

PBA Slasher[®]

Desi Chickpea



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

High yielding, Ascochyta resistant chickpea



KEY FEATURES

- Desi chickpea variety that combines Ascochyta blight resistance, high yield and good seed quality.
- Resistant (R) to foliage Ascochyta blight.
- High yielding across all Southern and Western Australian chickpea growing regions.
- Mid flowering and mid maturity.
- Susceptible (S) to Botrytis grey mould (BGM), similar to Genesis™ varieties.
- Medium sized seed with a tan-brown seed coat, suitable for the whole and split seed markets.
- Excellent milling quality.

MAIN ADVANTAGES

PBA Slasher[®] is suited to all current chickpea growing regions of Southern New South Wales, Victoria, South Australia and Western Australia.

PBA Slasher[®] provides a high yielding desi chickpea alternative to the production of small kabuli chickpea types. Its very good foliage resistance to Ascochyta blight offers a low risk desi chickpea variety option that can be sown early providing adequate Botrytis grey mould management occurs.

PBA Slasher[®] is well suited to medium seeded desi chickpea markets, particularly for splitting.

SEED PROTECTION & ROYALTIES

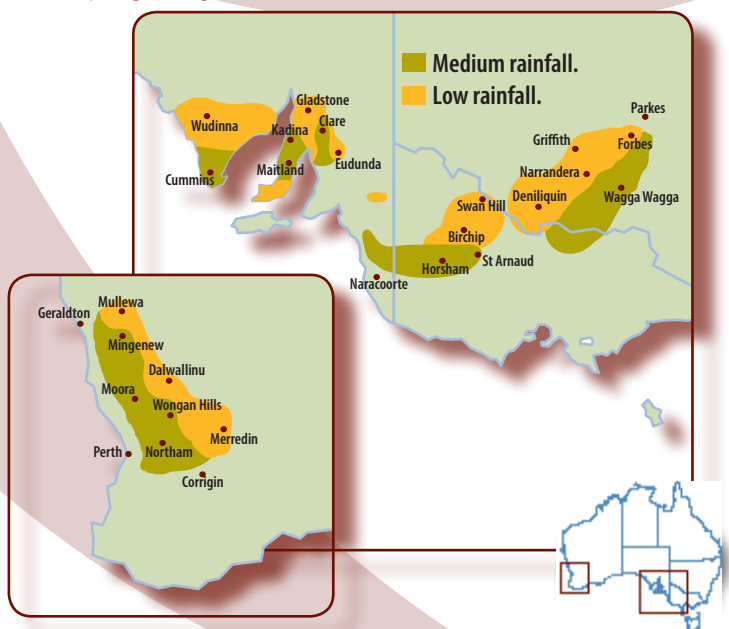
PBA Slasher[®] is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from production of PBA Slasher[®] for their own seed use.

An End Point Royalty of \$4.40 per tonne (GST inclusive), which includes breeder royalties, applies to this variety.

Seed is available from the commercial partner Seednet.

AREA OF ADAPTATION

PBA Slasher[®] is the most adapted desi chickpea variety for potential chickpea growing areas in Southern and Western Australia.



Seednet
Planting Productivity

YIELD & ADAPTATION

PBA Slasher^{db} has been the highest yielding variety in all regions of Southern and Western Australia in testing conducted between 2002-2010 (refer to tables).

It has excellent adaptation to all areas of Southern and Western Australia where chickpeas are currently grown.

Yields are substantially higher than GenesisTM 509 in all regions of South-eastern Australia and higher than GenesisTM 836 in Western Australia.

PBA Slasher^{db} is not adapted to Northern NSW or Southern QLD as it is susceptible to Phytophthora root rot.

Long-term yield of desi chickpea (% of PBA Slasher^{db}) in Victoria and Southern NSW (2002-2010)

Variety	Victoria		Southern NSW	
	Mallee	Wimmera	East	West
PBA Slasher ^{db} (t/ha)	1.33	1.08	1.35	1.87
PBA Slasher ^{db}	100	100	100	100
Genesis TM 509	88	89	89	89
Howzat ^{db}	90	86	90	92
PBA HatTrick ^{db}	88	89	91	90
Genesis TM 079*	97	96	-	-
Genesis TM 090*	89	91	90	90
PBA Boundary ^{db}	-	-	96	95

Long-term yield of desi chickpea (% of PBA Slasher^{db}) in South Australia (2002-2010)

Variety	Eyre Peninsula		Yorke	Mid North	South East
	Upper	Lower			
PBA Slasher ^{db} (t/ha)	1.70	0.55	1.85	1.95	2.52
PBA Slasher ^{db}	100	100	100	100	100
Genesis TM 509	87	86	88	89	89
Howzat ^{db}	94	86	89	89	91
PBA HatTrick ^{db}	88	83	87	86	89
Genesis TM 079*	99	95	100	98	99
Genesis TM 090*	90	83	89	88	91

Long-term yield of desi chickpea (% GenesisTM 836) in Western Australia (2002-2010)

Variety	Agzone 1	Agzone 2	Agzone 3
Genesis TM 836	1.15	0.97	0.89
PBA Slasher ^{db}	107	106	105
Genesis TM 510	101	101	100
Genesis TM 836	100	100	100
Sonali ^{db}	104	103	100
Genesis TM 090*	94	94	91

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

* GenesisTM 079 and GenesisTM 090 are small kabulis

DISEASE MANAGEMENT

Ascochyta blight (AB)

PBA Slasher^{db} is Resistance (R) to foliar infection caused by the fungus (*Ascochyta rabiei*), similar to Genesis[™] 509, Genesis[™] 510 and Genesis[™] 090. Ascochyta blight management for PBA Slasher^{db} is the same as for Genesis[™] 509, Genesis[™] 510 and Genesis[™] 090.

- In all regions, monitor crops and apply fungicides from the start of podding prior to rainfall events to prevent seed infection.
- In WA, an early fungicide application is recommended 6-8 weeks after sowing to delay the development of Ascochyta blight.

A recommended fungicide seed dressing is beneficial for early control of seedling root rots, Ascochyta blight and Botrytis grey mould.

Botrytis grey mould (BGM)

Controlled environment testing, confirmed by opportunistic field testing in 2010, suggests that PBA Slasher is Susceptible (S) to BGM.

This rating is similar to that for Genesis[™] 509, Genesis[™] 510 and Genesis[™] 836.

- Apply a preventative fungicide at canopy closure in BGM prone areas.
- Continue monitoring; additional sprays may be required if warm humid conditions prevail.

Agronomic traits, Ascochyta blight resistance rating and yield loss of desi chickpea in Southern Australia

Variety	Early vigour	Flowering	Maturity	Ascochyta blight rating	Yield under high disease pressure (t/ha)		
					Fortnightly [#]	Nil ^{##}	% Yield loss ^{###}
PBA Slasher ^{db}	Poor/Mod	Mid	Mid	R	2.34	2.37	0
Genesis [™] 090	Good	Mid	Mid	R	2.29	2.13	5
Genesis [™] 509	Mod	Mid	Early/Mid	R	2.30	2.37	0
Genesis [™] 510	Mod	Mid	Early/Mid	R	2.26	2.02	9
Genesis [™] 836	Mod/Good	Mid/Late	Mid/Late	MS	2.00	1.66	15
Howzat ^{db}	Poor/Mod	Mid	Mid	MS	2.34	0.38	81
Sonal ^{db}	Good	Early	Early	MS	2.51	0.73	68

Source: Pulse Breeding Australia Horsham Victoria 2005

R = resistant, MS = moderately susceptible

Fortnightly = fortnightly fungicide applications commenced 8 weeks after emergence. All applications were 2 L/ha of chlorothalonil (720 g ai/L)

Nil = no fungicides applied

% Yield loss is the yield difference between the fortnightly fungicide treatment and the nil fungicide treatment

AGRONOMY

Agronomic characteristics

Paddock selection and agronomic requirements for growing PBA Slasher^{db} are similar to those for other desi chickpea varieties. PBA Slasher^{db} has the following characteristics:

- Mid flowering, similar to Howzat^{db} and approximately 1-2 days earlier than Genesis[™] 509 and 3-7 days earlier than Genesis[™] 836.
- Mid maturing, similar to Howzat^{db}, earlier than Genesis[™] 836 and later than Genesis[™] 509.
- Plant height and lowest pod height is similar to Howzat^{db} but lower than Genesis[™] 836 and Genesis[™] 509.
- Lodging resistance similar to Howzat^{db}.
- Semi-spreading plant type similar to Howzat^{db}.
- Adapted to a range of row spacing's and stubble management systems.
- Moderately intolerant of salt, more tolerant than Genesis[™] 509, but less tolerant than Genesis[™] 836.

Sowing

- Target 50 plants/m² as for other desi chickpea varieties.
- Target the optimum sowing window for desi chickpeas in your region.
- Inoculate with Group N Chickpea Rhizobium.

Herbicide tolerance

PBA Slasher^{db} performs similarly to all current varieties of desi chickpea and Genesis[™] 090 at label recommended rates of registered herbicides based on visual observations from three years of trials conducted on calcareous alkaline soils in South Australia.

On alkaline black cracking clay soils in the Wimmera, PBA Slasher^{db} has recorded increased sensitivity to high rates (2 x label rate) of flumetsulam compared with Genesis[™] 090. This same finding occurred on alkaline soils on the Yorke Peninsula in 2008, suggesting that with PBA Slasher^{db} a narrower safety margin may apply to this herbicide.

PBA Slasher[®]

Desi Chickpea

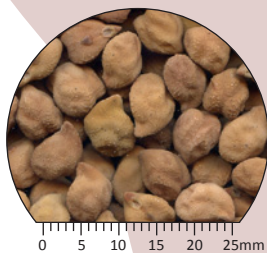
SEED QUALITY

PBA Slasher[®] is a medium sized desi chickpea suitable for both the split and whole seed markets. It has a slightly rounded seed that is larger than Genesis[™] 509 and Genesis[™] 510 but smaller than Howzat[®]. PBA Slasher[®] has a tan-brown seed coat that is lighter in colour than Genesis[™] 509 and Genesis[™] 510.

In experimental testing PBA Slasher[®] has demonstrated improved seed milling characteristics compared to Genesis[™] 509, Genesis[™] 510 and Genesis[™] 836 with a higher dehulling efficiency and dhal (splits) yield.

Variety	Seed weight (g/100)	Dhal yield (%)
PBA Slasher [®]	18	64.9
Genesis [™] 509	16	56.7
Genesis [™] 510	16	55.9
Genesis [™] 836	17	55.8
Howzat [®]	21	62.6

Source: Pulse Breeding Australia



PBA Slasher[®]



Genesis[™] 509

MARKETING

PBA Slasher[®] has been assessed by traders in India and considered suitable for both direct consumption and splitting end uses.

BREEDING

PBA Slasher[®] (evaluated as CICA0503) was developed by the PBA desi chickpea team led by NSW-DPI. It was produced from a cross between the adapted Australian variety Howzat[®] and an Ascochyta resistant Iranian landrace (ICC03996).

PULSE AGRONOMY

Agronomy management information has been compiled from experiments conducted by the 'Southern region pulse agronomy project' co-funded by GRDC, SARDI, DPI Victoria and NSW-DPI.

Disclaimer: Recommendations have been made from information available to date and considered reliable, and will be updated as further information comes to hand. Readers who act on this information do so at their own risk. No liability or responsibility is accepted for any actions or outcomes arising from use of the material contained in this publication. Reproduction of this brochure in any edited form must be approved by Pulse Breeding Australia © 2011

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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.

FOR MORE INFORMATION

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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 desi chickpea varieties.

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