

# New pulse varieties for more profit

## Field pea variety performance in 2013

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### Key messages

- Field pea yields in trials and commercial paddocks were profitable in 2013. 8 trial sites had a site mean yield greater than 2.0 t/ha and of these 4 had a site mean yield greater than 2.5 t/ha. Pricing for field pea delivered to Perth averaged \$308/t from July to December 2013.
- Growers now have a suite of high yielding 'kaspa' type varieties to choose from depending upon their disease risk, growing season environment and target market.
- PBA Gunyah<sup>Ⓢ</sup> and PBA Twilight<sup>Ⓢ</sup> were high yielding in low rainfall environments. Both 'kaspa' type varieties show wide adaptation across most Agzones in Western Australia.
- PBA Wharton<sup>Ⓢ</sup>, a 'kaspa' type variety with PSbMV resistance, was statistically equal to other 'kaspa' type varieties at most sites. It is targeted for the Esperance port zone where PSbMV is prevalent.
- PBA Pearl<sup>Ⓢ</sup>, a 'white' field pea variety, was equivalent or higher yielding than the 'kaspa' types at all sites.
- Unlike results from 2011, a similarly favourable growing season, Kasper<sup>Ⓢ</sup> was not the highest yielding variety. Its performance was competitive with PBA Gunyah<sup>Ⓢ</sup> and PBA Twilight<sup>Ⓢ</sup> at most sites.

### Background

The Department of Agriculture and Food in partnership with Pulse Breeding Australia (PBA) conduct Pulse Variety trials throughout WA, reporting the results back to the National PBA breeding programs and National Variety Trials (NVT).

This paper reports the results of 8 NVT trials which were statistically sound with low variability.

Only the currently named varieties are reported. Details of unnamed lines with potential for release will be available at the spring field days.

### Trial results

Field pea yields were well above average levels in all Agzones in 2013. Trial yields are summarised below.

- PBA Gunyah<sup>Ⓢ</sup> and PBA Twilight<sup>Ⓢ</sup> were generally higher yielding than Kasper<sup>Ⓢ</sup>.
- PBA Wharton<sup>Ⓢ</sup> was equivalent or higher yielding to PBA Gunyah<sup>Ⓢ</sup> and/or PBA Twilight<sup>Ⓢ</sup> at Mingenew, Katanning, Grass Patch, Holt Rock and Wittenoom Hills.
- PBA Pearl<sup>Ⓢ</sup> was equivalent or higher yielding than the 'kaspa' types at all sites.  
NB: White field peas require specialist marketing to maximise profitability. White field peas cannot be delivered into the current bulk handling system.

The following tables describe field pea variety yields in tonnes/hectare (t/ha) and as a % of the site mean yield.

Region	Agzone 1		Agzone 1	
Nearest Town	Mingenew		Three Springs	
Variety Name	t/ha	%	t/ha	%
PBA Gunyah <sup>Ⓛ</sup>	2.46	98	2.71	105
PBA Twilight <sup>Ⓛ</sup>	2.56	102	2.87	111
PBA Wharton <sup>Ⓛ</sup>	2.44	97	2.19	85
Kaspa <sup>Ⓛ</sup>	2.61	104	2.43	94
PBA Pearl <sup>Ⓛ</sup>	2.40	95	2.62	101
Bundi <sup>Ⓛ</sup>	1.89	75	2.45	95
Moonlight <sup>Ⓛ</sup>	-	-	-	-
PBA Oura <sup>Ⓛ</sup>	2.17	86	2.56	99
PBA Percy <sup>Ⓛ</sup>	1.98	78	2.59	100
Site Mean (t/ha)	2.52		2.59	
CV (%)	9.69		7.04	
Probability	<0.001		<0.001	
LSD (t/ha)	0.41	16	0.31	12
Harvest Date	24-Nov-2013		24-Nov-2013	
Sowing Date	17-May-2013		16-May-2013	
GS Rainfall, 2013, average (mm)	303.7	346.4	262.6	312.9

Region	Agzone 3		Agzone 3		Agzone 4	
Nearest Town	Katanning		York		Merredin	
Variety Name	t/ha	%	t/ha	%	t/ha	%
PBA Gunyah <sup>Ⓛ</sup>	3.37	116	2.87	105	2.28	115
PBA Twilight <sup>Ⓛ</sup>	3.09	107	2.30	111	2.48	125
PBA Wharton <sup>Ⓛ</sup>	3.19	110	2.83	85	1.97	99
Kaspa <sup>Ⓛ</sup>	2.32	80	2.69	94	1.76	89
PBA Pearl <sup>Ⓛ</sup>	3.21	111	2.77	101	1.90	96
Bundi <sup>Ⓛ</sup>	2.78	96	2.67	95	2.03	102
Moonlight <sup>Ⓛ</sup>	-	-	2.22	-	-	-
PBA Oura <sup>Ⓛ</sup>	2.71	93	2.09	99	1.99	100
PBA Percy <sup>Ⓛ</sup>	2.55	88	2.19	100	2.07	104
Site Mean (t/ha)	2.90		2.65		1.98	
CV (%)	7.99		11.51		8.79	
Probability	<0.001		<0.001		<0.001	
LSD (t/ha)	0.40	14	0.50	19	0.29	15
Harvest Date	06-Dec-2013		29-Nov-2013		24-Nov-2013	
Sowing Date	26-Jun-2013		06-Jun-2013		18-May-2013	
GS Rainfall, 2013, average (mm)	351	348.1	337.5	316	185.4	246.4

Region	Agzone 5		Agzone 5		Agzone 5	
Nearest Town	Grass Patch		Holt Rock		Wittenoom Hills	
Variety Name	t/ha	%	t/ha	%	t/ha	%
PBA Gunyah <sup>Ⓛ</sup>	1.94	97	2.53	107	1.90	85
PBA Twilight <sup>Ⓛ</sup>	2.03	102	2.16	91	1.99	89
PBA Wharton <sup>Ⓛ</sup>	2.08	105	2.61	110	2.17	98
Kaspa <sup>Ⓛ</sup>	1.94	97	2.06	87	2.17	97
PBA Pearl <sup>Ⓛ</sup>	2.26	114	2.39	101	2.71	122
Bundi <sup>Ⓛ</sup>	1.51	76	1.75	74	1.53	69
Moonlight <sup>Ⓛ</sup>	2.29	115	-	-	1.69	76
PBA Oura <sup>Ⓛ</sup>	2.01	101	2.73	115	2.76	124
PBA Percy <sup>Ⓛ</sup>	2.05	103	2.37	100	2.74	123
Site Mean (t/ha)	1.99		2.37		2.23	
CV (%)	6.56		9.11		7.68	
Probability	<0.001		<0.001		<0.001	
LSD (t/ha)	0.23	12	0.37	16	0.34	15
Harvest Date	24-Nov-2013		28-Nov-2013		24-Nov-2013	
Sowing Date	23-May-2013		28-May-2013		18-May-2013	
GS Rainfall, 2013, average (mm)	205.7	212.6	211.8	233.8	293.6	270.6

Source: NVT 2014 & BoM

## Variety descriptions

### PBA Gunyah<sup>Ⓓ</sup>

- Higher yielding in low to medium rainfall zones
- Early to mid flowering and early maturing
- Similar plant type to Kaspas - semi-leafless
- Disease resistance is similar to Kaspas<sup>Ⓓ</sup>
- Grain marketable as 'Kaspas type'

### PBA Twilight

- Higher yielding in short season, low rainfall zone
- Early flowering and early maturing
- Similar plant type to Kaspas<sup>Ⓓ</sup>
- Disease resistance is similar to Kaspas<sup>Ⓓ</sup>
- Grain marketable as 'Kaspas type'

### PBA Wharton<sup>Ⓓ</sup>

- Similar seed and plant features to Kaspas<sup>Ⓓ</sup>
- Wider disease resistance;
  - Pea Seed-borne Mosaic Virus
  - Bean Leaf-roll Virus
  - Powdery Mildew
- High yield and broad adaptation
- Semi-leafless, semi-dwarf plant type
- Improved tolerance to soil boron toxicity
- Early flowering and maturing
- Superior grain quality and marketable as 'Kaspas type'

**Note** Kaspas Disease Resistance - MS for Blackspot, MR for Downy Mildew, Parafield strain, S for Kaspas strain, S for Bacterial Blight, Downy Mildew and PSbMV.

## Conclusion

Commercial Field pea yields in Western Australia were well above the 5 year average in 2013 in most regions. On-farm production was lower than in previous seasons with a lower than average sown area, particularly in the Esperance Port Zone. Additionally Blackspot infection caused some yield loss especially where combined with ill-thrift due to consistent water logging.

White field peas require specialist marketing for export trade and their on-farm adoption will require growers and industry to undertake a detailed marketing plan and consultation process to be successful.

The relative variety performance of field pea varieties met the expectations of industry based on long term data, and demonstrated yield improvement and adaptation to Western Australia.

Seed availability Contact:

**Seednet:** PBA Gunyah<sup>Ⓓ</sup>, PBA Twilight<sup>Ⓓ</sup> PBA Wharton<sup>Ⓓ</sup> E: [admin@seednet.com.au](mailto:admin@seednet.com.au)  
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## Key words

Field pea, variety, yield

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