

## **F9. Sowing Time, Crop topping, Disease Management, HRZ Southern (Westmere), Victoria**

### **Aim**

To investigate the adaptability of a range of field pea varieties to varying sowing dates, crop topping and disease control.

### **Treatments**

Varieties:	Kaspa, PBA Oura, PBA Hayman, Morgan, PBA Pearl, OZP0805, OZP1103, OZP1101.
Sowing dates:	9 May (Early), 6 June (Mid), 4 July (Late).
Crop Topping:	Mid: Applied at rye grass milky dough
Disease Control	Fortnightly: chlorothalonil 500 @ 2 L/ha applied fortnightly starting 6 weeks after emergence. Early: mancozeb @ 2kg applied 9 Node + early flower

### **Other Details**

Stubble:	Cultivated
Row Spacing:	20 cm.
Fertiliser:	MAP @ 60 kg/ha at sowing.
Plant Density:	35 plants/m <sup>2</sup> .

### **Results and Interpretation**

- Key Message: Early sowing, concurrent with previous research, was highest yielding in 2011. There appear to be several promising new varieties available for southern Victoria, offering a range of grain types and forage options, associated with excellent yield potential. Crop topping results highlights the importance for growers and advisors to be aware of both weed and crop growth stages, otherwise significant grain yield loss could occur.

Seasonal conditions at Westmere were excellent for pulse production, with adequate rainfall and few high or low temperature events that impacted on yield. Grain yields ranged from 2.3 t/ha for PBA Hayman sown Jul 4 to 5.0t//ha for Kaspa sown 9 May. A summary for each of the agronomic treatments is outlined below.

- Disease management – There was no impact of disease management in field peas for 2012.
- Sowing Dates – As there was no impact of disease management, data for sowing dates has been averaged across all disease management treatments (but excludes the crop topping treatment (Table 1)). Generally the early (9 May) and mid (6 June) sowing dates had similar yields, while the later sowing date (4 July) was 30% lower yielding (Table 1). However, there were some varietal differences to this trend. PBA Hayman showed a slight yield increase at the mid sowing date and no yield loss at the last sowing date. OZP1103 generally showed lower yield loss with delayed sowing compared with all varieties except PBA Hayman. Conversely, PBA Oura appeared to show the greatest yield loss between the early, mid and late sowing times. Comparing the overall yield of varieties, Kaspa and OZP0805 were highest and PBA Hayman lowest (Table 1).
- Crop Topping – Yield loss from crop topping in 2012 ranged from 5% to 65% (Table 2). Generally the yield reductions were least at the latest sowing date and highest at the early sowing date. PBA Hayman showed the greatest yield loss with the crop topping treatment at all sowing dates, while there was little difference between other varieties at the early and mid sowing dates. At the latest sowing date, OZP1101 and OZP1103 appeared to show the least yield loss (Table 2).

**Table 1.** Effect of sowing date on grain yield (t/ha) of field pea varieties grown at Westmere in 2012. Underline indicates highest yield variety within that sowing date. Shading indicates yield significantly different from highest yielding variety.

Variety	9 May	6 June	4 July	Mean
OZP0805	4.89	4.73	3.54	<u>4.39</u>
Kaspa	<u>4.98</u>	4.72	3.38	<u>4.36</u>
OZP1103	4.55	4.54	<u>3.73</u>	4.27
OZP1101	4.80	<u>4.76</u>	3.03	4.20
PBA Pearl	4.54	4.25	2.84	<u>3.88</u>
Morgan	4.50	4.06	2.94	<u>3.84</u>
PBA Oura	4.69	4.06	2.74	<u>3.83</u>
PBA Hayman	2.44	2.91	2.28	<u>2.54</u>
Mean	<u>4.42</u>	4.25	<u>3.06</u>	3.91

**Table 2.** Grain yield reduction (%) from a crop topping treatment applied to new field pea varieties sown at 3 dates at Westmere in 2012.

Variety	9 May	6 June	4 July	Mean
OZP0805	26	42	16	28
Kaspa	25	32	21	26
OZP1103	34	45	6	28
OZP1101	32	36	5	24
PBA Pearl	31	37	25	31
Morgan	31	47	22	33
PBA Oura	30	38	12	27
PBA Hayman	65	63	46	58
Mean	34	42	19	32

### Key Findings and Comments

- Varieties – Kaspa and its potential replacement OZP0805, performed extremely well at Westmere in 2012, with yields in the top 3 lines across all sowing dates. The new white pea PBA Pearl also showed promise and offers different marketing opportunities. Also of note is OZP1103 which showed both excellent yields and biomass (data not shown) as this variety has potential for dual purpose (i.e. both forage and grain). Further varietal details below.
- Sowing Dates – As has been seen in previous research, early sowing produced the highest yields. Based on yields achieved of the earlier sown treatments (4.5t/ha) peas could have achieved a gross profit of approximately \$1300/ha based on management costs of \$250/ha and grain price at \$340/t.
- Crop Topping – In 2012 at Westmere, crop-topping targeting ryegrass at the milky dough stage caused significant yield loss in all varieties grown. This could be expected as the crop was too green and seed not sufficiently developed for application of a desiccant. It highlights the importance for growers and advisors to be aware of both weed and crop growth stages, otherwise significant grain yield loss could occur.
- Disease Management – These treatments were implemented to assess the effect disease is having on grain yields of field peas in a high rainfall zone. Unlike 2011, there was no response to disease control as disease pressure was low. A fortnightly fungicide regime is unlikely to be economically viable, unless yields are above 2t/ha and differences are in excess of 20% when using a fungicide. However, the early strategy, although not economically profitable, may be a risk management strategy to minimise the chance of yield loss from disease like black spot.