PBA Oura^{Φ}
Erect 'dun type' field pea

PBA
PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Resistant to bacterial blight

KEY FEATURES

- Low risk option for bacterial blight
- High yield potential and broad adaptation
- Early to mid flowering and maturing
- Erect growing, semi-leafless plant type
- Early maturity allows crop topping
- Grain marketable as 'Australian dun type'

MAIN ADVANTAGES

PBA Oura^{Φ} (tested as OZP0703) and PBA Percy^{Φ} (tested as OZP0901) are being released concurrently to provide growers with superior field pea options in bacterial blight prone regions.

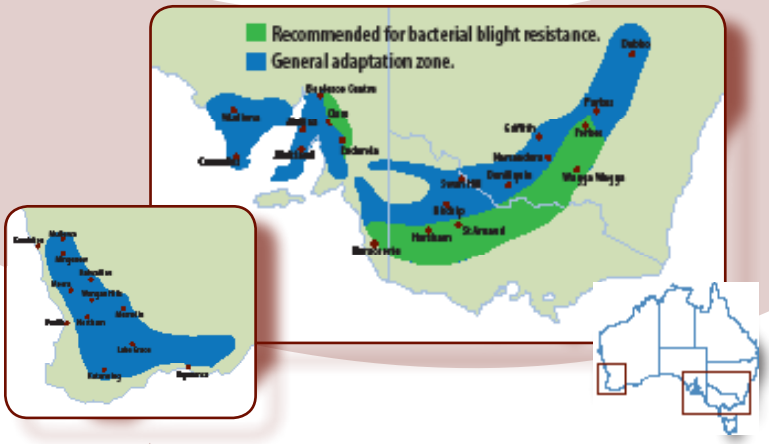
Both varieties have high yield potential, are broadly adapted and perform relatively well in short growing seasons and low rainfall climates.

PBA Oura^{Φ} and PBA Percy^{Φ} have good levels of resistance to bacterial blight, showing minimal yield loss in trials subjected to high levels of bacterial blight pressure.

These varieties provide growers with the option of growing either an erect semi-dwarf type (PBA Oura^{Φ}) or a conventional type (PBA Percy^{Φ}) to suit on farm practices.

Both varieties are early flowering and maturing and better suited for crop topping than Kaspa^{Φ}. Both produce Australian dun type grain suitable for human consumption export or stockfeed markets.

AREA OF ADAPTATION



PBA Oura^{Φ} is broadly adapted across all the major field pea production regions and will provide a significant advantage to growers in regions prone to bacterial blight.

SEED PROTECTION & ROYALTIES

PBA Oura^{Φ} is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from their production of PBA Oura^{Φ} for their own seed use.

An End Point Royalty (EPR) of $2.86 per tonne (GST inclusive), which includes breeder royalties, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.

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YIELD & ADAPTATION

PBA Oura(Φ) is broadly adapted (e.g. similar to PBA Gunyah(Φ)), is relatively earlier flowering and more reliable in shorter and lower rainfall growing seasons (e.g. compared to Kaspa(Φ) and Parafield).
The main yield advantage of PBA Oura(Φ) will be within regions prone to bacterial blight.
Notably PBA Oura(Φ) will be the first low risk semi-dwarf field pea variety option for these regions.

Long term mean yields 2006 to 2010 expressed as a % of Kaspa(Φ) yield

Representative growing season	Drought	Short Season		Medium Season		Long Season	
No. of experiments	18	35	26	23	22	17	19
Trial group*	<0.5 t/ha	0.5-1.0 t/ha	1.0-1.5 t/ha	1.5-2.0 t/ha	2.0-2.5 t/ha	2.5-3.0 t/ha	>3.0 t/ha
Mean Kaspa(Φ) yield (t/ha)	0.33	0.71	1.22	1.81	2.26	2.72	3.50
Short season variety options							
Parafield	147	104	98	96	92	90	88
PBA Twilight(Φ)	151	127	114	105	105	94	96
Sturt(Φ)	187	128 (28)	107 (19)	107 (19)	104 (18)	98 (14)	95 (11)
Short to mid season variety options							
PBA Oura(Φ)	197	127	115	111	107	100	98
PBA Percy(Φ)	NT	127 (10)	122 (2)	103 (9)	107 (9)	101 (11)	99 (12)
PBA Gunyah(Φ)	145	125	112	109	106	97	98
Mid to long season variety options							
Yarrum(Φ)	97	116	114 (22)	109 (22)	112 (19)	103 (16)	102 (18)
Kaspa(Φ)	100	100	100	100	100	100	100

Varieties have optimal adaptation
Varieties have general adaptation
Varieties have sub-optimal adaptation

NT: Insufficient comparisons
( ) Indicates number of experiments if different
** Based on relative yield of cv Kaspa(Φ).*

SOURCE: Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs.

High bacterial blight disease pressure trials at Wagga Wagga, NSW 2006 to 2009

Yield Loss	Mean (%)	Range (%)	Disease rating
Low risk variety options			
PBA Percy(Φ)	7	<10%	R
PBA Oura(Φ)	12	10-20%	MR
Parafield	15	10-20%	MR
Moderate to High risk variety options			
Yarrum(Φ)	20	20-30%	MS
Morgan(Φ)	21	20-30%	MS
Sturt(Φ)	27	20-30%	MS
High risk variety options			
PBA Gunyah(Φ)	31	>30%	S
PBA Twilight(Φ)	38	>30%	S
SW Celine(Φ)	37	>30%	S
Excell	39	>30%	S
Kaspa(Φ)	41	>30%	S

Yield loss was calculated from differences between un-inoculated and inoculated bacterial blight plot treatments

SOURCE: Pulse Breeding Australia, Wagga Wagga Agricultural Institute, NSW-DPI.

Bacterial blight on pea stipules.
Note the fan like pattern of the blight.

Bacterial blight variety resistance

PBA Oura(Φ) **Kaspa(Φ)**

SOURCE: Pulse Breeding Australia - Horsham;
Bacterial blight field screening nursery, 2006, DPI Victoria.

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AGRONOMY

Growers should follow the same sowing, harvest and weed management recommendations for other semi-dwarf varieties (i.e. Kaspa^{Ф}) in their region to achieve optimal yields. PBA Oura^{Ф} allows more flexibility to delay sowing and to crop top late in the season compared to later flowering semi-dwarf varieties such as Kaspa^{Ф}.

- Vigorous early and erect early plant growth.
- Medium plant height and semi-leafless.
- Early and long flowering duration.
- Fair to good lodging and pod shatter resistance at maturity.
- Early maturing: suitable for crop-topping in long seasons.

Variety	Plant habit	Plant vigour, early season	Flowering time	Maturity time	Plant lodging, at maturity	Pod shattering, at maturity
Kaspa type						
Kaspa^{Ф}	SD-SL	High	Late	Mid	Fair-Good	R *(SP)*
PBA Twilight^{Ф}	SD-SL	High	Early	Early	Fair-Good	R *(SP)*
PBA Gunyah^{Ф}	SD-SL	High	Early-Mid	Early	Fair-Good	R *(SP)*
Australian dun type						
PBA Oura^{Ф}	SD-SL	High	Early-Mid	Early	Fair-Good	MR *(NSP)*
PBA Percy^{Ф}	C	High	Early	Early	Poor	MR *(NSP)*
Morgan^{Ф}	Tall-SL	High	Late	Late	Poor-Fair	MR *(NSP)*
Parafield	C	High	Mid	Mid	Poor	MR *(NSP)*
Yarrum^{Ф}	SD-SL	Fair	Late	Mid	Poor-Fair	MR *(NSP)*
Niche grain type						
SW Celine^{Ф}	SD-SL	High	Early	Early	Fair-Good	S *(NSP)*
Sturt^{Ф}	C	High	Early-Mid	Mid	Poor	MR *(NSP)*
Excell	SD-SL	High	Early-Mid	Late	Good	S *(NSP)*
Maki^{Ф}	SD-SL	Low	Early	Early	Poor-Fair	S *(NSP)*

Key: SD=semi-dwarf, C=conventional, SL=semi-leafless, S=susceptible, MS=moderately susceptible, MR=moderately resistant, R=resistant. SP=sugar pod type pod, NSP=non sugar pod type pod.

DISEASE MANAGEMENT

PBA Oura^{Ф} is a low risk option for bacterial blight prone regions. Compared to growing Parafield which was previously recommended for these regions, PBA Oura^{Ф} will suffer less late season powdery mildew as it matures earlier.
PBA Oura^{Ф} also shows improved resistance to the Kaspa strain of downy mildew present in South Australia.

- Sow within regionally recommended time periods.
- Follow recommended crop rotation practices.
- Avoid sowing disease infected seed.
- Use predictive models to manage blackspot
  e.g. blackspot manager www.agric.wa.gov.au/cropdisease
- Use regionally recommended seed and foliar fungicides to control downy mildew and blackspot.
- Follow regional pesticide recommendations for control of pea weevil and native budworm.

Variety	Blackspot (Ascochyta)	Bacterial blight (Field rating)	Downy mildew (Parafield strain)	Downy mildew (Kaspa strain)	Powdery mildew	PSbMV*
Kaspa type						
Kaspa^{Ф}	MS	S	MR	S	S	S
PBA Twilight^{Ф}	MS	S	R	S	S	S
PBA Gunyah^{Ф}	MS	S	R	S	S	S
Australian dun type						
PBA Oura^{Ф}	MS	MR	MR	MS	S	S
PBA Percy^{Ф}	MS	R	S	S	S	S
Morgan^{Ф}	MS	MS	MR	S	S	S
Parafield	MS	MR	S	S	S	S
Yarrum^{Ф}	MS	MS	S	S	R	R
Niche grain type						
SW Celine^{Ф}	MS	S	S	S	S	S
Sturt^{Ф}	MS	MS	MS	S	S	S
Excell	MS	S	MR	S	S	S
Maki^{Ф}	S	S	S	S	R	R

*Key: S=susceptible, MS=moderately susceptible, MR=moderately resistant, R=resistance. * PSbMV=Pea seed borne mosaic virus.*

REFER TO DETAILED INFORMATION AT www.pulseaus.com.au
Ute guides, crop and disease management bulletins

PULSE VMP Pulse Variety Management Package

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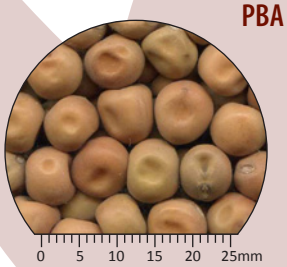
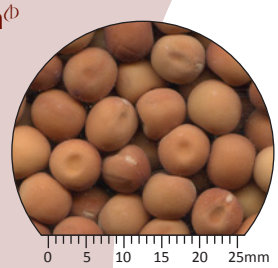
GRAIN QUALITY
PBA Oura(Þ) produces grain with a yellow split.
The whole grain is medium in size (e.g. similar to Kaspa(Þ)), has a light green uniform colour and is dimpled.
PBA Oura(Þ) grain is marketable as "Australian dun type" which is exported to the Asian sub-continent for production of dhal and pea flour and also sold for stockfeed.

PBA Oura(Þ)



PBA Percy(Þ)



Kaspa(Þ)

MARKETING
PBA Oura(Þ) produces grain that is marketable as 'Australian dun type' for human consumption or stockfeed, similar to Parafield and Yarrum(Þ).
Australian dun type grain is exported for human consumption to the Indian sub-continent as a source of yellow dhal and to Asian markets for sprouting.
Growers should avoid contamination between different grain types (e.g. "Australian dun type" and "Kaspa type") as they are marketed differently for human consumption.
Specific whole grain attributes of different varieties may also improve grain marketability or attract price premiums from different human consumption markets such as a large grain size (e.g. Parafield and PBA Percy(Þ)) and a uniform and unblemished green coat colour (e.g. PBA Oura(Þ)).
Grain from conventional field pea varieties (e.g. Parafield, PBA Percy(Þ)) is preferred for the Asian sprouting market over semi-leafless varieties (e.g. Kaspa(Þ), PBA Oura(Þ)), as these produce more tender vegetable shoots.

BREEDING
PBA Oura(Þ) was bred at DPI Victoria - Horsham from a complex crossing program ending in 1996 and following a recurrent selection program for high yield potential, improved plant type and adaptation in low rainfall cropping regions.
PBA Oura(Þ) was identified with superior field resistance to bacterial blight in disease screening nurseries at Wagga Wagga and Horsham and fast tracked to commercial release by the PBA program.
The variety is named after Oura beach on the Murrumbidgee River near Wagga Wagga, NSW.

PULSE AGRONOMY
Agronomy and disease management information has been developed with the assistance of the 'Southern region pulse agronomy project' co-funded by GRDC, SARDI, DPI Victoria and NSW-DPI.

Version September/2011

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PBA is an unincorporated joint venture between the GRDC, University of Adelaide, SARDI, DPI Victoria, NSW-DPI, DEEDI, DAFWA and Pulse Australia.
It aims to deliver better pulse varieties faster.

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Seednet's mission is:

"To deliver high performance seed based genetics to Australian grain growers and end user customers via superior product and service delivery channels".

Seednet is proud to partner with Pulse Breeding Australia and invest in the improvement of Australian field pea varieties.

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Field pea Blackspot Sowing Guides;
www.agric.wa.gov.au/cropdisease