

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:	Kaspa, Morgan, PBA Oura, OZP0805, PBA Pearl, PBA Hayman, PBA Percy, PBA Gunyah, PBA Twilight, Sturt, OZP1101, OZP1103, OZP1104.
Variety Mixes:	Kaspa:PBA Pearl and Kaspa:Sturt sown with a 50:50 ratio based on targeted plants/m ² , and Kaspa:PBA Twilight:PBA Gunyah sown with a 33:33:33 ratio based on targeted plants/m ²
Sowing dates:	15 May (Early), 13 June (Mid), 18 June (Late).

Other Details

Row Spacings/Stubble:	30 cm row spacing, inter-row, standing stubble.
Fertiliser:	MAP + Zn @ 80 kg/ha at sowing.
Plant Density:	35 plants/m ² .

Results and Interpretation

- Key Message: Bacterial blight had a significant impact on the grain yield of varieties in 2012. Sturt and OZP0805 were highest yielding varieties in this trial, similar to Curyo. Sturt and PBA Percy still seem to have the higher bacterial blight tolerance that needs to be achieved in the semi-leafless types
- Plant establishment – Establishment for all field pea varieties was on target for the May 15 sowing (30 plants/m²) and reduced slightly in the 13 June and 18 July sowing dates (data not shown).
- Bacterial Blight Damage – Severe levels of bacterial blight were noted in this trial and scored on October 23 (Fig.1). Bacterial blight damage was worst in the early sown plots, with some plots being nearly completely wiped out. PBA Percy, Morgan Sturt and PBA Hayman had the lowest damage scores (less than 3 for all sowing dates. PBA Gunyah, Kaspa and PBA Twilight showed the worst symptoms with scores greater than 6 in the May 15 and June 13 sowing dates. These disease symptoms observed in this trial indicate that some varieties may be more susceptible than initially estimated through the breeding program.
- Grain Yield – Grain yields ranged from 0.8 t/ha for Kaspa sown May 15 to 2.15 t/ha for Sturt and OZP0805 sown June 13 (Fig. 1). As expected, grain yields were significantly negatively correlated with bacterial blight scores in the May 15 and June 13 sowing dates ($r=-0.91$ and $r=-0.85$, respectively). For the most sensitive varieties, PBA Gunyah, Kaspa and PBA Twilight grain yields were reduced by 35% to 50% in the May 15 sown plots compared with the July 18 sown plots. For the more tolerant lines, PBA Percy, Morgan Sturt and PBA Hayman, grain yields for May 15 sown plots were between 10% less and 5% greater than July 18 sown plots. The variety mix yields were generally between the component varieties.

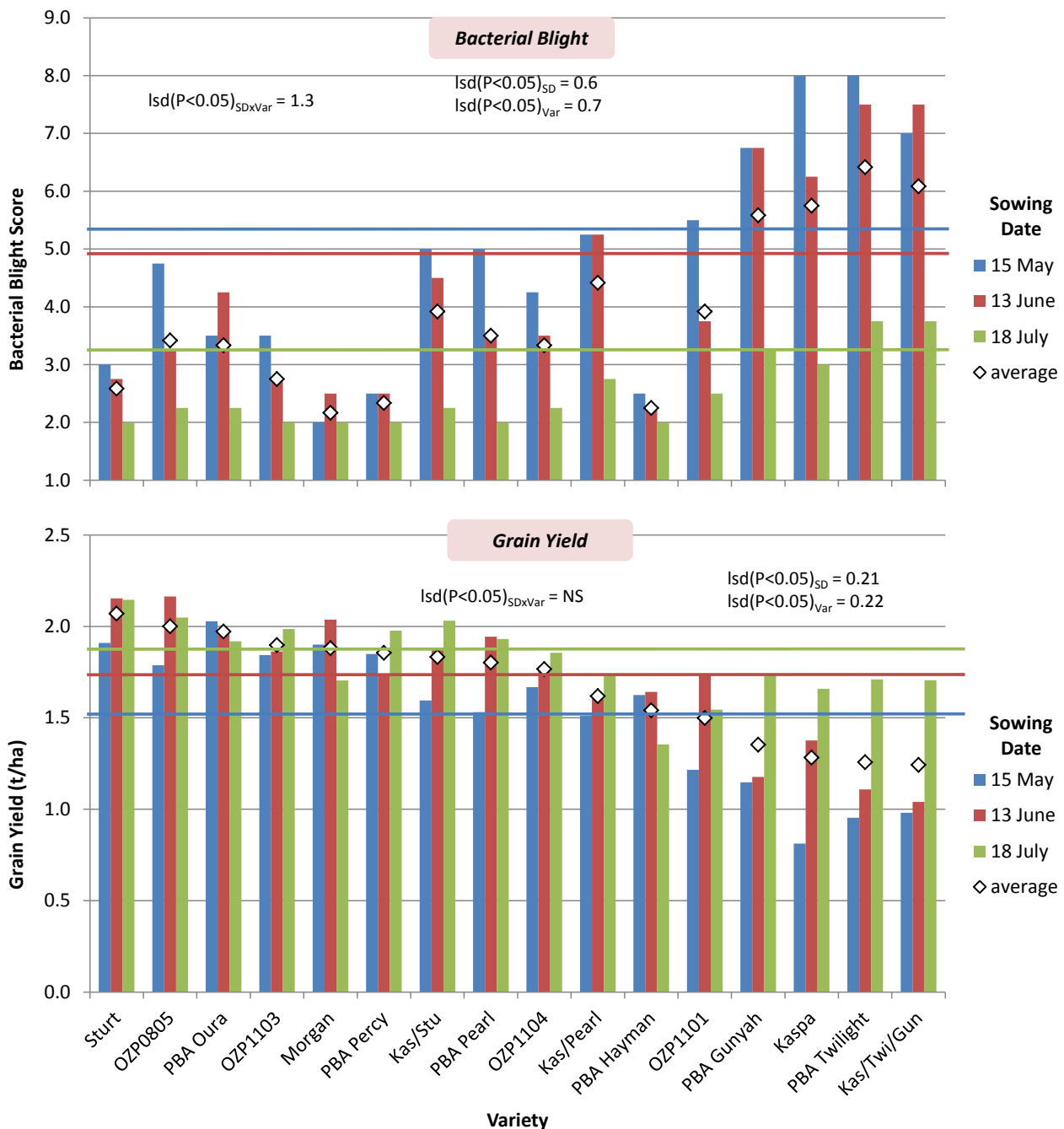


Figure 1. The effect of the interaction between sowing date and field pea variety on bacterial blight scores (1 – No damage, 9 – Dead) and grain yield at Rupanyup in 2012. Mean sowing date scores and grain yield indicated by horizontal lines; mean variety scores grain yield indicated by circles.

Key Findings and Comments

Bacterial blight had a significant impact on the grain yield of varieties in 2012. Interestingly though, the two highest yielding varieties in this trial Sturt and OZP0805, were the same as Curyo. The data highlights some of the significant improvements that have been made through the breeding program in regards to both resistance and tolerance to bacterial blight. Varieties like OZP0805, with the semi-leafless characteristic and similar grain type a had significantly lower disease scores than Kaspa and higher grain yields in this trial. However, the more conventional plant types, like Sturt and PBA Percy still seem to have the higher tolerance that needs to be achieved in the semi-leafless types. In regards to the forage types, both seem to have better resistance to bacterial blight than other varieties, but they will still show symptoms and suffer yield loss under conducive conditions.