

## **B6. Faba Bean Inoculation and Liming, Eyre Peninsula (Wanilla), South Australia**

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### **Aim**

To assess the effect of various inoculum and liming techniques on the yield of faba bean in a district characterised by acidic red soil types and traditionally not considered suited to faba bean production.

### **Treatments**

Varieties: Nura  
Sowing date: 8 May  
Inoculum treatments: Nil  
Granular (Gp F)  
Peat (Gp F)  
Liming treatments: Nil  
Lime @ 2t/ha  
Fertiliser: Map + Zn @ 90kg /ha at sowing

### **Results and Interpretation**

- There was no grain yield response to the addition of lime at 2t/ha. Soil pH was 6.8 in an unlimed area at this site, which is in the ideal range for beans, and is likely to explain the lack of yield response. Soil pH was not tested after liming.
- Beans showed a yield response to use of inoculum (Table 1), which is not surprising since this soil has no history of growing beans and is prone to waterlogging.
- Applying granular inoculum with the seed generated a 13% yield response compared to the nil.
- Applying peat inoculum as a slurry generated a 22% yield response compared to the nil, and an 8% increase compared to the granular treatment.

Table 1: Effect of inoculum type of grain yield of faba bean, Wanilla 2012.

<b>Inoculum</b>	<b>Yield (t/ha)</b>
Nil	1.45 <sup>a</sup>
Granular	1.64 <sup>b</sup>
Peat	1.77 <sup>c</sup>
LSD (P<0.05)	0.06

### **Key Findings and Comments**

- Soil pH (6.8) at this site was ideal for bean growth, and attempted amelioration through application of lime had no effect on grain yield. In soils with higher acidity beans may still benefit from the application of lime.
- Inoculation of beans is considered to be “cheap insurance” in areas with low previous history or acidic soils prone to water logging. However the addition of inoculum may not always provide a significant yield response, but will generally improve nodulation and consequently N fixation.
- Since there has been no history of growing faba beans within the trial area a significant yield response was generated by the use of inoculum (peat and granular), and applying inoculum in peat form increased yield further than granular.
- There are a number of benefits of using granular inoculum compared to peat, such as ease of application and potential for dry sowing (which may be important when growing beans). Seed dressed with peat inoculum, applied in the form of a slurry, should be used within 24 hours, and should not be sown into dry soil. However, peat contains a higher concentration of rhizobia per gram than granular inoculants, and this may explain the higher yield generated

using peat inoculum in this trial. If this is the case, it is possible that using a higher rate of granular inoculum may have generated a larger yield response.