PBA Taylor(Ð)
'Kaspa-type' field pea

September 2021

Virus resistant kaspa-type

KEY FEATURES

- Consistently highest yielding field pea variety across many environments.
- Mid flowering and early to mid maturity.
- Similar erect and semi-leafless plant type to Kaspa(Ð).
- Resistant to pea seed-borne mosaic virus and bean leaf roll virus.
- Grain marketable as 'Kaspa-type'.

MAIN ADVANTAGES

PBA Taylor(Ð) (tested as OZP1408) is a mid flowering and early to mid maturing field pea, slightly later than PBA Wharton(Ð) but earlier than Kaspa(Ð). It is the highest yielding field pea variety across most cropping regions as of 2021 and outclasses the existing dual virus resistant variety PBA Wharton(Ð) except in regions with high boron and salinity constraints.

PBA Taylor(Ð) has the same plant type as Kaspa(Ð) – semi-leafless and semi-dwarf plant architecture with non-shattering pods and Kaspa-type seed. PBA Taylor(Ð) has resistance to two virus diseases: pea seed borne mosaic virus (PSbMV) and bean leaf roll virus (BLRV).

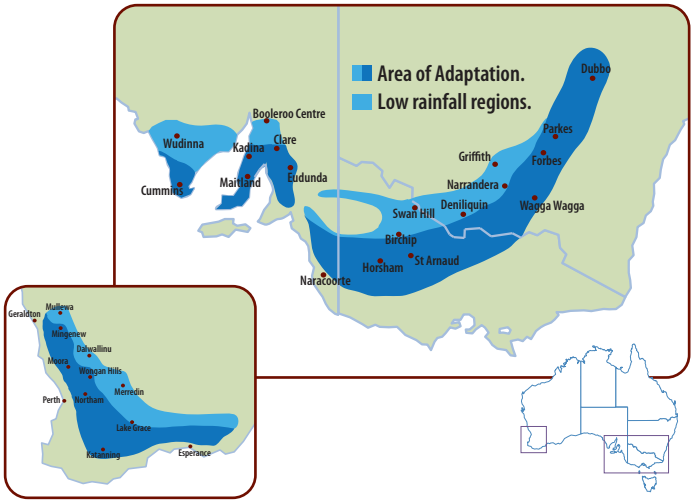
SEED PROTECTION & ROYALTIES

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

An End Point Royalty (EPR) of $2.97 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

PBA Taylor(Ð) has a wide range of adaptation. It is well-adapted to all the cropping regions in southern Australia.



Seednet
Planting Productivity

PBA Taylor(Φ)
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YIELD & ADAPTATION

- A broad adaptation across all the cropping regions with consistently high grain yield.
- 5% to 10% higher yielding than the dual virus resistant variety PBA Wharton(Φ) on all soils except those high in boron and salt.
- The best variety to grow in the environments prone to virus diseases (PSbMV and BLRV).

Table 1 presents the yield of PBA Taylor(Φ) in comparison to other field pea varieties across the cropping belt in southern Australia. The yields are based on extensive field trials grown as National Variety Trials (NVT) and Pulse Breeding Australia (PBA) trials from 2017 to 2020. The yield advantage of PBA Taylor(Φ) has been highly consistent across cropping regions.

Table 1. Seed yield (t/ha) of PBA Taylor(Φ) and other field pea varieties in the cropping belt of southern Australia.

Variety	Type	NSW		South Australia					Victoria		Western Australia				
		S/E	S/W	Lower EP	Mid North	South East	Upper EP	Yorke P	Mallee	Wimmera	Ag-zone 1	Ag-zone 2	Ag-zone 3	Ag-zone 4	Ag-zone 5
PBA Taylor(Φ)	**Kaspa**	**1.94**	**1.93**	**2.41**	**2.27**	**3.26**	**2.11**	**1.51**	**2.14**	**3.19**	**0.90**	**1.55**	**2.25**	**1.27**	**1.31**
Kaspa(Φ)	Kaspa	1.53	1.62	2.25	1.67	2.75	2.06	1.43	1.99	2.84	0.93	1.39	2.08	1.14	1.40
PBA Butler(Φ)	Kaspa	1.75	1.77	2.17	1.55	2.45	1.84	1.55	2.27	2.52	0.92	1.54	2.25	1.32	1.39
PBA Gunyah(Φ)	Kaspa	1.69	1.82	2.15	1.45	1.94	1.77	1.41	1.91	2.64	0.94	1.43	2.02	1.15	1.41
PBA Twilight(Φ)	Kaspa	1.67	1.81	–	1.34	–	1.58	1.44	1.81	2.66	0.94	1.41	1.99	1.13	1.40
PBA Wharton(Φ)	Kaspa	1.69	1.71	2.29	1.84	2.91	1.99	1.38	1.89	2.98	0.90	1.41	2.08	1.06	1.46
PBA Oura(Φ)	Dun	1.63	1.67	2.27	1.79	2.84	2.00	1.38	1.88	2.95	0.91	1.41	2.04	1.07	1.44
PBA Percy(Φ)	Dun	1.60	1.66	2.22	1.77	2.69	1.94	1.34	1.82	2.81	0.90	1.29	2.04	0.93	1.41
PBA Pearl(Φ)	White	1.72	1.72	2.37	1.84	3.13	2.10	1.47	2.00	3.18	0.93	1.60	2.10	1.32	1.50
Sturt	White	1.52	1.46	–	1.26	–	1.03	1.39	2.08	2.78	–	–	–	–	1.48
no. of trials		7	9	4	13	2	7	4	16	9	1	2	2	2	12

Means from reliable trials yielding on average higher than 0.5 t/ha.
Source: National Variety Trials (NVT) and Pulse Breeding Australia (PBA) trials from 2017 to 2020.

Yield response of varieties within each region.

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AGRONOMY

PBA Taylor(Þ) growers should follow the same agronomic practices as for Kaspa(Þ). See Table 2 for a comparison of agronomic features of current field pea varieties.

Table 2. Agronomic features of field pea varieties.

Variety	Plant habit	Plant vigour early season	Erect growth habit	Flowering time	Maturity time	Pod shattering at maturity	Soil tolerance		Seed weight (g/100)
							Boron	Salinity	
Kaspa type									
PBA Taylor(Þ)	**SD-SL**	**High**	**Fair–Good**	**Mid**	**Early–Mid**	**R *(SP)***	**S**	**S**	**19**
PBA Butler(Þ)	SD-SL	Very High	Good	Mid–Late	Early–Mid	R (SP)	S	S	18
PBA Wharton(Þ)	SD-SL	High	Fair–Good	Early–Mid	Early	R *(SP)*	T	MS	18
Kaspa(Þ)	SD-SL	High	Fair–Good	Late	Mid	R *(SP)*	S	S	20
PBA Gunyah(Þ)	SD-SL	High	Fair–Good	Early-Mid	Early	R *(SP)*	S	S	19
PBA Twilight(Þ)	SD-SL	High	Fair–Good	Early	Early	R *(SP)*	S	S	19
Australian dun type									
PBA Oura(Þ)	SD-SL	High	Fair–Good	Early-Mid	Early	MR *(NSP)*	S	S	20
PBA Percy(Þ)	C	Very High	Poor	Early	Early	MR *(NSP)*	S	MT	25
Niche grain type									
PBA Pearl(Þ)	SD-SL	High	Fair–Good	Early–Mid	Early	MR *(NSP)*	S	MS	20
Sturt(Þ)	C	Very High	Poor	Early-Mid	Mid	MR *(NSP)*	S	MS	–

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. It is important to note that seed weight varies with growing environment.

DISEASE MANAGEMENT

PBA Taylor(Þ) has resistance to two viruses – pea seed borne mosaic virus and bean leaf roll virus. PBA Taylor(Þ) is susceptible to fungal diseases (blackspot, downy mildew and powdery mildew) and bacterial blight. A proactive disease management is needed to maximise yield potential in higher risk environments.

Table 3. Disease ratings of field pea varieties.

Variety	Blackspot (Ascochyta)	Bacterial blight	Downy mildew (Kaspa strain)	Powdery mildew	PSbMV	BLRV (Field rating)
Kaspa type						
PBA Taylor(Þ)	**MS**	**S**	**S**	**S**	**R**	**R**
PBA Butler(Þ)	MS	MS	S	S	S	S
PBA Wharton(Þ)	MS	S	S	R	R	R
Kaspa(Þ)	MS	S	S	S	S	S
PBA Gunyah(Þ)	MS	S	S	S	S	S
PBA Twilight(Þ)	MS	S	S	S	S	S
Australian dun type						
PBA Oura(Þ)	MS	MS	S	S	S	MR
PBA Percy(Þ)	MS	MR/MS	S	S	S	S
Niche grain type						
PBA Pearl(Þ)	MS	MS	S	S	S	R
Sturt(Þ)	MS	MS	S	S	S	S

Key: S=Susceptible, M=moderately, R=Resistant, PSbMV=Pea seed borne mosaic virus, BLRV=Bean leaf roll virus.

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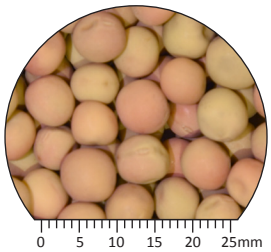
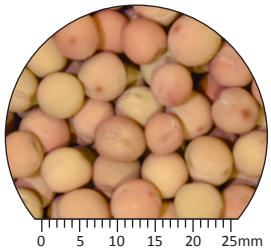
GRAIN QUALITY

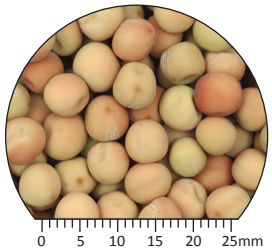
PBA Taylor(Þ) produces medium sized spherical grain. Seed coat has a uniform tan colour similar to Kaspa(Þ) and is suitable for dahl and split pea production. Seed coat colour may vary slightly depending on the season.



PBA Taylor(Þ)



PBA Wharton(Þ)



Kaspa(Þ)

MARKETING

The grain is suitable to market as 'Kaspa-type' grain, which is exported to the Asian sub-continent for production of dahl, flour and roasted snack foods.

The grain is also suitable for stockfeed.

BREEDING

PBA Taylor(Þ) (tested as OZP1408) was identified by PBA field pea team and is derived from two breeding lines. The crossing was made in 2006 at Department of Jobs, Precincts and Regions (DJPR), Horsham. Several cycles of selections were made to improve yield stability and disease resistance. PBA Taylor(Þ) is named after Taylors Beach in south west Victoria.

PULSE AGRONOMY

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

FIELD PEA BREEDING AUSTRALIA

Pulse Breeding Australia (PBA) was an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, Agriculture Victoria Research, NSW DPI, DAF (QLD), DPIRD WA and Pulse Australia.

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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 Field Pea Breeding Australia and invest in the improvement of Australian field pea varieties.

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