



# Bolt and Blitz lentils quick but Jumbo2 still big enough

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**P**BA Jumbo2, PBA Bolt and PBA Blitz took out equal spot as the highest yielding lentil varieties across all South Australian National Variety Trials (NVT) and Pulse Breeding Australia (PBA) trials in 2015. All three varieties averaged yields 3% higher than PBA Flash and 15% higher than Nugget and PBA Hurricane XT.

Average site mean yield across all 12 sites was 1.44 t/ha. This was lower than previous seasons due to hot and dry spring conditions.

Individual site mean yields ranged from 0.7 t/ha at Lameroo, to 2.69 t/ha at Riverton, with the yields reflecting the growing season rainfall.

Dry spring conditions was the major yield limiting factor in 2015. High temperatures during flowering and pod fill coincided with moisture stress to reduce the yield potential significantly at many sites. A late frost event in August also had some damaging effect on the trials at Snowtown, Kadina and Willamulka although this was generally relatively low and confined to earlier maturing varieties.

Trials at Melton and Maitland produced excessive biomass production under favourable winter conditions, which in turn caused them to hay off during the hot spring conditions. The Melton trial was also impacted by a moderate level of botrytis grey mould (BGM). No significant level of disease was observed at the other sites.

There was a low amount of weed competition present at Yeelanna and Riverton. Weed control continues to be a constraint to lentil production, with limited suitable, safe and reliable herbicide control options.

Careful paddock selection and effective management strategies are essential when growing lentils. Some damage from the use of pre-emergent herbicides was seen at the Mallala site.

Similar damage was seen in 2012 and 2014, highlighting the risk involved when using pre-emergent herbicides on lentils, particularly on lighter textured, high pH soils.

PBA Jumbo2 has once again proved to be the highest yielding lentil variety in South Australia, demonstrating its broad adaptation with yields equal or greater than the site mean at majority of the trial sites.

Its combination of good early vigour levels, tall plant type and

ability to mature quickly despite its mid maturity rating appear to have enabled PBA Jumbo2 to handle the dry spring conditions of recent seasons relatively well. PBA Jumbo2 has good resistance to both major lentil diseases, BGM and ascochyta blight (AB).

It is a large seeded variety and is well suited to the post-harvest removal of small broadleaf weed seeds. Early maturing varieties PBA Bolt and PBA Blitz also

performed on top in 2015, suffering less from the late season moisture stress than later maturing varieties.

PBA Bolt performed above the site mean at all trials except for Maitland where perhaps it hayed off under the dry finishing conditions.

The poorest performance for PBA Blitz came at the late season and severely droughted site of Mundulla, where perhaps it suffered from a lack of winter biomass production as often seen in the cooler environments of Victoria.

The imazethapyr resistant variety PBA Hurricane XT was 15% lower yielding than PBA Jumbo2, equaling the yields of Nugget, but 24% higher than PBA Herald XT across all sites.

PBA Hurricane XT is the highest yielding of the small red lentil varieties, 13% higher than Nipper. It has a reasonable disease resistance profile with a moderate resistance rating to AB and a moderately resistant/moderately susceptible rating for BGM.

Two green lentil varieties PBA Giant and PBA Greenfield were released in Australia in 2014. These varieties offer an alternative to the green standard variety Boomer, as well as offering growers different marketing opportunities to red lentils.

PBA Greenfield yielded 8-9% higher than Boomer and the red lentil Nugget, while PBA Giant yielded 5 and 6% higher than Nugget and Boomer respectively. PBA Greenfield and PBA Giant yielded 7 and 9% lower than PBA Jumbo2, respectively ■

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# Lentils

SA Lentil Variety Trial Yield Performance: 2015 and Long term (2009-2015) Average Across Sites (as a % of site mean).		YORKE PENINSULA												SOUTH EAST			MURRAY MALLEE			LOWER EYRE PENINSULA															
		MID NORTH						2015						2009-15			2015			2009-15			2015			2009-15									
		Variety	Laura	Mallala	River-ton	Snow-town	% site mean	Trial #	Kadina	Mait-land	Mel-ton	Min-laton	Willa-mulka	% site mean	Trial #	2009-15	Mun-dulla	% site mean	Trial #	2015	Lame-roo	% site mean	Trial #	2015	Yee-lanna	% site mean	Trial #	2009-15	Yee-lanna	% site mean	Trial #				
Aldinga					95	5						94	8																						
Boomer	88	90			92	21	89	99	87	91		93	28	91	90	5																			
Nipper	84	74	85	64	89	26	80	81	84	83	80	91	33	96	88	7																			
Northfield	80				86	9	87		82			86	15																						
Nugget	101	84	99	80	95	26	101	95	81	91	97	95	33	99	92	7																			
PBA Ace	98	101	97	95	104	26	113	102	78	98	109	103	33	93	108	7																			
PBA Blitz	102	102	99	101	100	26	110	115	102	108	108	102	33	92	96	7																			
PBA Bolt	104	101	105	107	102	26	102	94	99	104	104	97	33	117	107	7																			
PBA Bounty					100	15						99	19		98	3																			
PBA Flash	105	103	100	93	103	26	110	105	96	103	105	102	33	93	101	7																			
PBA Giant	105	101			95	11	94	97	80	99		92	15	104	96	2*																			
PBA Greenfield	103	104	104	86	103	16	96	102	106	99		105	20	97	103	3																			
PBA Herald XT	77	80	81	69	85	26	62	80	82	79	78	86	33	69	90	7																			
PBA Hurricane XT	97	80	98	100	100	21	79	88	92	99	93	100	26	93	105	5																			
PBA Jumbo	95	102	99		102	25	93	111	91	98	105	107	33	95	92	7																			
PBA Jumbo2	110	106	107	103	112	18	98	106	100	113	107	114	22	114	117	4																			
<b>Site mean yield (t/ha)</b>	<b>1.60</b>	<b>1.83</b>	<b>2.69</b>	<b>0.78</b>	<b>2.23</b>		<b>0.64</b>	<b>2.09</b>	<b>1.59</b>	<b>1.84</b>	<b>1.55</b>	<b>2.77</b>		<b>0.93</b>	<b>1.44</b>				<b>0.7</b>	<b>1.25</b>			<b>1.09</b>	<b>1.70</b>											
% LSD (0.05)	0.1	0.3	0.3	0.1			0.1	0.2	0.3	0.1	0.1			0.1					0.1				0.2												
Date sown	27/5	15/5	29/5	22/5			20/5	18/5	25/5	22/5	18/5			12/6					22/5				20/5												
Soil type	SL	CL	SL	CL			CL/SCL	SL	SCL/LC	C/SL	SL			SL					SL				SL												
Rainfall (mm)	49/330	44/209	61/342	47/214			19/185	33/301	34/209	50/267	45/202			40/211					71/166				36/302												
J-W/A-O																																			
pH (H <sub>2</sub> O)	6.3	8.5	7.5	8			8	7.6	7	8	8.3			7.2					8.8				8.3												
Previous crop	Barley	Wheat	Barley	Oat/Hay			Wheat	Wheat	Barely	Wheat	Wheat			Wheat					Wheat				Wheat												
Site stress factors	ht,dl	dl,ht,hd	ht,w	ht,de,dl,fr			ht,de,dl,fr	ht,ho	bgmM,dl,ht,ho	dl,ht	dl,fr,ht			fr,ht,dl					fr,ht,dl				ht,w												

**Soil type**

S = sand, C = clay, L = loam, H = heavy, M = medium, Li = light, F = fine, Z = silt, Lst = Limestone, / = over

**Site Stress Factors**

de = pre flowering moisture stress, fr = reproductive frost damage, dl = post flowering moisture stress, ht = high temperatures during flowering/pod fill, hd = herbicide damage (pre em.), ho = hay off due to excessive biomass

bgmL = botrytis grey mould (low), bgmM = botrytis grey mould (moderate), bgmMS = botrytis grey mould (moderate to severe), bgmS = botrytis grey mould (severe), ab = ascochyta blight (low), hclM = herbicide damage metribuzin

w = weed competition moderate, wl = temporary waterlogging, phwd = preharvest weather damage, pe = poor establishment, nbw = native bud worm, fv=vegetative frost damage, cv = trial has high variability use caution

\* Varieties have only had limited evaluation at these sites, treat results with caution

**Data source:** GRDC, PBA & NVT (long term data based on weighted analysis of sites and courtesy National Statistics Program)