Better pulse varieties faster

Resistant to bacterial blight

KEY FEATURES
- Low risk option for bacterial blight
- High yield potential and broad adaptation
- Early to mid flowering and maturing
- Conventional plant type
- Early maturity allows crop topping
- Grain marketable as ‘Australian dun type’

MAIN ADVANTAGES
PBA Percy® (tested as OZP0901) and PBA Oura® (tested as OZP0703) are being released concurrently to provide growers with superior field pea options in bacterial blight prone regions.

Both varieties have high yield potential, are broadly adapted and perform relatively well in short growing seasons and low rainfall climates.

PBA Percy® and PBA Oura® have good levels of resistance to bacterial blight, showing minimal yield loss in trials subjected to high levels of bacterial blight pressure.

These varieties provide growers with the option of growing either a conventional type (PBA Percy®) or an erect semi-dwarf type (PBA Oura®) to suit on farm practices.

Both varieties are early flowering and maturing and better suited for crop topping than Kaspa®. Both produce Australian dun type grain suitable for human consumption export or stockfeed markets.

AREA OF ADAPTATION

PBA Percy® is broadly adapted across all the major field pea production regions and will provide a significant advantage to growers in regions prone to bacterial blight.

SEED PROTECTION & ROYALTIES
PBA Percy® is protected under Plant Breeder’s Rights (PBR) legislation. Growers can only retain seed from their production of PBA Percy® for their own seed use.

An End Point Royalty (EPR) of $2.86 per tonne (GST inclusive), which includes breeder royalties, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.
**YIELD & ADAPTATION**

PBA Percy is broadly adapted (e.g. similar to PBA Gunyah), is relatively earlier flowering, more reliable in shorter and lower rainfall growing seasons (e.g. compared to Kaspa and Parafield).

The main yield advantage of PBA Percy will be within regions prone to bacterial blight. Notably PBA Percy will be the lowest risk variety option for these regions.

### Long term mean yields 2006 to 2010 expressed as a % of Kaspa yield

<table>
<thead>
<tr>
<th>Representative growing season</th>
<th>Drought</th>
<th>Short Season</th>
<th>Medium Season</th>
<th>Long Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of experiments</td>
<td>18</td>
<td>35</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Trial group*</td>
<td>&lt;0.5 t/ha</td>
<td>0.5-1.0 t/ha</td>
<td>1.0-1.5 t/ha</td>
<td>1.5-2.0 t/ha</td>
</tr>
<tr>
<td>Mean Kaspa yield (t/ha)</td>
<td>0.33</td>
<td>0.71</td>
<td>1.22</td>
<td>1.81</td>
</tr>
</tbody>
</table>

### Short season variety options

- Parafield
  - Mean yield: 147, 104, 98, 96, 92, 90, 88
- PBA Twilight
  - Mean yield: 151, 127, 114, 105, 105, 94, 96
- Sturt
  - Mean yield: 187, 128, 107, 104, 98, 95

### Short to mid season variety options

- PBA Oura
  - Mean yield: 197, 127, 115, 111, 107, 100, 98
- PBA Percy
  - Mean yield: 145, 125, 112, 109, 106, 97, 98
- PBA Gunyah
  - Mean yield: 145, 125, 112, 109, 106, 97, 98

### Mid to long season variety options

- Yarrum
  - Mean yield: 97, 116, 114 (22), 109 (22), 112 (22), 103 (22), 102 (22)
- Kaspa
  - Mean yield: 100, 100, 100, 100, 100, 100, 100

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

### High bacterial blight disease pressure trials at Wagga Wagga, NSW 2006 to 2009

<table>
<thead>
<tr>
<th>Yield Loss</th>
<th>Mean (%)</th>
<th>Range (%)</th>
<th>Disease rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk variety options</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBA Percy</td>
<td>7</td>
<td>&lt;10%</td>
<td>R</td>
</tr>
<tr>
<td>PBA Oura</td>
<td>12</td>
<td>10-20%</td>
<td>MR</td>
</tr>
<tr>
<td>Parafield</td>
<td>15</td>
<td>10-20%</td>
<td>MR</td>
</tr>
<tr>
<td>Moderate to High risk variety options</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yarrum</td>
<td>20</td>
<td>20-30%</td>
<td>MS</td>
</tr>
<tr>
<td>Morgan</td>
<td>21</td>
<td>20-30%</td>
<td>MS</td>
</tr>
<tr>
<td>Sturt</td>
<td>27</td>
<td>20-30%</td>
<td>MS</td>
</tr>
<tr>
<td>High risk variety options</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBA Gunyah</td>
<td>31</td>
<td>&gt;30%</td>
<td>S</td>
</tr>
<tr>
<td>PBA Twilight</td>
<td>38</td>
<td>&gt;30%</td>
<td>S</td>
</tr>
<tr>
<td>SW Celine</td>
<td>37</td>
<td>&gt;30%</td>
<td>S</td>
</tr>
<tr>
<td>Excell</td>
<td>39</td>
<td>&gt;30%</td>
<td>S</td>
</tr>
<tr>
<td>Kaspa</td>
<td>41</td>
<td>&gt;30%</td>
<td>S</td>
</tr>
</tbody>
</table>

Yield loss was calculated from differences between un-inoculated and inoculated bacterial blight plot treatments.

**SOURCE:** Pulse Breeding Australia, Wagga Wagga Agricultural Institute, NSW-DPI.
AGRONOMY

Growers should follow the same sowing, harvest and weed management recommendations for other conventional varieties (i.e. Parafield) in their region to achieve optimal yields. PBA Percy® allows more flexibility to delay sowing and to crop top late in the season compared to later flowering conventional varieties such as Parafield.

- Very vigorous early plant growth.
- Early and long flowering duration.
- Fair to good pod shatter resistance at maturity.
- Plants grow tall and lodge at maturity, requiring crop lifters for harvest.
- Early maturing: suitable for crop-topping in long seasons.

DISEASE MANAGEMENT

PBA Percy® is a low risk option for bacterial blight prone regions. Compared to growing Parafield which was previously recommended for these regions, PBA Percy® will suffer less late season powdery mildew as it matures earlier.

- Sow within regionally recommended time periods.
- Follow recommended crop rotation practices.
- Avoid sowing disease infected seed.
- Use predictive models to manage blackspot e.g. blackspot manager www.agric.wa.gov.au/cropdisease

- Use regionally recommended seed and foliar fungicides to control downy mildew and blackspot.
- Follow regional pesticide recommendations for control of pea weevil and native budworm.

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

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.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Blackspot (Ascochyta)</th>
<th>Bacterial blight (Field rating)</th>
<th>Downy mildew (Parafield strain)</th>
<th>Downy mildew (Kaspa strain)</th>
<th>Powdery mildew</th>
<th>PSbMV*</th>
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<tbody>
<tr>
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<tr>
<td>Kaspa®</td>
<td>MS</td>
<td>S</td>
<td>MR</td>
<td>S</td>
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<tr>
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<td>Australian dun type</td>
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<tr>
<td>PBA Oura®</td>
<td>MS</td>
<td>MR</td>
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<td>MS</td>
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<td>Sturt®</td>
<td>MS</td>
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<tr>
<td>Maki®</td>
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<td>S</td>
<td>S</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

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
**GRAIN QUALITY**

PBA Percy® produces grain with a yellow split. The whole grain is similar to Parafield, is large in size with a tan-green colour and is dimpled. PBA Percy® grain is marketable as “Australian dun type” which is exported to the Asian sub-continent for production of dhal and pea flour and also sold for stockfeed.

**MARKETING**

PBA Percy® produces grain that is marketable as ‘Australian dun type’ for human consumption or stockfeed similar to Parafield and Yarrum®. Australian dun type grain is exported for human consumption to the Indian sub-continent as a source of yellow dhal and to Asian markets for sprouting. Growers should avoid contamination between different grain types (e.g. “Australian dun type” and “Kaspa type”) as they are marketed differently for human consumption. Specific whole grain attributes of different varieties may also improve grain marketability or attract price premiums from different human consumption markets such as a large grain size (e.g. Parafield and PBA Percy®) and a uniform and unblemished green coat colour (e.g. PBA Oura®).

**BREEDING**

PBA Percy® was identified by the PBA Field pea team and was bred at DPI Victoria - Horsham from a complex crossing program ending in 1997 and following a recurrent selection for high yield potential, high early plant vigour and general adaptation in low rainfall cropping regions. PBA Percy® was identified for release based on superior field resistance to bacterial blight in disease nurseries at Wagga Wagga and Horsham and fast tracked to commercial release by the PBA program. The variety is named after Percy’s Beach located in the Murray river reserve region, west of Yarrawonga in Victoria.

**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.

**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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Field pea Blackspot Sowing Guides;
www.agric.wa.gov.au/cropdisease

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