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.
YIELD & ADAPTATION

PBA Slasher® 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 Genesis™ 509 in all regions of South-eastern Australia and higher than Genesis™ 836 in Western Australia.

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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Victoria</th>
<th>Southern NSW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mallee</td>
<td>Wimmera</td>
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<tr>
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<td>1.33</td>
<td>1.08</td>
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<tr>
<td>Genesis™ 509</td>
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</tr>
<tr>
<td>Howzat®</td>
<td>88</td>
<td>89</td>
</tr>
<tr>
<td>PBA HatTrick®</td>
<td>88</td>
<td>89</td>
</tr>
<tr>
<td>Genesis™ 079*</td>
<td>97</td>
<td>96</td>
</tr>
<tr>
<td>Genesis™ 090*</td>
<td>89</td>
<td>91</td>
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<td>PBA Boundary®</td>
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<th>Variety</th>
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<tr>
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<td>86</td>
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<td>89</td>
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<td>Genesis™ 079*</td>
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<td>98</td>
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<tr>
<td>Genesis™ 090*</td>
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<td>105</td>
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<td>Genesis™ 510</td>
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<td>Sonali®</td>
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<td>103</td>
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<tr>
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<td>94</td>
<td>94</td>
<td>91</td>
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</tbody>
</table>

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 Slasher® 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® 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.

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.

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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Early vigour</th>
<th>Flowering</th>
<th>Maturity</th>
<th>Ascochyta blight rating</th>
<th>Yield under high disease pressure (t/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fortnightly</td>
</tr>
<tr>
<td>PBA Slasher®</td>
<td>Poor/Mod</td>
<td>Mid</td>
<td>Mid</td>
<td>R</td>
<td>2.34</td>
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<tr>
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<td>Mid</td>
<td>Mid</td>
<td>R</td>
<td>2.29</td>
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<td>Genesis™ 509</td>
<td>Mod</td>
<td>Mid</td>
<td>Early/Mid</td>
<td>R</td>
<td>2.30</td>
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<td>Genesis™ 510</td>
<td>Mod</td>
<td>Mid</td>
<td>Early/Mid</td>
<td>R</td>
<td>2.26</td>
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<tr>
<td>Genesis™ 836</td>
<td>Mod/Good</td>
<td>Mid/Late</td>
<td>Mid/Late</td>
<td>MS</td>
<td>2.00</td>
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<tr>
<td>Howzat®</td>
<td>Poor/Mod</td>
<td>Mid</td>
<td>Mid</td>
<td>MS</td>
<td>2.34</td>
</tr>
<tr>
<td>Sonali®</td>
<td>Good</td>
<td>Early</td>
<td>Early</td>
<td>MS</td>
<td>2.51</td>
</tr>
</tbody>
</table>

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® are similar to those for other desi chickpea varieties. PBA Slasher® has the following characteristics:

- Mid flowering, similar to Howzat® and approximately 1-2 days earlier than Genesis™ 509 and 3-7 days earlier than Genesis™ 836.
- Mid maturing, similar to Howzat®, earlier than Genesis™ 836 and later than Genesis™ 509.
- Plant height and lowest pod height is similar to Howzat® but lower than Genesis™ 836 and Genesis™ 509.
- Lodging resistance similar to Howzat®.
- Semi-spreading plant type similar to Howzat®.
- 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® 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® 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® a narrower safety margin may apply to this herbicide.

REFER TO DETAILED INFORMATION AT www.pulseaus.com.au

Ute guides, crop and disease management bulletins
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.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seed weight (g/100)</th>
<th>Dhal yield (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBA Slasher™</td>
<td>18</td>
<td>64.9</td>
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<tr>
<td>Genesis™ 509</td>
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<tr>
<td>Genesis™ 836</td>
<td>17</td>
<td>55.8</td>
</tr>
<tr>
<td>Howzat®</td>
<td>21</td>
<td>62.6</td>
</tr>
</tbody>
</table>

Source: Pulse Breeding Australia

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 (ICCO3996).

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.

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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

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.

PBA Slasher™ Desi Chickpea
Genesis™ 509