**PBA Bounty**

**Small Red Lentil**

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**Main Features**

- Highest yielding small seeded red lentil variety (average yield 2 to 6% higher than Nugget and 6 to 15% higher than Nipper across all lentil growing regions of Australia)
- Mid maturity similar to Nugget
- Prostrate growth habit early in season
- Moderately resistant to seed and foliar ascochyta blight (AB)
- Moderately susceptible to botrytis grey mould (BGM)
- Improved tolerance to salinity compared to Nugget
- Small, round red lentil with a grey seed coat

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**Main Advantages**

PBA Bounty is the highest yielding small round seeded red lentil variety. PBA Bounty is suited to all current lentil areas where it has consistently yielded around 5% higher than Nugget. It can be grown in higher rainfall areas provided BGM is managed. PBA Bounty is particularly suited to growers who can benefit from the higher prices that can exist for small seeded red lentil without compromising yield compared to medium red lentils. Seed of PBA Bounty is 10% larger than Nipper and Northfield but is likely to be exported to similar small red lentil markets.

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**Seed Protection & Royalties**

PBA Bounty is protected under Plant Breeder's Rights (PBR) legislation. Authorised growers can retain seed from production of PBA Bounty for their own seed use. An End Point Royalty of $5.50/t (including GST) applies to this variety when delivered to authorised traders. PBA Bounty is also protected by a security system that can identify the lentil variety delivered to a receival site using genetic markers. Seed is commercialised through PBSeeds and available from 2010.

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**Area of Adaptation**

PBA Bounty is also adapted to current lentil growing areas in NSW and WA.
YIELD & ADAPTATION

PBA Bounty® has been the highest yielding small round red lentil variety in all regions of southern Australia, with a 6-15% yield advantage over Nipper®. It is also the highest yielding lentil variety in the southern Mallee region of Victoria but PBA Flash® has been the highest yielding variety in all other regions of southern Australia. Disease must be controlled in higher rainfall, longer growing season areas to realise the yield benefit of PBA Bounty® as it does not have the high level of disease resistance as Nipper®.

PBA Bounty® is best suited to the following regions:
- Yorke Peninsula (SA)
- lower mid north (SA)
- lower Eyre Peninsula (SA)
- southern Mallee (Victoria & SA)
- northern Wimmera (Victoria)

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**2003-2008 LONG-TERM YIELD OF LENTIL VARIETIES**

Varieties in low and higher yielding trials across southern Australia. Yields expressed as a % of Nugget’s yield

<table>
<thead>
<tr>
<th>Variety</th>
<th>Victoria</th>
<th>South Australia</th>
<th>NSW</th>
<th>WA</th>
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<tr>
<td></td>
<td>Wimmera</td>
<td>Mallee</td>
<td>Yorke P</td>
<td>Mid North</td>
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<tr>
<td>Site mean yield (t/ha)</td>
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<td>2</td>
<td>0.5</td>
<td>1.5</td>
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<tr>
<td>Medium red</td>
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<td>92</td>
<td>93</td>
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<tr>
<td>PBA Bounty®</td>
<td>102</td>
<td>103</td>
<td>109</td>
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<tr>
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<td>91</td>
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<tr>
<td>Boomer®</td>
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Data courtesy PBA, SARDI, DPI Victoria, I&I NSW, DAFWA, NVT

**AGRONOMIC AND DISEASE TRaits OF LENTIL VARIETIES**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Vigour</th>
<th>Plant height</th>
<th>Flower time</th>
<th>Maturity</th>
<th>Lodging resistance</th>
<th>Pod drop</th>
<th>Shattering</th>
<th>Ascochyta blight</th>
<th>Botrytis</th>
<th>Boron</th>
<th>Salt</th>
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<td>MR</td>
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<td>MR</td>
<td>MR/MS</td>
<td>S</td>
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<td>M</td>
<td>M/L</td>
<td>MS</td>
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<td>M/L</td>
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<td>LS</td>
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<td>M/L</td>
<td>M</td>
<td>MR</td>
<td>MR</td>
<td>R</td>
<td>R</td>
<td>S</td>
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<td>M/L</td>
<td>M</td>
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<td>MR</td>
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<td>MR</td>
<td>MR/MS</td>
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<tr>
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<td>MS</td>
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<td>MS</td>
<td>MR/MS</td>
<td>M</td>
<td>MR</td>
<td>MR</td>
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</tbody>
</table>

Key: Mod=moderate, Med=medium, Sht=short, E=early, M=mid, L=late, S=susceptible, MS=moderately susceptible, MR=moderately resistant, R=resistant, I=intolerant, MI=moderately intolerant, MT=moderately tolerant. * more prone to pod drop in windy environments due to improved resistance to lodging.
DISEASE MANAGEMENT

Botrytis grey mould (BGM)

PBA Bounty® is rated moderately susceptible to BGM and requires a higher level of fungicide use than for Nugget in wet years. Management should be as for Aldinga:
- apply a preventative fungicide at canopy closure in BGM prone areas
- additional sprays will be required in wet spring conditions in BGM prone environments

Ascochyta blight (AB)

PBA Bounty® has moderate resistance to foliar and seed infection by AB, similar to Nugget but not as good as Nipper® or Northfield. AB management for PBA Bounty® is similar to Nugget.
- monitor crops and apply fungicides from the start of podding in front of rainfall events to prevent seed infection and potentially yield loss
A recommended fungicide seed dressing is beneficial for early control of seedling root rots, AB and BGM.

AGRONOMY

Agronomic characteristics

Paddock selection and basic requirements for growing PBA Bounty® are similar to other lentil varieties. PBA Bounty® has the following characteristics:
- mid flowering and maturing, similar to Nugget
- prostrate growth habit early in the season compared to other varieties
- plant height is shorter than Nugget and PBA Flash® but taller than Northfield and Nipper
- lodging resistance is lower than Nipper®, PBA Flash® and Nugget but similar to Northfield
- tolerance to salinity (NaCl) similar to PBA Flash®, lower than Nipper® but higher than all other varieties

Sowing

Preliminary agronomic trial data suggest that PBA Bounty® responds similarly to Nugget to varying sowing times. If sowing early in BGM prone areas, there is increased risk of lodging and BGM infection and timely management of this disease is essential. Due to its more prostrate early growth habit PBA Bounty® may not be suited to late sowings in environments with a short growing season.
- target 120 plants/m² as for Nugget
- target similar sowing dates to Nugget

Herbicide tolerance

In three years of visual observation trials conducted in SA (calcareous alkaline soils) PBA Bounty® has exhibited higher levels of susceptibility to Brodal Options® than Nugget particularly at high rates potentially indicating a narrow safety margin to this herbicide. Further research is occurring to validate these preliminary findings but care should be taken when using this herbicides in PBA Bounty® and growers should strictly adhere to label recommendations for rates, timing and conditions to minimise potential crop damage. The tolerance of PBA Bounty® to label recommended rates of other registered herbicides is similar to Nugget based on observation trials.

Crop topping and harvest

PBA Bounty® matures at a similar time to Nugget but later than PBA Flash®. Yield loss or poor seed quality may result from the incorrect timing of crop topping, especially when the maturity of the crop is delayed relative to weeds such as can occur with late sowings.
Timely harvest is critical in all lentil varieties to prevent yield loss from pod drop and to maximise quality. PBA Bounty® is less prone to pod drop in windy environments than other varieties that are more erect at harvest.

QUALITY

Seed characteristics

PBA Bounty® is a small red lentil with a grey seed coat that has a round seed that is larger than Nipper® but smaller than Nugget and PBA Flash®. It is approximately 10% larger than Northfield and Nipper® but likely to be sold into similar markets for splitting or the production of “footballs” (whole seed with the seed coat removed).
Quality assurance
Seed purity is very important in lentils with a restriction of 1% for varieties not of the same type. Prevent seed contamination when changing varieties, particularly where cotyledon or seed coat colour differs. Ensure volunteer lentils are controlled prior to sowing and implement good seed handling hygiene practices. Be particularly careful to avoid contamination of PBA Bounty® with green lentils such as Boomer® as when split the yellow seeds will contaminate and reduce the value of the red lentil split product if not graded out before splitting. For the purpose of seed cleaning PBA Bounty® has a seed size larger than Nipper® and Northfield, but smaller than all other varieties.

MARKETING
PBA Bounty® fits into the small sized red lentil class for human food markets.
Seed of PBA Bounty® will be segregated from other lentil varieties due to a unique combination of seed size and coat colour.
Due to larger seed than Nipper® and Northfield it may be less preferred in very small “football” markets (eg Bangladesh) but more preferred for larger “footballs” (eg Turkish red markets).
Open marketing to authorised grain traders with an end-point royalty of $5.50/t (including GST) on deliveries.

BREEDING
PBA Bounty® (evaluated as CIPAL415) was developed by the PBA lentil program, led by DPI Victoria. It was produced from a cross between two lines from ICARDA, Syria (ILL6788 and ILL7180 (Nugget)). PBA Bounty® is part of a pipeline of varieties that will be released by PBA in the next 5 years. PBA formed a commercial partnership with PBSeeds to multiply, manage and release PBA lentil varieties. PBSeeds and PBA are delivering varieties to growers 2-4 years earlier by fast tracking the identification, multiplication, generation of information and release of new varieties. The Southern Pulse Agronomy project has been integral to the process.

FOR MORE INFORMATION

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At PBSeeds we are leaders in the production of fine quality seed and grains. We take great care and pride in ensuring we match our customer’s requirements.
PBSeeds is proud to partner with PBA and invests in the improvement of Australian lentil varieties.

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