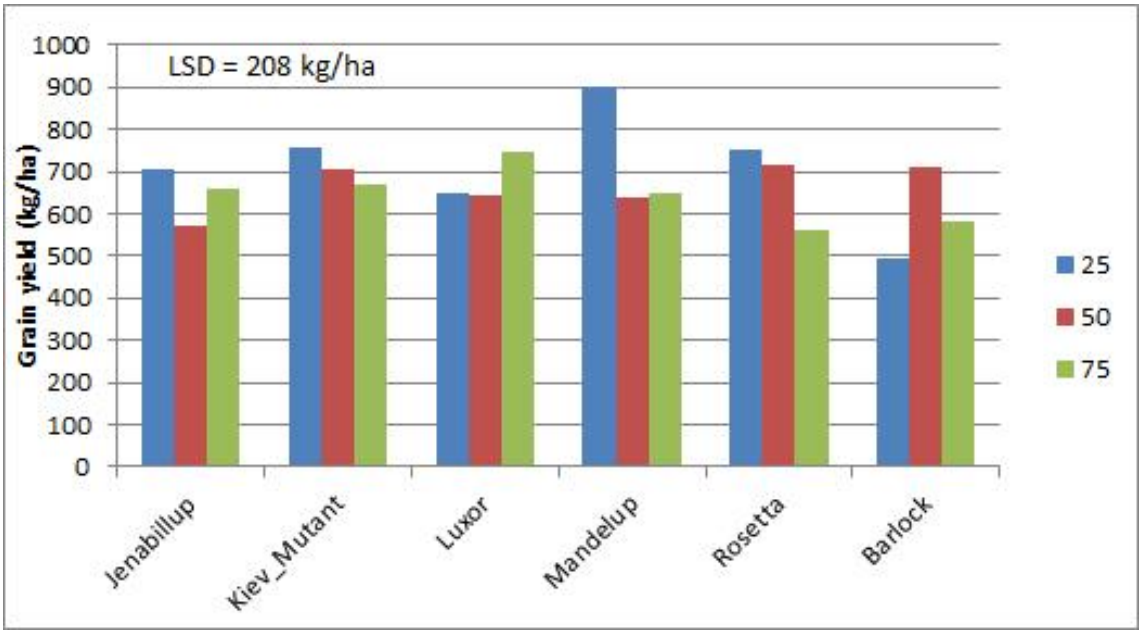

Figure 2: The response of variety by row spacing at Merriwagga in 2014 (l.s.d. = 208 kg/ha).

Summary

This is the fourth year that this trial has been repeated at Merriwagga. It is clear that the yield response from adding starter fertiliser on this site is hard to justify.

With regard to row spacings, the most consistent yield has been achieved at the narrowest row spacing of 25cm, however the differences in yield between 25 and 50cm row spacings are low. Increasing row spacing to 75cm however reduced yield in most trials, and created difficulties physically getting the plants into the header.

Acknowledgements

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