

PBA Twilight[®]

'Kaspa type' field pea



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

'Kaspa type' for low rainfall zones



KEY FEATURES

- Higher yielding in short season, low rainfall zone
- Early flowering and early maturing
- Similar plant type to Kaspa[®]
- Disease resistance is similar to Kaspa[®]
- Suitable for crop topping
- Grain marketable as 'Kaspa type'

MAIN ADVANTAGES

PBA Twilight[®] (tested as OZP0601) is an early flowering field pea with high yield potential. It is better adapted to low and medium rainfall climates than Kaspa[®]. PBA Twilight[®] has a relative yield advantage over PBA Gunyah[®] (tested as OZP0602) in shorter season climates but PBA Gunyah[®] is considered to be more broadly adapted.

Growers in low rainfall regions have the option of growing both PBA Gunyah[®] and PBA Twilight[®] to manage the risk of low seasonal rainfall or paddock variability and still market grain from either variety as 'Kaspa type'. Both varieties are better suited than Kaspa[®] to the practices of delayed sowing for disease management and crop topping to control annual ryegrass.

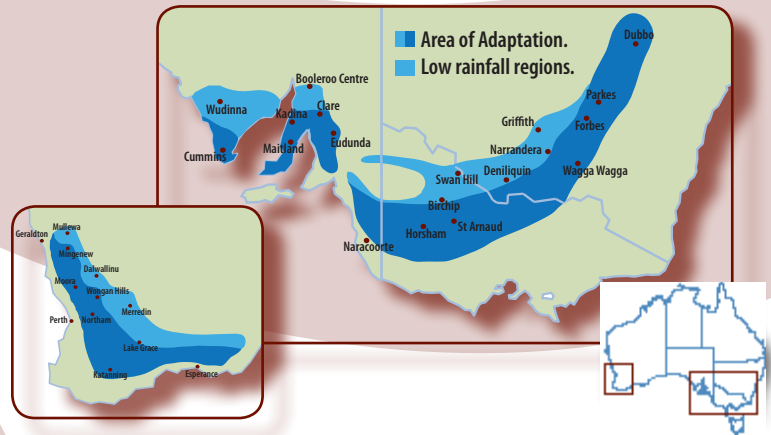
SEED PROTECTION & ROYALTIES

PBA Twilight[®] is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from their production of PBA Twilight[®] for their own seed use.

An End Point Royalty (EPR) of \$2.75 per tonne (GST inclusive), which includes breeder royalties, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.

AREA OF ADAPTATION



WA: Adapted to lower rainfall, short season climates of the northern, central and southern cropping zones. PBA Gunyah[®] may be a superior option in southern regions with a longer growing season.

SA: Adapted to lower rainfall, short season climates of the Upper Eyre Peninsula, SA Mallee and upper Mid North regions. PBA Gunyah[®] is a superior option in more favourable rainfall regions.

VIC: Adapted to lower rainfall, short season climates of the Victorian Mallee. PBA Gunyah[®] is a better option within the more favourable regions of the southern Mallee and Wimmera.

NSW: Adapted to lower rainfall, short season climates of southern and central west regions. PBA Gunyah[®] is considered a superior option in the more favourable lower rainfall areas.

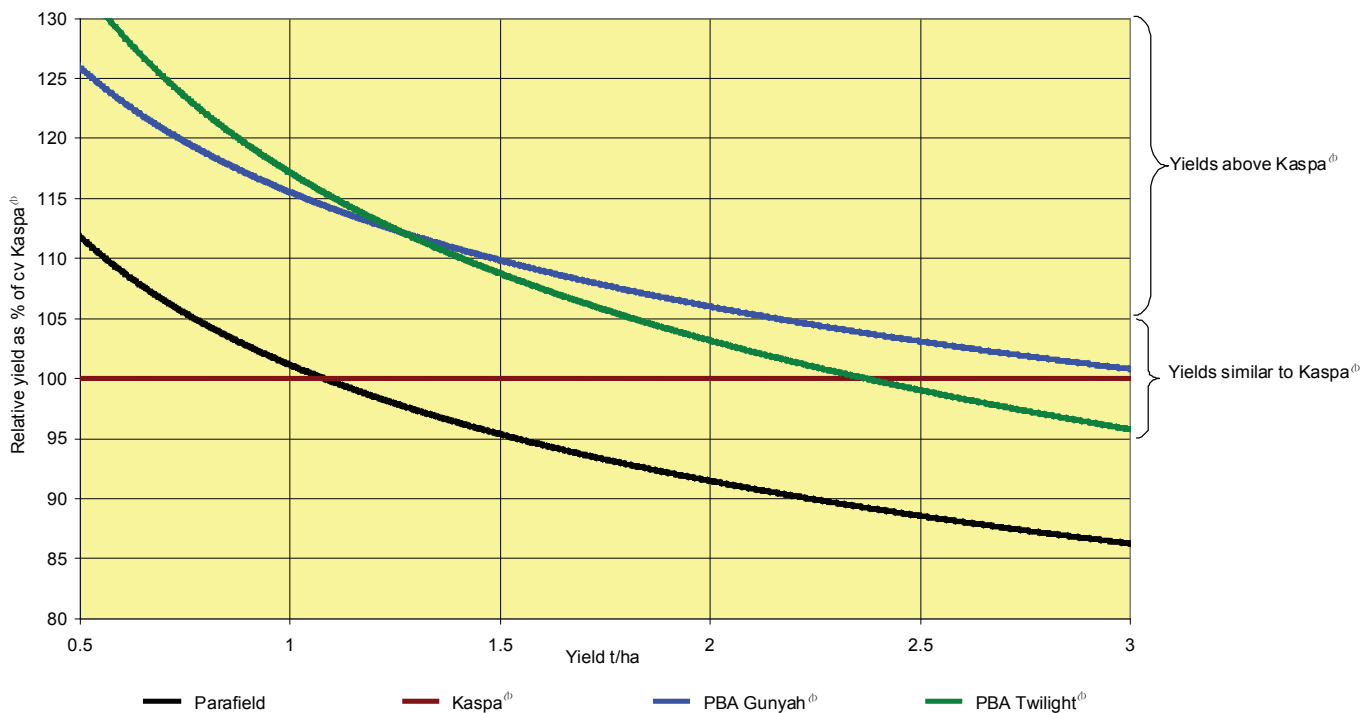
YIELD & ADAPTATION

- Broader adaptation across lower rainfall regions than Kaspa[®].
- Adaptation to short season climates that are characterised by a rapid finish to the growing season.
- Reliably higher yielding than Kaspa[®] when yield potential is below 1.75 t/ha.
- Relatively higher yielding than PBA Gunyah[®] when yield potential is less than 1.25 t/ha or in response to terminal drought.
- Lower risk option when sowing is delayed for disease management or following a late season break compared to Kaspa[®].



The relative grain yields of cultivars PBA Twilight[®], PBA Gunyah[®], Parafield and Kaspa[®] are represented in Figure 1. Comparative yields are based on extensive evaluation across southern Australia between 2005 and 2009. The relative yield advantages of PBA Twilight[®] and PBA Gunyah[®] have been highly consistent across cropping regions, particularly in shorter growing seasons. Growers can use prior knowledge relating to performance of Kaspa[®] or Parafield (e.g. on farm or regional NVT location grain yield performance) to estimate the yield advantage of growing PBA Twilight[®] on farm. Growers should consider variety choice together with agronomic options to minimise risk from seasonal drought, frost and disease as well as marketability of grain type.

Figure 1: Graph of average relative grain yields of PBA Twilight[®] compared to Parafield, Kaspa[®] and PBA Gunyah[®] in southern Australia.



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

AGRONOMY

- Follow the same sowing rate and harvest recommendations as for Kaspa[®] for your region.
- PBA Twilight[®] commences flowering at least 2 weeks earlier than Kaspa[®] in most cropping regions and is better adapted to shorter growing season climates or when delayed sowing is used to manage disease risk.
- PBA Twilight[®] has a shorter flowering duration than PBA Gunyah[®] but typically a longer flowering duration than Kaspa[®] in shorter growing seasons.
- Sensitivity to recommended rates of registered herbicides has been similar to Kaspa[®] in 2 years of testing on calcareous-alkaline soils
- Follow regional pesticide recommendations for control of pea weevil and budworm.
- PBA Twilight[®] matures earlier than Kaspa[®] and is better suited to the practice of crop-topping to manage weeds.

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

Disease management is needed to maximise yield potential. PBA Twilight[®] has a similar disease response profile to Kaspa[®]. However it is generally less prone to powdery mildew disease late in the season, due to its relatively earlier flowering and maturity. Compared to Kaspa[®], PBA Twilight[®] has shown a better yield response when foliar fungicide is applied or sowing is delayed. The response is however less than that for PBA Gunyah[®], and is associated with the earlier and longer flowering regime of PBA Twilight[®].

- Sow within regionally recommended time periods.
- Follow recommended crop rotation practices.
- Use predictive models to manage blackspot (e.g. blackspot manager).
- Avoid sowing disease infected seed.
- Use regionally recommended seed and foliar fungicides to control downy mildew and blackspot.

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

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

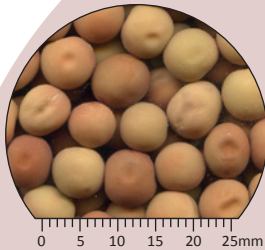
REFER TO DETAILED INFORMATION AT www.pulseaus.com.au
 Ute guides, crop and disease management bulletins

PBA Twilight[®]

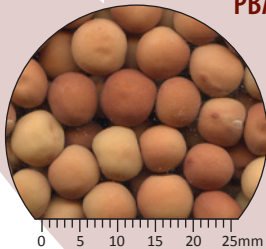
'Kaspa type' field pea

GRAIN QUALITY

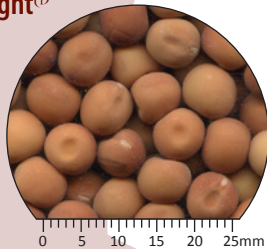
PBA Twilight[®] produces spherical grain with a yellow split and a tan seed coat colour similar to Kaspa[®]. It has high seed size uniformity and excellent processing efficiency for the yellow split pea market (i.e. similar to Kaspa[®]) and is also suitable for stock feed industries. PBA Twilight[®] generally produces grain of higher quality in terms of size and uniformity in lower rainfall regions or short growing seasons compared to Kaspa[®].



PBA Twilight[®]



PBA Gunyah[®]



Kaspa[®]

MARKETING

PBA Twilight[®], PBA Gunyah[®] and Kaspa[®] all produce grain, marketable as 'Kaspa type'. This grain type is preferred by major importing markets in the Indian sub-continent, particularly for snack foods. Contamination with other field pea types such as dimpled or white grain varieties will reduce the value for human consumption markets.

BREEDING

PBA Twilight[®] (tested as OZP0601) was identified by the PBA field pea team and is derived from a line bred at Horsham DPI Victoria, from a targeted crossing selection program to improve yield reliability in low rainfall cropping regions. The final cross made in 2001 included Kaspa[®] and a high yielding, erect growing, very early flowering line PS1537. PBA Twilight[®] is named after Twilight Beach on the south coast of Western Australia near Esperance.

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 as well as the South Australian Grains Industry Trust (SAGIT) funded project 'Exploring opportunities for improving pea management practices'.

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Better pulse varieties faster

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