

PBA Blitz[®]

Medium red lentil



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Short season high yielding lentil



PBA Blitz[®] (left) matures earlier than other varieties

MAIN ADVANTAGES

PBA Blitz[®] is suited to all current lentil areas. It is particularly suited to shorter-season areas where its combination of early to mid flowering, early maturity, high yield and good disease resistance will improve lentil 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. PBA Blitz[®] has improved early vigour over all other red lentil varieties and an erect plant type. It is well suited to no-till and inter-row sowing into standing residue. PBA Blitz[®] has seed that is slightly rounder and significantly larger than Nugget.

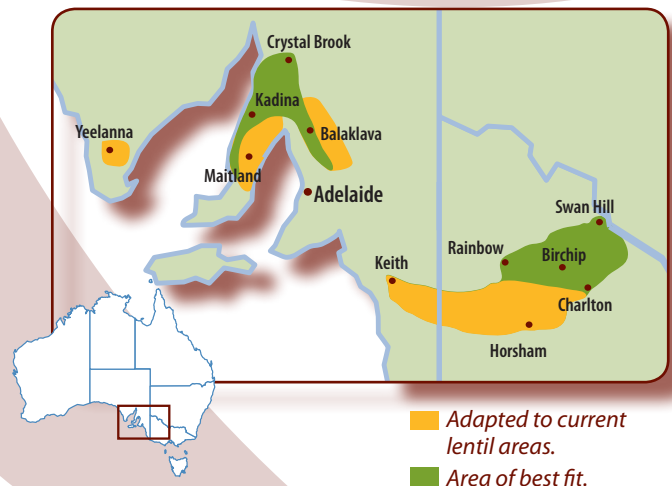
SEED PROTECTION & ROYALTIES

PBA Blitz[®] is protected under Plant Breeder's Rights (PBR) legislation. A PBR bag licence applies to the seed. Authorised growers can retain seed from production of PBA Blitz[®] for their own seed use. An End Point Royalty (EPR) of \$5.50/t (including GST) applies to this variety when delivered to authorised EPR collectors. PBA Blitz[®] 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 2011.

KEY FEATURES

- Earliest flowering and maturing red lentil
- Better suited to crop topping and delayed sowing than other varieties
- Excellent yields in short growing seasons and environments
- High yielding across all lentil growing regions of southern Australia
- Resistant to foliar and moderately resistant to seed ascochyta blight (AB)
- Moderately resistant to botrytis grey mould (BGM), similar to Nugget and greater than PBA Flash[®]
- Improved early vigour over all other red lentil varieties with an erect growth habit
- Medium sized red lentil (larger than PBA Flash[®] and Nugget) with a grey coloured seed coat

AREA OF ADAPTATION



YIELD & ADAPTATION

- PBA Blitz[®] has high yields and is well adapted to all areas of southern Australia where lentils are currently grown.
- It is the first Australian lentil variety with both early maturity and good resistance to the two major lentil diseases (AB and BGM). This unique combination makes it the most reliable, economic and best suited lentil to short growing seasons and environments.
- Because of its early flowering and maturing characteristic PBA Blitz[®] is well suited to situations where crop topping or delayed sowing is practised.
- In longer growing season environments the early maturity of PBA Blitz[®] may limit yield potential relative to longer growing season varieties.
- Vic: yields similarly to PBA Flash[®] and higher than Nugget in the Mallee and Wimmera regions
- SA: superior to PBA Flash[®] in short season environments (e.g. 2009). Long term average yield across all regions is slightly lower than PBA Flash[®] but superior to Nugget.
- WA/NSW: limited yield data available. The short growing season of PBA Blitz[®] should provide an advantage over other lentil varieties in WA.

2003-2009 LONG-TERM YIELD OF LENTIL VARIETIES (* Yields expressed as a % of Nugget's yield)							2009 Short season Average state yields*	
Site mean yield (t/ha)	South Australia				Victoria		SA	Vic
	Yorke P	Mid North	Lower EP	South East	Mallee	Wimmera		
Site mean yield (t/ha)	1.92	1.79	1.46	2.08	1.34	1.25	2.46	0.96
Medium red								
PBA Blitz [®]	108	111	109	106	107	106	128	138
PBA Flash [®]	110	112	111	109	107	107	123	137
Cassab	93	94	95	-	94	92	-	-
Digger	94	96	96	95	95	93	-	-
Nugget	100	100	100	100	100	100	100	100
Small red								
PBA Bounty [®]	105	105	104	102	105	104	105	123
Nipper [®]	97	101	99	98	94	96	105	96
Northfield	93	92	91	92	90	91	93	83
Large red								
PBA Jumbo [®]	112	112	109	109	109	107	122	125
Aldinga	97	97	95	95	96	93	-	-
Large green								
Boomer [®]	105	104	104	104	102	99	101	97

Data courtesy of NVT, PBA, SARDI, DPI Victoria

AGRONOMIC AND DISEASE TRAITS OF LENTIL VARIETIES

	Vigour	Plant height	Flower time	Maturity	Lodging resistance	Pod drop	Shattering	Ascochyta blight		Botrytis grey mould	Boron	Salt
								Foliage	Seed			
Medium red												
PBA Blitz [®]	Mod/Good	Med/Tall	Early/Mid	Early	MR	MR	MR	R	MR	MR	I	I
PBA Flash [®]	Mod	Med	Mid	Early/Mid	MR	MR	MR	MR	MR	S	MI	MI
Cassab	Mod	Med	Mid	Mid/Late	MS	MR	MR	MR	MS	MR	I	I
Digger	Mod	Med	Mid	Mid/Late	MS	MR	MR	MR	MS	MR	I	I
Nugget	Mod	Med	Mid	Mid/Late	MS/MR	MR	MR	MR	MS/MR	MR	I	I
Small red												
PBA Bounty [®]	Mod	Med/Short	Mid/Late	Mid	MS	MR	MR	MR	MR	MS	I	MI
Nipper [®]	Poor/Mod	Short	Mid/Late	Mid	MR	MR	MR	R	R	R	I	MT
Northfield	Poor/Mod	Short	Mid/Late	Mid	MS	MR	MR	R	R	S	I	MI
Large red												
PBA Jumbo [®]	Mod	Med	Mid	Mid	MS	MR	MR	R	R	MS	MI	MI
Aldinga	Mod	Med	Mid	Mid	S	MR	MR	MR	MS	MS	I	I
Large green												
Boomer [®]	Good	Tall	Early/Mid	Mid/Late	MS	MR	MS	MR	MS	MR	I	I

Key: Mod=moderate, Med=medium, S=susceptible, MS=moderately susceptible, MR=moderately resistant, R=resistant, I=intolerant, MI=moderately intolerant, MT=moderately tolerant.

DISEASE MANAGEMENT

PBA Blitz[®] is targeted towards shorter season and dryer environments where foliar disease is generally a lower risk. Its high level of disease resistance may mean that no fungicides are required in many seasons in these environments. A recommended fungicide seed dressing is beneficial for early control of seedling root rots and BGM.

Botrytis grey mould (BGM)

- PBA Blitz[®] is rated as moderately resistant to BGM. Management should be as for Nugget.
- In BGM prone areas monitor crop growth and apply a preventative fungicide at canopy closure. Further monitoring and sprays may be required in wetter areas and long growing seasons.

Ascochyta blight (AB)

- PBA Blitz[®] is rated as resistant to foliar AB and moderately resistant to seed infection by AB.
- In disease risk environments crops should be monitored and fungicides applied at the start of podding in front of rainfall events if disease symptoms are detected.

AGRONOMY

Agronomic characteristics

Paddock selection and basic requirements for growing PBA Blitz[®] are similar to other lentil varieties.

PBA Blitz[®] has the following characteristics;

- Early to mid flowering, flowering up to 10 days earlier than PBA Flash[®] and 5-15 days earlier than Nugget,
- Early maturing. Earlier than all other varieties but can be similar to PBA Flash[®] in some seasons,
- Improved early vigour over all red lentil varieties,
- Medium plant and pod height, similar to Nugget but less than PBA Flash[®],
- Lodging resistance similar to PBA Flash[®] and Nipper[®] but improved over Nugget,
- Rated as intolerant to soil boron and salinity (NaCl) similar to Nugget but less than PBA Flash[®].

Sowing

- PBA Blitz[®] has benefited from early sowing in some low yielding and short season situations. However, due to its early maturity, it provides increased flexibility over other varieties in relation to sowing times.
- Preliminary agronomic trial data (2008-2009) on the Yorke Peninsula, SA showed that PBA Blitz[®] can be less responsive to early sowing (first week of May) than other varieties. In some trials PBA Blitz[®] incurred a yield loss at this early sowing compared with a mid to late May sowing.

- PBA Blitz[®] along with PBA Flash[®] have been the highest yielding varieties at later sowing dates (early to mid June).
- PBA Blitz[®] will be better suited to earlier sowing dates in BGM prone areas than PBA Flash[®] due to its better disease resistance and the relative later onset of canopy closure.
- Target plant densities of 120 plants/m² as for Nugget.

Herbicide tolerance

- The tolerance of PBA Blitz[®] to label rates of registered herbicides is similar to Nugget based on visual observations from four years of trials conducted on calcareous clay loam alkaline soils in SA.

Crop topping and harvest

- PBA Blitz[®] matures earlier than all current varieties and is therefore more suited to crop-topping to control weeds. However its maturity can vary between years and locations. Yield loss or poor seed quality may result from the incorrect timing of crop topping, especially when crop maturity is delayed relative to the weeds which can occur with late sowing.
- PBA Blitz[®] has shown a good level of resistance to pod drop and shattering despite its erect plant type and early maturity. However timely harvest is critical in all lentil varieties to prevent yield loss from pod drop and to maximise quality.

QUALITY

Seed characteristics

PBA Blitz[®] is a medium-sized red lentil. It has a lens-shaped seed similar, but slightly rounder and significantly larger than Nugget and PBA Flash[®] with a grey seed coat. PBA Blitz[®] demonstrated similar but generally improved seed milling characteristics compared to Nugget in laboratory testing. Seed size, as measured by 100 seed weight, is generally 15-20% greater than Nugget and it has consistently achieved a higher rate of seed size uniformity in short season environments.



PBA Blitz[®]



PBA Flash[®]



Nugget

PBA Blitz[®]

Medium red lentil

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. Be particularly careful to avoid contamination of PBA Blitz[®] with green lentils such as Boomer[®] as when split the yellow seeds will contaminate and reduce the value of the red split lentil product. For the purpose of seed cleaning PBA Blitz[®] has a seed size greater than PBA Flash[®] and Nugget but generally less than Aldinga.

Variety	Market category	Seed shape	Seed coat colour	Cotyledon colour	Seed size relative to Nugget
Medium red					
PBA Blitz [®]	MRS	Lens	Grey	Red	15-20% >
PBA Flash [®]	MRS	Lens	Green	Red	0-10% >
Cassab	MRS	Lens	Grey	Red	Similar
Digger	MRS	Lens	Grey	Red	Similar
Nugget	MRS	Lens	Grey	Red	-
Small red					
PBA Bounty [®]	SRP	Round	Grey	Red	10% <
Nipper [®]	SRP	Round	Grey	Red	20% <
Northfield	SRP	Round	Tan	Red	20% <
Large red					
PBA Jumbo [®]	LRS	Lens	Grey	Red	20% >
Aldinga	LRS	Lens	Green	Red	20% >
Large green					
Boomer [®]	LG	Lens	Green	Yellow	50% >

MARKETING

- PBA Blitz[®] fits into the human food market for medium sized red lentils and is expected to be accepted into similar markets as Nugget and PBA Flash[®]. It may also have some potential fit in the larger seeded Aldinga type markets in seasons which favour the production of large uniform seed.
- Seed of PBA Blitz[®] is rounder than Nugget and is likely to be more preferred in splitting markets.
- PBA Blitz[®] will be open marketed with an End Point Royalty, including breeders royalties, of \$5.50/t (including GST) applied upon delivery.

BREEDING

PBA Blitz[®] (evaluated as CIPAL610) was developed by the PBA lentil program, led by DPI Victoria. It was produced from a complex cross involving Cassab, Cumra and the Canadian variety Indianhead to develop lentils with both improved disease resistance and earlier maturity. PBA Blitz[®] is part of a pipeline of varieties that will be released by PBA in the next 4 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.



Better pulse varieties faster

PBA is an unincorporated joint venture between the GRDC, University of Adelaide, SARDI, DPI Victoria, I&I NSW, DEEDI, DAFWA and Pulse Australia. It aims to deliver better pulse varieties faster.

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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