

Field pea varieties



Tony Leonforte, Michael Materne, Helen Richardson, Natalie Woodhead and Bruce Holding (*Pulse Breeding Australia, DPI Horsham*)

Take home messages

- *Kaspa, Parafield, Sturt and Bundi provide different options for growers in Victoria in 2009.*

Method

Yield experiments for field pea were established across Victoria by Pulse Breeding Australia and the National Variety Testing program. All experiments were managed following recommended local practices. Yield data was statistically analysed and is only presented for trials with acceptable experimental error.

Results

There are limited trials for variety comparisons in 2008 due to high experimental error associated with drought. Therefore, results will need to be interpreted with caution. Sturt again proved to be the most reliable and highest yielding variety in 2008 when drought and frost reduced field pea yields. Kaspa and Yarrum were disadvantaged by later flowering in 2008.

Pulse Breeding Australia has several new varieties planned for release in partnership with AWB Seeds Pty Ltd. This includes earlier flowering Kaspa types for lower rainfall regions from 2010 (OZ0601, OZP0602) and a bacterial blight resistant dun pea (OZP0703) from 2011. High yielding Kaspa types that combine boron tolerance, powdery mildew and virus resistance are in the pipeline for release from 2012.

Table 1. Data from S3 and NVT experiments in 2008.

Location Region	Beulah Mallee	Rainbow Mallee	Tarranyurk Wimmera	Kaniva Wimmera
Kaspa t/ha	1.09	0.60	0.54	0.47
Variety name	% Kaspa	% Kaspa	% Kaspa	% Kaspa
Bundi	104	123	163	151
Kaspa	100	100	100	100
Parafield	101	123	109	151
Sturt	120	153	143	260
Yarrum	86	80	102	91
OZP0601	101	103	109	100
OZP0602	105	108	102	98
OZP0703	118	117	128	179
CV (%)	9.87	13.04	9.3	10.11
LSD (t/ha)	17.4	25.0	18.5	21.3
Seasonal conditions	Low spring rainfall, stored soil moisture	Low spring rainfall	Low spring rainfall	Low spring rainfall, frost damage at mid-pod fill stage

Commercial practice

Field pea production across Victoria continues to be affected by ongoing years of drought. As a consequence, farmers are now opting to sow early and often into dry soil to optimise yield potential in shorter growing seasons. The benefits of these practices need to be weighed up against the increased risk of disease and frost in their region as well as the available soil moisture at the start of the season. In the Mallee, the optimal sowing window extends from mid-May to early June. In the Wimmera, sowing is optimal between early to mid-June. In south western regions, the sowing window can extend to early August if soils are to prone to water logging.

The field pea varieties, Kaspa and Parafield, continue to be the predominant varieties grown across cropping regions of southeast and west Australia. Both are broadly adapted, have high yield potential and are suitable for crop-topping to control ryegrass. Kaspa is preferred across most regions particularly for its ease of harvest and pod shatter resistance and accounts for over 70 percent of dry pea grain production. Parafield accounts for at least 25 percent of grain production and remains an alternative option to Kaspa in the lower rainfall regions and where bacterial blight is a higher risk (eg. Wimmera).

The incidence of fungal diseases has been relatively low in Victoria over the last decade. A new strain of downy mildew identified in SA is virulent on all currently available varieties, including Kaspa and Parafield. This strain has not yet been observed in Victoria but is a potential threat. Seed treatment with metal-axyl to control downy mildew is only recommended where disease is more severe in SA. Varieties with resistance to this new strain of downy mildew will start to become available for growers by 2011 (ie. OZP0703). Earlier flowering 'Kaspa type' varieties (OZP0601, OZP0602) are expected to be available for 2010 and will improve the reliability of 'Kaspa type' peas in the lower rainfall cropping zone.

Before growers change varieties, careful consideration should be given to consequences for disease and crop management and ability to market and deliver non-dun types. Two new white seeded peas, 'Sturt' and 'Bundi', are now widely available and can provide growers with advantages over both

Kaspa and Parafield. In particular, Sturt has higher tolerance to drought and frost but also performs well in good seasons. Bundi is an early flowering variety which can be grown more reliably in shorter season Mallee regions than Kaspa. Celine is an introduced white pea variety marketed for its good standing ability and high yield in some situations. It is very early-maturing and more prone to frost damage and pod shattering and has relatively poor disease resistance. White peas will require on-farm storage and segregation from dun types. The later flowering dwarf dun pea, Yarrum, provides an alternative option to Kaspa in higher rainfall regions of Victoria where powdery mildew is severe but it has relatively poor early vigour, competes poorly with weeds, is more susceptible to downy mildew and can lodge badly and pod shatter prior to harvest. The variety, Excell, is suitable for blue pea production and has good general adaptation to Victoria. However, the premium price market for blue peas is still very small and price premiums themselves may not offset lower yield potential compared to Kaspa or Parafield.