F6. Desiccation Timing, H-MRZ (Wagga Wagga), NSW

Aim

To study timing of post-flowering applications of desiccants on

1. sterilisation of developing ryegrass seeds and
2. seed-filling, development and yield of range of field pea varieties.

The objective is to time a single "crop-topping" spray to kill all developing ryegrass seeds and at the same time desiccate the field pea crop with minimal or no loss of yield or seed size.

Treatments

Varieties: Kaspa, PBA Gunyah, PBA Oura and PBA Pearl

Desiccation Timings: 1. Early: 22 October
2. On Time: 30 October
3. Late: Not applied as plots were fully mature
4. Nil

Sowing Date: 31 May

Stubble: 3-4 t/ha barley stubble (30cm high) providing good ground cover

Fertiliser: Grain legume super (0:15:7) @ 80 kg/ha placed approximately 30-40mm below the seed.

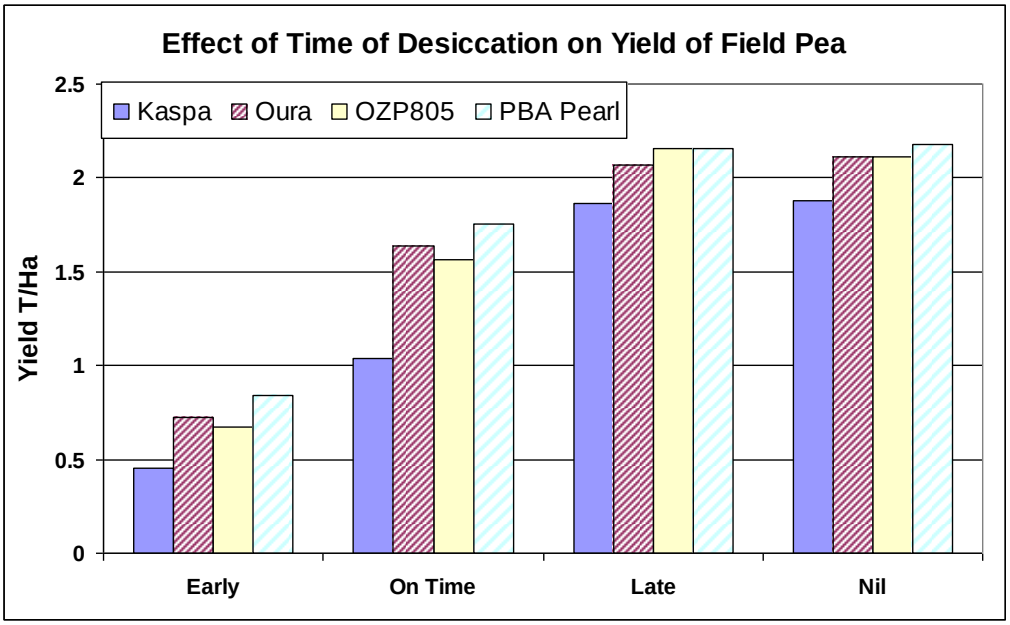
Results and Interpretation

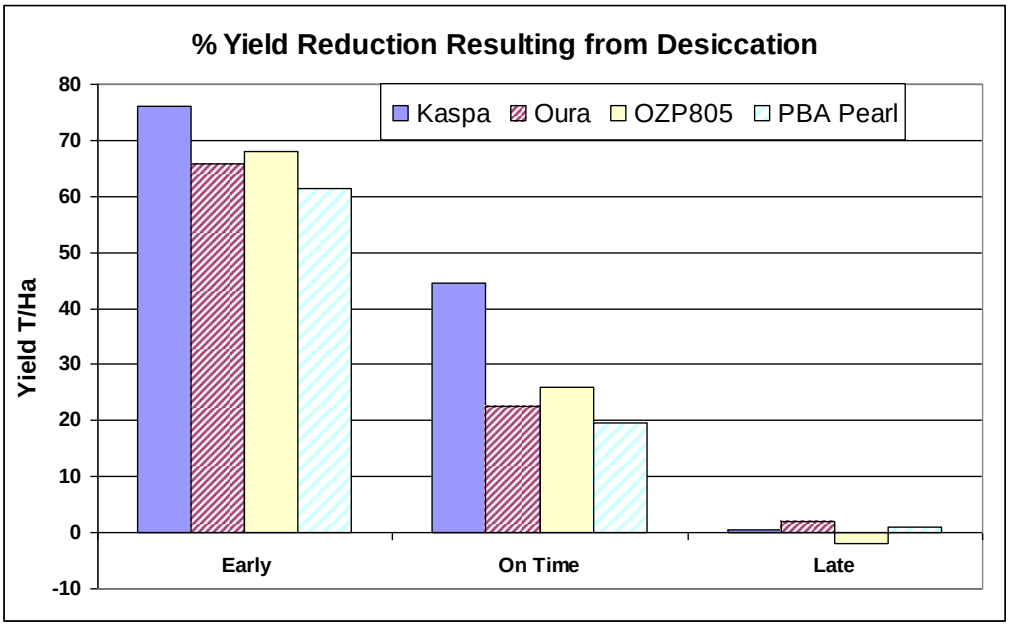
Selection of the timing for 'early' and 'on time' desiccant sprays was made particularly difficult in this experiment because the warm drying pattern forced maturity and resulted in large deviations from normal patterns of ripening. As it turned out, our estimates were considerably too early. Consequently, large yield reductions occurred at both "Early" (60-75% yield loss) and "On Time" (20-45% yield loss) desiccation sprays. As a guide, we used the end of flowering and yellowing of plant tissues as an estimate of physiological maturity. Clearly, we need to investigate these aspects more closely to fine-tune and match visible growth stages and pod development with estimates of physiological maturity, particularly under different seasonal finishing conditions.

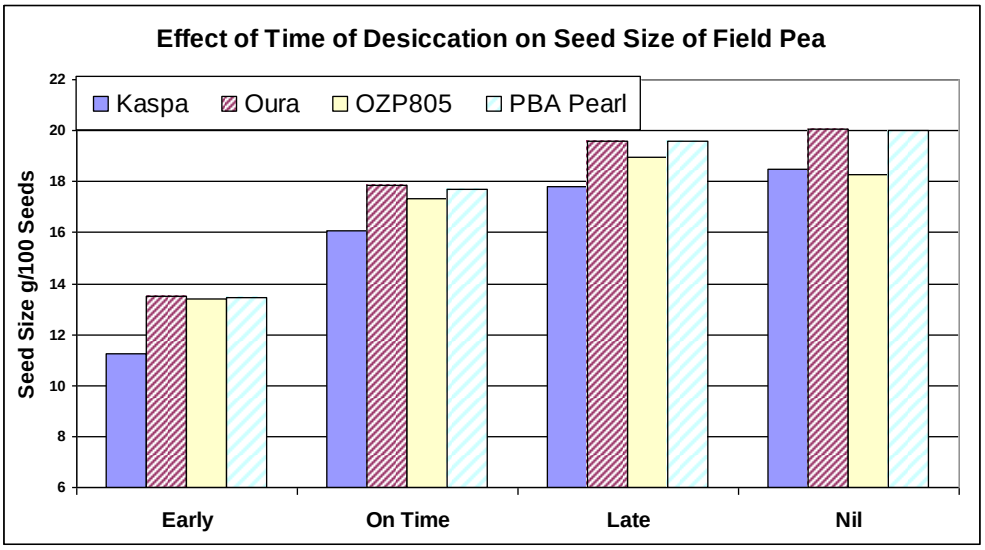
	Flowering Date	End Flowering	Flowering Days	Maturity
Kaspa	6 Oct	20 Oct	14	15 Nov
PBA Gunyah	30 Sept	18 Oct	18	10 Nov
PBA Oura	21 Sept	16 Oct	25	9 Nov
PBA Pearl	22 Sept	16 Oct	24	10 Nov

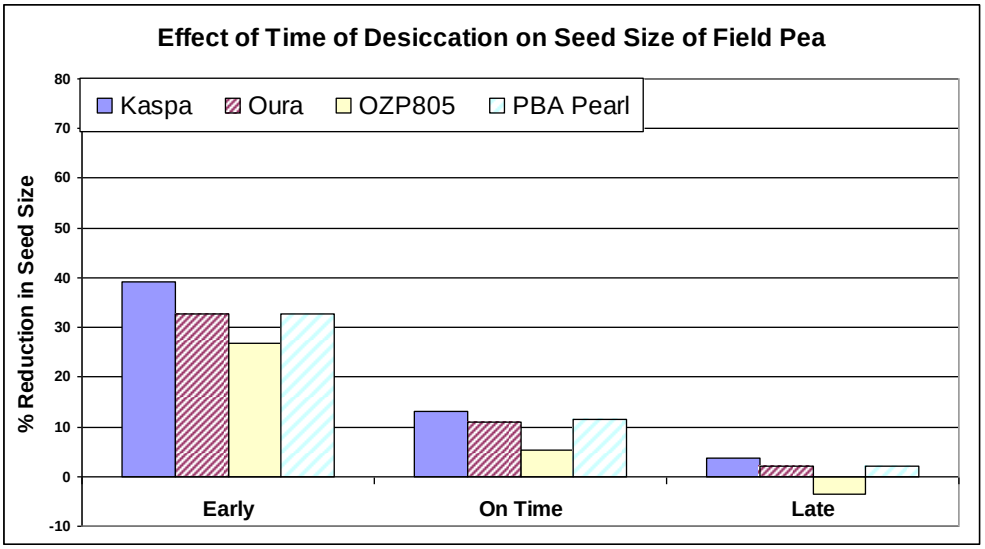
Key Findings and Comments

- Early and on time desiccation resulted in large yield losses.
- Early and on time desiccation resulted in large reductions in seed size, but not to the same degree as yield.
- What were the reasons (other than reduced seed size) that contributed to these yield losses? Was 'pinched' seed lost through the header at harvest?
- Yield losses were bigger in the later flowering variety Kaspa.
- Need to more closely fine-tune growth stages with physiological maturity to pick the "on time" desiccation spray.
- Oura and Pearl were early and the pick of varieties suited to crop-topping & desiccation.






Effect of Time of Desiccation on Seed Size of Field Pea
Kaspa
Oura
OZP805
PBA Pearl
Seed Size g/100 Seeds
22
20
18
16
14
12
10
8
6
Early
On Time
Late
Nil


Effect of Time of Desiccation on Seed Size of Field Pea
Kaspa
Oura
OZP805
PBA Pearl
% Reduction in Seed Size
80
70
60
50
40
30
20
10
0
-10
Early
On Time
Late