

PBA Striker[®]

Desi Chickpea

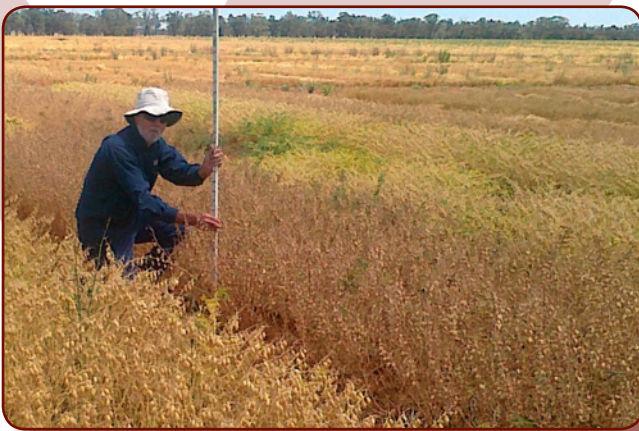


PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

High yielding, early flowering chickpea



KEY FEATURES

- Highest yielding across all chickpea growing areas of Western Australia and high yields in the low to medium rainfall areas of southern Australia
- Moderately Resistant (MR) to Ascochyta blight (resistance is > Genesis[™] 836 but < PBA Slasher[®])
- Improved early vigour compared to PBA Slasher[®]
- Early flowering and maturity (earlier than PBA Slasher[®] and Genesis[™] 836)
- Semi spreading plant type (similar to PBA Slasher[®])
- Medium sized desi seed with excellent milling quality (larger than PBA Slasher[®] and Genesis[™] 836)

MAIN ADVANTAGES

PBA Striker[®] represents a yield improvement in the short medium to low rainfall environments of western and southern Australia. This is due to its improved early vigour and earlier flowering and maturity compared to PBA Slasher[®] and Genesis[™] 836.

It is broadly adapted to these regions and has shown a consistent and significant yield advantage in Western Australia (7-13 %) over recently released varieties. PBA Striker[®] has a similar plant type to PBA Slasher[®] with larger seed size than PBA Slasher[®] and Genesis[™] 836.

SEED PROTECTION & ROYALTIES

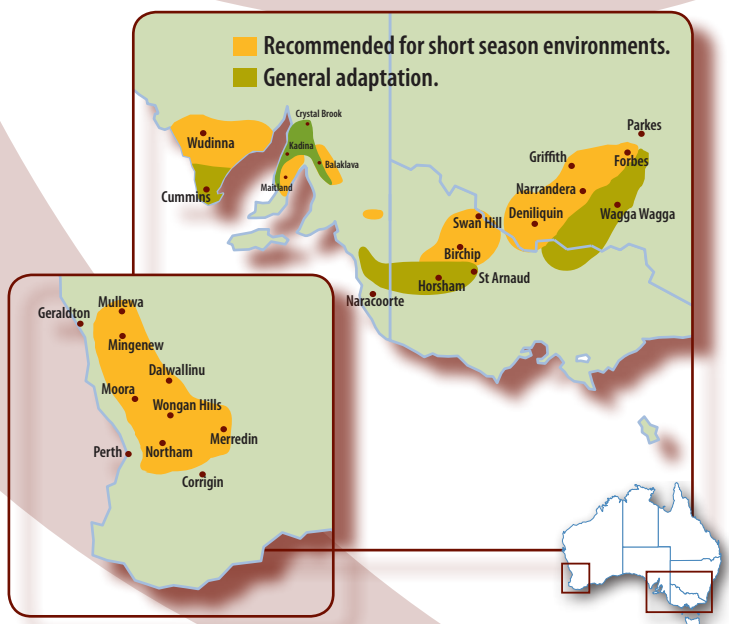
PBA Striker[®] is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from production of PBA Striker[®] for their own seed use.

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.

Seednet
Planting Productivity

AREA OF ADAPTATION



YIELD & ADAPTATION

PBA Striker[®] is currently the highest yielding variety in Western Australia. It is generally well adapted to the medium to low rainfall areas of Western Australia and southern Australia where chickpea is currently or has been previously grown.

Yields of PBA Striker[®] are substantially higher (7-13 %) than

PBA Slasher[®] and Genesis[™] 836 in Western Australia and similar to PBA Slasher[®] in south eastern Australia.

PBA Striker[®] is not recommended in the higher rainfall regions of south eastern Australia due to its lower resistance to ascochyta blight relative to PBA Slasher[®].

PBA Striker[®] is not adapted to Northern NSW or Southern QLD as it is susceptible to Phytophthora root rot.

Long-term yield of desi chickpea (% Genesis[™] 836) in Western Australia (2005-2011)

Variety	Agzone 1	Agzone 2	Agzone 4
PBA Striker[®]	113	112	111
PBA Slasher [®]	104	105	103
Genesis [™] 510	101	100	99
Genesis [™] 836	100	100	100
Sonali [®]	104	104	98
Genesis [™] 079*	103	101	99
Genesis [™] 090*	94	93	92
Genesis [™] 836 (t/ha)	1.44	1.16	1.03

Long-term yield of desi chickpea (% of PBA Slasher[®]) in South Australia (2005-2011)

Variety	Eyre Peninsula		Yorke	Mid North	South East
	Upper	Lower			
PBA Striker[®]	104	107	103	101	101
PBA Slasher [®]	100	100	100	100	100
Genesis [™] 509	90	81	92	93	94
Howzat [®]	96	85	93	89	94
PBA Boundary [®]	-	-	92	91	93
PBA HatTrick [®]	90	79	89	88	93
Genesis [™] 079*	100	94	101	98	99
Genesis [™] 090*	92	79	92	90	94
PBA Slasher [®] (t/ha)	1.93	0.78	2.07	2.13	2.09

Long-term yield of desi chickpea (% of PBA Slasher[®]) in Victoria and southern NSW (2005-2011)

Variety	Victoria		Southern NSW	
	Mallee	Wimmera	East	West
PBA Striker[®]	97	97	100	101
PBA Slasher [®]	100	100	100	100
Genesis [™] 509	91	90	93	94
Howzat [®]	93	87	93	95
PBA Boundary [®]	93	94	98	99
PBA HatTrick [®]	92	92	95	95
Genesis [™] 079*	97	96	98	97
Genesis [™] 090*	92	94	94	94
PBA Slasher [®] (t/ha)	1.49	1.41	1.81	1.72

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

* Genesis[™] 079 and Genesis[™] 090 are small kabulis

DISEASE MANAGEMENT

Ascochyta blight (AB)

- PBA Striker[®] is Moderately Resistant (MR) to foliar infection caused by the fungus (*Ascochyta rabiei*). This resistance is better than Genesis™ 836 but less resistant than Genesis™ 090 and PBA Slasher[®].
- AB management for PBA Striker[®] requires seed treatment and at least one fungicide application during the vegetative phase. Monitor the crop 10 – 14 days after each rain event. If AB is detected, apply Unite[®] or Barrack[®] (a.i. chlorothalonil) fungicide prior to the next rain event and continue monitoring.
- In WA, an early fungicide application is recommended 6-8 weeks after sowing to delay the development of AB.
- In all regions, monitor crops and apply fungicides from the start of podding prior to rainfall to prevent seed infection. PBA Striker[®] flowers and pods earlier than PBA Slasher[®], Genesis™ 836 and Genesis™ 090, so an earlier timing of pod sprays will be required.

Botrytis grey mould (BGM)

- Controlled environment testing and opportunistic field testing in 2010, indicates that PBA Striker[®] is Susceptible (S) to BGM. This rating is similar to PBA Slasher[®], Genesis™ 090 and Genesis™ 836.
- Early sowing coupled with favourable growth conditions in Spring can lead to crops with large biomass increasing the risk of BGM. PBA Striker[®] is prone to lodging under these conditions, so consider this when planning an early sown crop.
- Apply a preventative fungicide immediately prior to canopy closure in BGM prone areas and continue to monitor in Spring as temperatures and humidity rise. Apply a fungicide containing carbendazim once BGM has been identified.

Virus

- PBA Striker[®] is rated as Susceptible to the suite of viruses, similar to other desi varieties.

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

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 Striker [®]	Good	Early	Early	MR	1.53	0.97	37
PBA Slasher [®]	Poor/Mod	Mid	Mid	R	1.86	1.51	19
Genesis™ 509	Mod	Mid	Early/Mid	R	1.65	1.36	18
Genesis™ 510	Mod	Mid	Early/Mid	R	1.79	1.66	7
Genesis™ 836	Mod/Good	Mid/Late	Mid/Late	MS	1.28	0.61	53
Howzat [®]	Poor/Mod	Mid	Mid	S	1.08	0.11	90
PBA Boundary [®]	Mod	Mid/Late	Mid/Late	MR	1.65	1.03	37
PBA HatTrick [®]	Mod	Mid/Late	Mid/Late	MR	1.60	1.01	37
Genesis™ 079*	Good	Early	Early	R	1.67	1.12	33
Genesis™ 090*	Good	Mid	Mid	R	1.32	1.29	2

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 Striker[®] are similar to those for other desi chickpea varieties.

PBA Striker[®] has the following characteristics:

- Good early vigour, better than PBA Slasher
- Early flowering, approximately 5-7 days earlier than PBA Slasher[®]
- Earlier maturing than PBA Slasher[®] and Genesis™ 836
- Plant height and lowest pod height is similar to PBA Slasher[®] but lower than Genesis™ 836
- Lodging resistance similar to PBA Slasher[®]
- Semi-spreading plant type similar to PBA Slasher[®]
- Adapted to a range of row spacing's and stubble management systems
- Intolerant of salt, similar to Genesis™ 509 and Genesis™ 510. Less tolerant than Genesis™ 836.

Sowing

- Sow high quality seed at rates calculated to achieve 40 to 50 plants/m² establishment.
- Target the optimum sowing window for desi chickpeas in your region, but avoid very early sowing (to minimise the risk of lodging).
- Inoculate with Group N Chickpea Rhizobium.

Herbicide tolerance

PBA Striker[®] has not shown any sensitivity to a range of recommended pre- and post-emergent herbicides applied at recommended rates.

Adhere to label recommendations regarding chemical rates on differing soil textures

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

PBA Striker[®]

Desi Chickpea

SEED QUALITY

PBA Striker[®] is a standard 'Indian' type desi chickpea and has been assessed as suitable for both splitting and direct consumption use by traders in India and the Middle East. It is larger in size than PBA Slasher[®] and similar in seed colour.

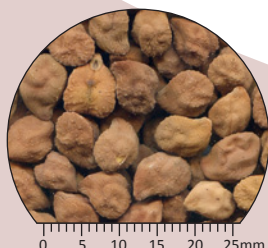
PBA Striker[®] has excellent milling quality, as measured by dhal yield (%), and is better than Genesis[™] 509, Genesis[™] 510 and Genesis[™] 836 (2-4 % higher). The dhal has the distinct dimpling required by Indian markets to differentiate it from field pea dhal. Dhal colour of PBA Striker[®] is very similar to that of PBA Slasher[®].

Variety	Seed weight (g/100)	Dhal yield (%)
PBA Striker [®]	22.1	68.0
PBA Slasher [®]	19.2	68.7
Genesis [™] 509	16.7	66.8
Genesis [™] 836	19.2	64.3
Howzat	20.5	68.4
PBA Boundary [®]	19.2	67.9

Source: Pulse Breeding Australia
Data is an average of 9 sites across 3 years (2009 - 11)



PBA Striker[®]



Genesis[™] 509

BREEDING

PBA Striker[®] (evaluated as CICA0603) was developed by the PBA chickpea breeding program (led by NSW Dept of Primary Industries) from a cross between 8511-14 (Howzat sister line) and the Ascochyta resistant Iranian landrace ICC3996).

PULSE AGRONOMY

Agromony 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, University of Sydney, SARDI, DPI Victoria, NSW-DPI, DAFF QLD, 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 desi chickpea varieties.

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