

F7. Field Pea Crop-topping, MRZ Yorke Peninsula (Melton), South Australia

Aim

To assess the agronomic practice of 'crop topping' at multiple application timings on grain yield and grain weight of field pea varieties varying in plant maturity.

Treatments

| | |
|---|---|
| Varieties: | see Table . |
| Treatments: | see Table 1 for crop topping application timing and dates |
| | Nil - no desiccant applied |
| | Early - applied approximately two weeks prior to the ryegrass milky dough stage |
| | Mid/Recommended - applied at the ryegrass milky dough stage |
| NB: A late treatment was not applied in 2014 due to the dry and rapid finish to the season. | |

Other Details

| | |
|--------------------|--|
| Sowing date: | 29 th May |
| Fertiliser: | MAP + Zn (2%) @ 90 kg/ha at sowing |
| Seed Treatment: | P-Pickel T (200ml/100 kg seed) |
| Foliar Fungicides: | Canopy Closure –Carbendazim @500ml/ha, Chlorothalonil @2L/ha Mid flowering to Early Podding – Carbendazim @500ml/ha, Chlorothalonil @ 2L/ha |

Results and Interpretation

Grain yield

- Significant timing and variety responses for grain yield were observed indicating that varieties performed similarly across the three crop timings.
- Across all varieties, a 24% yield loss was incurred from crop topping two weeks prior to the recommended timing (rye grass milk dough stage) compared to the recommended and Nil treatments which yielded similar.
- PBA Oura and OZP1101 were the equal higher yielding varieties while Kaspera was the lower yielding variety than all other varieties except Parafield and PBA Coogee (**Error! Reference source not found.**).

Grain weight

- Significant two way interactions (timing by variety) were observed for grain weight.
- Crop topping two weeks prior to the recommended timing (rye grass milk dough stage) led to lower grain weights compared to the recommended and Nil treatments which yielded similar.
- On average a 17% grain weight reduction was observed from early crop topping across all varieties varying from 6% (PBA Oura) to 28% (Kaspera).

Key findings and comments

- All varieties showed similar levels of yield loss from crop topping two weeks prior to the recommended timing (rye grass milk dough stage) and no yield loss at the recommended timing under dry finishing conditions in 2014 and therefore no one variety was more or less suited to this agronomic practice.

Previous research has suggested that all field pea varieties with early maturity ratings or early to mid-maturity ratings are well suited to the practice of crop topping in SA even in seasons with longer and more favourable finishes. Varieties rated mid maturity or later require more caution with this practice in some seasons.

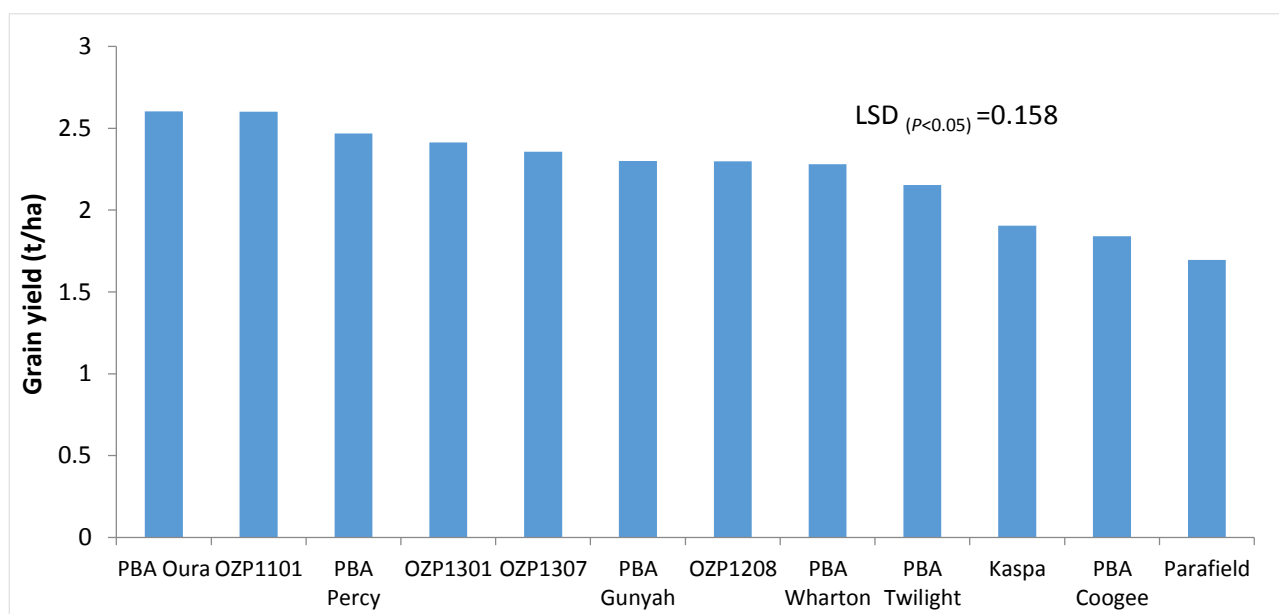


Figure 7: Grain yield (t/ha) of 12 field pea varieties averaged across two crop topping regimes at Melton, South Australia, 2014.

Table 1: Effect of crop-top timing on grain yield and grain weight of field pea varieties at Melton, South Australia 2014. Varieties are ranked in order according to their visual maturity rating from earliest to latest (E = Early, M = Mid, L = Late).

| Treatment | Maturity Profile | | Yield (t/ha) | Yield (% of Nil) | | Grain Wt. (g/100) | Grain Weight (% of Nil) | |
|--------------|------------------|-----------------|--------------|------------------------------|-------------------|-------------------|------------------------------|-------------------|
| | Flower Timing | Maturity Timing | | - 2 wks ^a (15/10) | Recommended 23/10 | | - 2 wks ^a (15/10) | Recommended 23/10 |
| Variety | | | | | | Nil | | |
| PBA Twilight | E | E | 2.15 | 76 | 97 | 18.9 | 85 | 99 |
| PBA Percy | VE | E | 2.47 | | | 21.5 | 84 | 98 |
| PBA Wharton | E | E | 2.28 | | | 18.6 | 85 | 97 |
| PBA Oura | E-M | E | 2.60 | | | 19.7 | 94 | 105 |
| PBA Gunyah | E-M | E | 2.30 | | | 19.5 | 85 | 101 |
| OZP1301 | M-L | M | 2.41 | | | 15.6 | 83 | 100 |
| OZP1307 | M-L | M | 2.36 | | | 18.9 | 81 | 99 |
| OZP1101 | L | M | 2.60 | | | 18.6 | 81 | 95 |
| OZP1208 | L | M | 2.30 | | | 19.1 | 80 | 102 |
| Kaspas | L | M | 1.90 | | | 17.4 | 72 | 100 |
| PBA Coogee | L | M | 1.84 | | | 17.9 | 81 | 100 |
| Parafield | M-L | M-L | 1.70 | | | 16.0 | 85 | 102 |
| Mean | | | 2.24 | 1.87 | 2.40 | 18.48 | 83 | 100 |

LSD ($P<0.05$) variety 0.158 (grain yield), timing 0.404 (grain yield)

NB: shading indicates a significant difference from the nil treatment.