

## **F6 Sowing Time, LRZ Southern Mallee (Curry), Victoria**

### **Aim**

To investigate the adaptability of a range of lentil varieties and variety mixes to varying sowing dates.

### **Treatments**

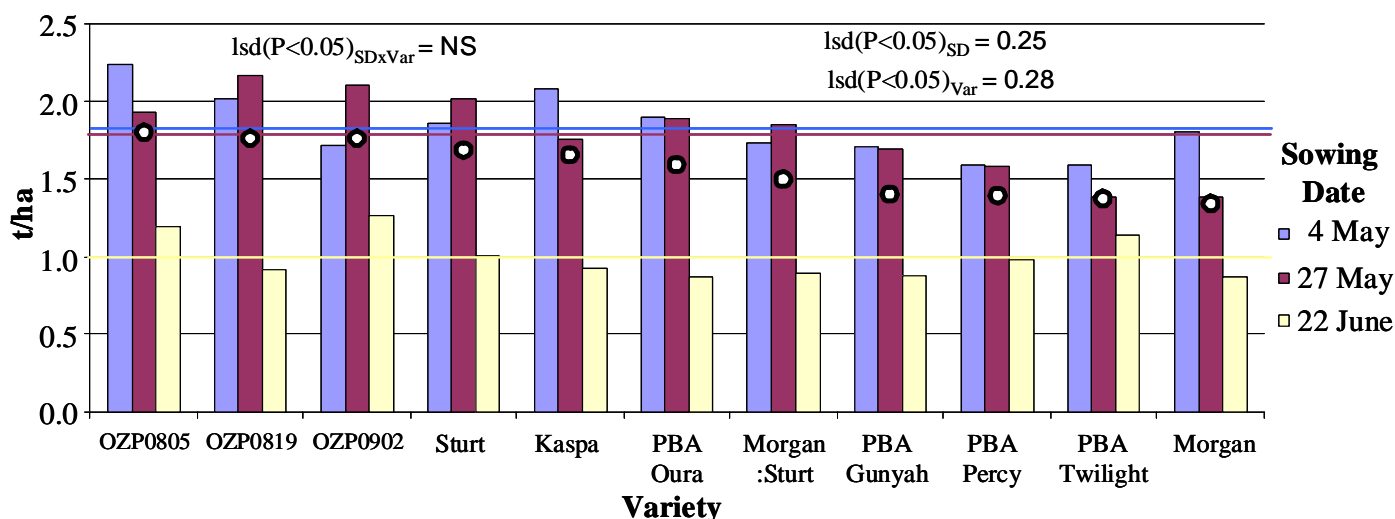
Varieties: Kaspia, Morgan, PBA Oura, OZP0805, OZP0819, OZP0902, PBA Percy, PBA Gunyah, PBA Twilight, Sturt.  
Variety Mixes: Morgan:Sturt. sown with a 50:50 ratio based on targeted plants/m<sup>2</sup>.  
Sowing dates: 4 May (Early), 27 May (Mid), 22 June (Late).

### **Other Details**

Row Spacings/Stubble: 30 cm row spacing, inter-row, standing stubble.  
Fertiliser: MAP + Zn @ 40 kg/ha at sowing.  
Plant Density: 35 plants/m<sup>2</sup>.

### **Results and Interpretation**

- Key Message: The results again highlighted that earlier sowing in field peas is generally beneficial in the Mallee. The new varieties, OZP0805, OZP0819, OZP0902 had the highest average grain yields in this trial. Results for the forage type indicate that it has significant potential as a dual purpose crop that can produce high biomass and good yields given appropriate seasonal conditions.
- Plant establishment – Establishment for all field pea varieties was on target for the May 4 sowing (30 plants/m<sup>2</sup>) but reduced by 20% at the 27 May sowing and 50% at the 22 June sowing (data not shown).
- Mouse Damage – Significant mouse damage was observed across the trial and each plot was scored for damage on a percentage scale. Mouse damage was used as a covariate in the grain yield analysis.
- Grain Yield – Grain yields were generally good, ranging between 0.9 and 2.2 t/ha (Fig. F6.1). Variability in the trial was relatively high due to mouse damage and there was no interaction between sowing date and variety, however the main effects were significant. Generally, the June 22 sowing date resulted in lowest yield (approximately 50% reduction), while there was no difference between the May 4 and May 27 sowing dates (Fig. F6.1). The new varieties, OZP0805, OZP0819, OZP0902 had the highest average grain yields in this trial. Although not significant, there appeared a trend that varieties such as OZP0805, Kaspia and Morgan, all benefit from earlier sowing. Conversely, OZP0819, OZP0902 and Sturt showed a slight decline in yield from the May 4 to May 27 sowing dates. The variety mix showed grain yield approximately half way between in its two components. We also calculated the proportion of each variety in the variety mixes. The proportion of Morgan in the mix increased from 40% to 45% to 52% as sowing was delayed from May 4 to May 27 to June 22, respectively.
- Grain Weight – Grain weight was reduced at both the later sowing dates compared with 4 May, in all varieties except OZP0902, which was consistent across all sowing dates (data not shown).



**Figure F6.1.** The effect of the interaction between sowing date and field pea variety on grain yield at Curyo in 2011. Mean sowing date grain yield indicated by horizontal lines; mean variety grain yield indicated by circles.

### Key Findings and Comments

Due to extreme rainfall events during the summer of 2010/11, soil profiles were at or near field capacity at sowing in 2011. Early growth at Curyo was restricted due to a dry period during May and June, and this may have had any significant impact on grain yield. In addition the lower plant population achieved at late sowing dates are likely to reduce grain yields. Unfortunately, similar to other trials at Curyo, the mouse plague at sowing had a significant impact on establishment, particularly at the May 27 and June 22 sowing dates, despite multiple application of mouse bait (ie. the site was baited 6 times from late April through to the end of June).

The results again highlighted that earlier sowing in field peas is generally beneficial in the Mallee. However the results also indicate that if sowing is delayed it is important to be aware of the effects on the grain yield of the variety that is chosen. Varieties such as OZP0805, Kaspas and Morgan all appear to show greater response to early sowing than OZP0819, OZP0902 and Sturt. The results also clearly indicate the yield gains that are being made through the breeding program. The performance of OZP0902 was surprising as it has been developed as a forage type, for biomass production, rather than grain yield. In other trials its yield can be 30% less than the best adapted varieties (eg. see field pea trial from Rupanyup below, F8.1). These results indicate that given suitable growing conditions, its yield can be comparable to other commonly grown varieties, meaning that this variety has potential for use as a dual purpose crop.

The variety mix (Morgan:Sturt) was grown this year to assess whether yield stability could be improved by mixing different types of peas together. Overall yields were approximately half way between the difference in its two components, which could be expected as there were no stress event that would adversely affect one variety over the other. Interesting the proportion of Morgan in the mix increased from markedly as sowing was delayed indicating that if seed was retained for sowing from one year to the next it is likely to have a significant impact on the relative proportions in the mix for the following season. Further work will occur in 2012 to further investigate these responses.