

## **F8 Sowing Time, MRZ Wimmera (Rupanyup), Victoria**

### **Aim**

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

### **Treatments**

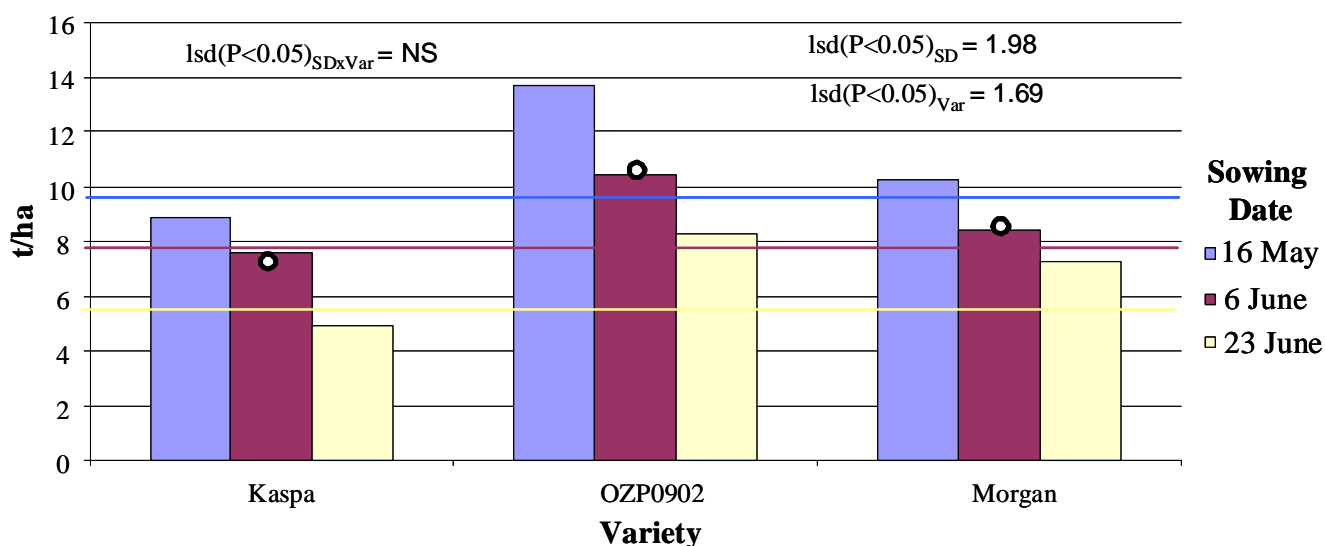
Varieties: Kaspia, Morgan, PBA Oura, OZP0805, OZP0819, OZP0902, PBA Percy, PBA Gunyah, PBA Twilight, Sturt.  
Variety Mixes: Morgan:Sturt. sown with a 50:50 ratio based on targeted plants/m<sup>2</sup>.  
Sowing dates: 16 May (Early), 6 June (Mid), 23 June (Late).

### **Other Details**

Row Spacings/Stubble: 30 cm row spacing, inter-row, standing stubble.  
Fertiliser: MAP + Zn @ 60 kg/ha at sowing.  
Plant Density: 35 plants/m<sup>2</sup>.

### **Results and Interpretation**

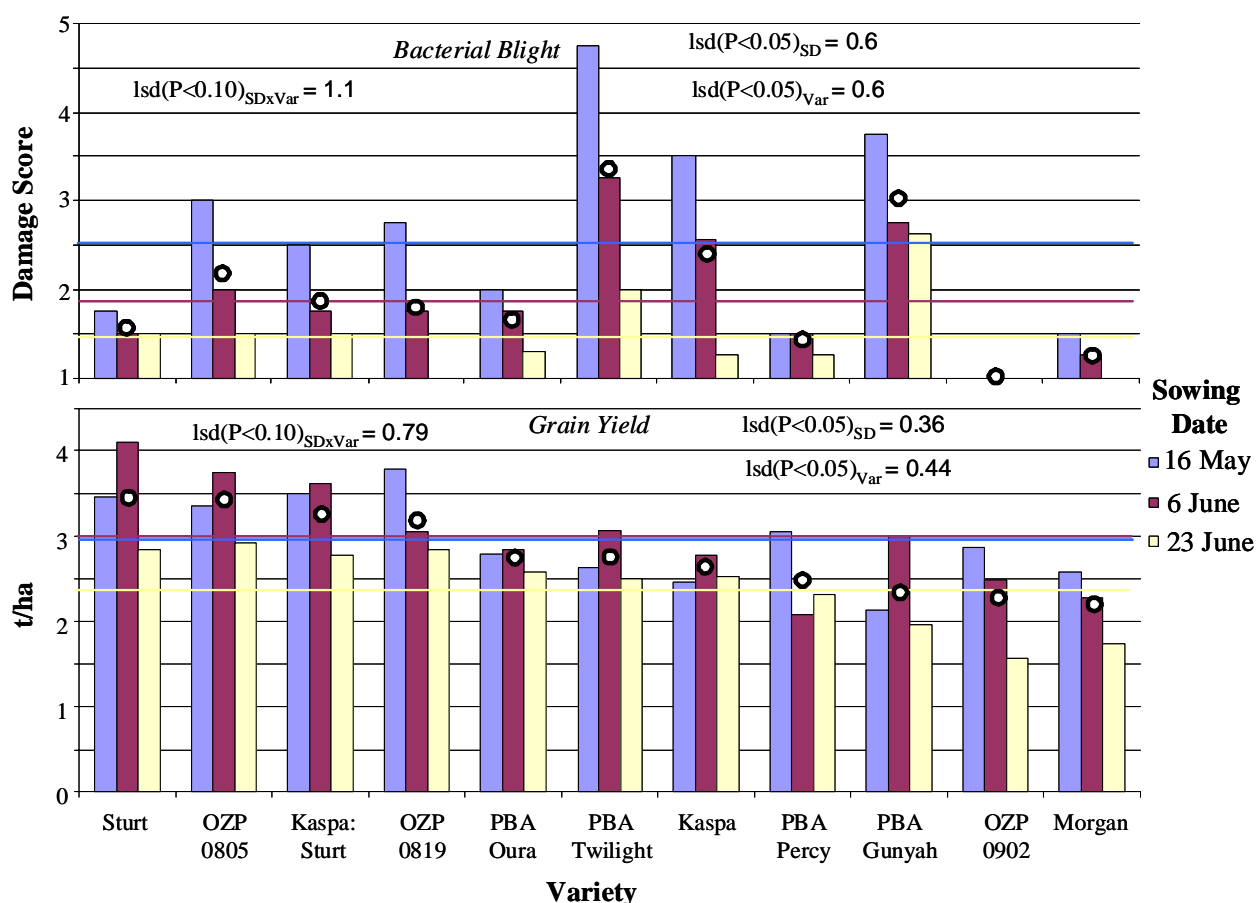
- **Key Message:** The results again highlighted that delayed sowing in field peas will generally reduce yields. The new varieties, OZP0805, OZP0819 had the equal highest average grain yields in this trial, along with Sturt. The new forage line, OZP0902, produced significantly more biomass at maturity than Kaspia or Morgan at all sowing dates.
- **Plant establishment** – Establishment for all field pea varieties was on target for the May 16 sowing (30 plants/m<sup>2</sup>) and reduced slightly in the 6 June and 23 June sowing dates (data not shown).
- **Bacterial Blight Damage** – Significant levels of bacterial blight were noted in this trial and scored on October 27. Generally bacterial blight damage was worse in the early sown plots and reduced in the late sown plots. OZP0902, the new forage line, showed no symptoms of bacterial blight, while PBA Twilight and PBA Gunyah, were most severely affected (Fig F8.2).
- **Biomass Production** – The new forage line, OZP0902, produced significantly more biomass at maturity than Kaspia or Morgan at all sowing dates. In particular, 13.7t/ha of biomass were produced in the early sown treatment, 35% more than Kaspia and 25% more than Morgan (Fig. F8.1).



**Figure F8.1** The effect of the interaction between sowing date and field pea variety on biomass production at maturity at Rupanyup in 2011.

- **Grain Yield** – Grain yields were generally very good, ranging between 1.5t/ha for OZP0902 sown June 23 to 4.1t/ha for Sturt sown June 6 (Fig. F8.2). In this trial the June 23 sowing date

generally resulted in lowest yield, although there was a slight interaction between sowing date and variety (Fig. F8.2). OZP0819 and PBA Percy, both showed significantly higher grain yields when sown May 16, while Sturt and PBA Gunyah had highest yields when sown June 6. Overall, OZP0805, OZP0819, Sturt and the Sturt:Kaspa mix had the highest grain yields (Fig. F9.2). The forage types Morgan and OZP0902, were lowest yielding. In the variety mix yields were between the two component varieties, but generally closer to the higher yielding variety Sturt. The proportion of Kaspa in the mix increased from 35% to 37% to 43% as sowing was delayed, respectively.



**Figure F8.2.** The effect of the interaction between sowing date and field pea variety on bacterial blight scores (1 – No damage, 9 – Dead) and grain yield at Rupanyup in 2011. Mean sowing date scores and grain yield indicated by horizontal lines; mean variety scores 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. Unlike Curyo, early growth at Rupanyup was not affected by the drier period during May and June. Mild temperatures and sufficient rainfall during the main growth periods resulted in excellent grain yields (up to 4t/ha). Bacterial blight was present in this trial and potentially had a negative impact on grain yield in varieties such as Kaspa, PBA Gunyah and PBA Twilight. Overall grain yield results were similar to Curyo in that there was little difference between the first two sowing dates, with a significant reduction at the later sowing date. However, response of individual varieties to sowing date was different to Curyo. For example, at Curyo it appeared that OZP0805 was more responsive to early sowing than OZP0819, however at Rupanyup this response was reversed. The relative ranking of varieties, was similar between sites, with mid maturing varieties such as OZP0805, OZP0819 and Sturt highest and early varieties, such as PBA Gunyah, PBA Twilight and PBA Percy lowest. Primarily, the trial clearly indicates that significant yield and disease resistance gains are being achieved through the breeding program.

The performance of the forage type, OZP0902, was excellent producing the highest biomass of varieties assessed (up to 13.7 t/ha when sown early), with grain yields up to 2.9t/ha when sown early. Similar to Curyo these results indicate that the biomass production of this variety makes it suitable for forage and hay production, while its grain yields under suitable growing conditions are high enough to make is acceptable for grain harvest.

Similar to Curyo the variety mix (Kaspa:Sturt) was grown this year to asses whether we could improve yield stability by mixing different types of peas together. Overall yields were approximately between the two components, but closer to the higher yielding variety Sturt. In addition bacterial blight scores were significantly lower than the susceptible variety Kaspa and slightly higher than Sturt. The results appear to indicate that the mix can partially compensate for yield loss in one variety, but still does not achieve the grain yields of an individual line. Further work will occur in 2012 to further investigate these responses.