

Lentil varieties



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Take home messages

- *Desiccating lentil crops was critical in 2010 to minimising losses by allowing an earlier harvest, prior to the heavy rainfall events. Rainfall affected crops yielded up to 50% less.*
- *The earlier maturing varieties PBA Flash and PBA Blitz offer higher yields in drier years but not necessarily in long seasons such as 2010.*
- *In the Mallee, PBA Blitz offers good disease resistance which improves reliability and yield and its medium large seed makes it attractive for export.*
- *Late in 2010 in the Mallee, disease and virus were observed. These may have resulted in higher seed infection and inoculum levels. Be prepared for higher disease and virus levels in 2011 (refer to disease guides).*

2010 in review

Sowing generally occurred under ideal moisture conditions. However, several challenges arose throughout the season:

- establishment issues across regions. Mice appeared to be worse in paddocks with high stubble loads and in some cases reduced establishment by 30 – 40%
- many growers and trial sites experienced problems with stubble building up and being caught on the tynes of seeding equipment. Parts of paddocks were dragged of all stubble, which resulted in poorer establishment
- poor quality seed from the 2009 harvest was also expected to produce poor establishment, and in most cases, growers adjusted sowing rates accordingly. Ideal sowing conditions meant that establishment was greater than predicted
- rainfall was generally average or above average in most areas and fell at the right time for lentils throughout the growing season. In heavier textured soils and lower lying areas, waterlogging became an issue during winter and early spring. Temperatures were close to optimum for lentil production with few or no extreme heat or frost events
- ascochyta blight was identified in some crops, particularly in the Mallee and required the application of fungicides. Botrytis grey mould was also prevalent in spring, particularly in early-sown Mallee crops. Late botrytis grey mould infection also caused the death of growing tips
- insect pests and viruses did not appear to be a major problem in 2010; locusts, although annoying, failed to cause significant damage

- there was potential for high yields across most regions, particularly in the southern Mallee, and where growers were able to harvest their lentils prior to the first major rain event in November, yields as high as 2 – 2.5t/ha were not uncommon. However, crops harvested after multiple rain events suffered significant yield loss and reduced grain quality
- wrinkled seed coat, associated with brittle seed and lower splitting yields, was common after rain. The extent of damage varied and exporters have worked hard at sending grain samples to buyers overseas, where they assess the quality of wrinkled lentils.

Preliminary trial results:

- Higher yields were obtained where crops were harvested before multiple rain events. Beulah was desiccated and harvested before the first large rain event and Horsham was desiccated and harvested after the first event, but prior to other large rain events that fell there. Potential yields at Hopetoun were similar to Beulah prior to the rain, but as this site could not be harvested until after multiple rain events, significant yield loss occurred with the mean yield of entries being over 50% lower at Hopetoun (1.32t/ha) than at Beulah (2.72t/ha). A key lesson was to desiccate and harvest as soon as possible.
- Longer season lentil varieties and PBA Blitz performed well in 2010. The mid season variety PBA Bounty demonstrated good yield potential in the Mallee. However it is more difficult to harvest due to more prostrate growth. By contrast, PBA Flash yielded less due to its early maturity, but was often easier to harvest because of its erect growth habit.

Table one: Lentil variety yields in 2010 as a % of Nugget.

	Beulah	Horsham	Hopetoun*
Aldinga	100	100	75
Boomer	93	100	59
Digger	94	89	79
Nipper	89	90	109
Northfield	89	87	73
Nugget	100	100	100
PBA Blitz	100	101	91
PBA Bounty	111	111	108
PBA Flash	90	90	67
PBA Jumbo	107	97	95
Yield Mean (tonnes/ha):	2.72	2.87	1.32
LSD:	14	15	
CV (%):	7.22	9.41	

** Preliminary analysis only: data should be treated with caution*

Newer Varieties and their Agronomy

([Ⓛ]) denotes Plant Breeder Rights apply

Red Lentil - PBA BLITZ[Ⓛ]

PBA Blitz[Ⓛ] is suited to all current lentil-growing areas. It is particularly suited to shorter-season areas where its combination of good early vigour, early to mid flowering, early-mid maturity, high disease resistance and yield will improve reliability and economics of production. PBA Blitz[Ⓛ] is the earliest maturing lentil variety and the best option where crop topping and/or delayed sowing are practised. It is well-suited to no-till and inter-row sowing into standing stubble. PBA Blitz[Ⓛ] has an attractive seed for export, being rounder and significantly larger than Nugget.

Vic Mallee Adaptation: Results from Victorian trials indicate that it is earlier to commence flowering than all other varieties, but its maturity is similar to varieties such as PBA Flash. PBA Blitz[Ⓛ] will benefit from early sowing in low-yielding short season situations and its early flowering will provide greater flexibility than other varieties in sowing times. PBA Blitz[Ⓛ] has high botrytis grey mould and ascochyta resistance, limiting the need for fungicides in the Mallee.

Red Lentil - PBA JUMBO[Ⓛ]

PBA Jumbo[Ⓛ] is a high-yielding large-seeded red lentil, similar to Aldinga. It is suited to most current lentil growing areas where it has consistently yielded similar or better than Aldinga. PBA Jumbo[Ⓛ] is resistant to foliar and seed infection by ascochyta blight: an improvement from Aldinga and Nugget. PBA Jumbo[Ⓛ] is well suited to no-till, inter-row sowing into standing stubble. Its seed size and shape are similar to Aldinga (20% larger than Nugget) with a grey seed coat. Attaining uniform larger seed size is more likely in medium to high rainfall regions. Milling quality is better than Nugget and will suit premium large red split lentil markets such as those in Sri Lanka.

Vic Mallee Adaptation: PBA Jumbo[Ⓛ] is susceptible to lodging, and will particularly benefit from inter-row sowing in standing stubble. PBA Jumbo[Ⓛ] is a high-yielding mid- season variety, and will be more unreliable than earlier maturing varieties in the Mallee. Increasing international demand for larger seed may drive higher prices.

Red Lentil - PBA BOUNTY[Ⓛ]

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 about 5% higher than Nugget. It can be grown in higher rainfall areas, provided BGM is managed. PBA Bounty[Ⓛ] will suit growers who are looking to achieve the higher prices that can often exist for small seeded red lentil without compromising on yield. Seed of PBA Bounty[Ⓛ] is 10% larger than Nipper and Northfield, but is likely to be exported to similar small red lentil markets.

Vic Mallee Adaptation: PBA Bounty[Ⓛ] has been the highest-yielding lentil variety in breeding trials in the southern Mallee region of Victoria. It has a prostrate growth habit and is susceptible to lodging, so will particularly benefit from inter-row sowing into standing stubble. 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.

Red Lentil – PBA FLASH[Ⓛ]

PBA Flash[Ⓛ] is suited to all current lentil-growing areas, but particularly shorter-season areas where its high yield and earlier maturity improve reliability of yield, especially in low yielding situations. Botrytis grey mould and ascochyta blight must be controlled when sowing early, and in higher rainfall areas. The ascochyta blight rating for PBA Flash[Ⓛ] has been lowered to MS due to the presence of higher levels found on the variety in South Australia than had been seen previously. Earlier maturity makes PBA Flash[Ⓛ] potentially suitable to timely crop topping and it is well suited to no-till, inter-row sowing into standing residue. When seed size is large, PBA Flash[Ⓛ] is likely to be exported to medium red lentil markets similar to those for Nugget or Aldinga.

Vic Mallee Adaptation: Agronomic trial data suggest that PBA Flash[Ⓛ] is better suited to earlier sowing dates than Nugget, Boomer[Ⓛ] and Northfield due to a combination of erect plant type and earlier maturity. Yields can be higher in short season years, but disease must be managed. Fungicide applications starting around pre-canopy closure are recommended.

Red lentil – NIPPER[Ⓛ]

This variety is resistant to ascochyta blight and botrytis grey mould. It is similar to Northfield in many characteristics, including relatively short height and seed shape, but its seed coat is grey. It is best adapted to the Wimmera, where disease is more common. Nipper[Ⓛ] is also resistant to the exotic disease Fusarium wilt, and has improved NaCl tolerance and generally lodges less than other varieties.

Vic Mallee Adaptation: Nipper[Ⓛ] is generally best suited to medium to high rainfall zones, but can potentially produce good yields when sown early. Due to its disease resistance, the risk from early sowing is significantly reduced.

Green lentil - BOOMER[Ⓛ]

This is a large-seeded green lentil. It is tall and vigorous, but can lodge when growing conditions are favourable. Sowing early can increase lodging and result in smaller seed. Boomer[Ⓛ] is relatively resistant to both ascochyta blight and botrytis grey mould, but is moderately susceptible to seed infection. Because it is consumed whole, pods must be protected to ensure good visual appearance of seed that is not blemished.

Vic Mallee Adaptation: Early harvest is important to prevent shattering and to produce good coloured seed. Sowing inter-row into standing stubbles is suggested to help prevent lodging.