



New varieties PBA Zahra and PBA Samira best yields across the state

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New variety PBA Zahra was the highest yielding released faba bean evaluated in NVT and PBA faba bean breeding trials across South Australia in 2015. It was closely followed by PBA Samira and Farah.

Eight NVT faba bean trials and seven PBA breeding trials were conducted across South Australia in 2015. In addition a specialty broad bean trial was conducted at Millicent in the South East, where the short finish to the season resulted in lower than average yields. Results from Cockaleechie PBA faba bean breeding site did not meet the standard required by NVT protocols for public release of data in 2015.

Seeding of faba bean trials started on 1 May at Minlaton, with all trials sown by 22 May, except for Millicent (10 June). Establishment was largely good across all sites.

The Eyre Peninsula, Mid North/Central and Mallee experienced above average April rainfall. This was followed by below average rainfall for May through to July on the Eyre Peninsula and Mid North, with good rains received in August.

The Mallee had average rainfall for May and July, June being well-below average and August below average.

The South East had an exceptionally dry growing season. Overall the South East April to August rainfall was well-below average. The entire state experienced a dry spring, with below average rainfall in September and well-below average in October. The Mallee and South East experienced frost and extreme heat conditions throughout the flowering period.

Average yields at South Australian faba bean NVT and breeding sites ranged from 0.39 t/ha at Wolseley to 2.7 t/ha at Millicent in 2015. Across the state all average site yields were below long term averages, a consequence of growing conditions.

Yields of new varieties PBA Samira and PBA Zahra have averaged approximately 5-10 % more than current varieties in most regions. In 2015 yields of both varieties were lower than long-term trends, due to drought in spring, but generally their overall yields were greater than current varieties.

New release PBA Zahra had a 1 % increase in yield compared to PBA Samira and Farah when averaged across the state. It had its greatest advantage at Millicent, where it was 135% of site mean, demonstrating its suitability to high-yielding environments. Across the state PBA Zahra has the highest long-term average at all sites.

PBA Zahra and PBA Samira were the top two varieties on the



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Upper Eyre Peninsula and York Peninsula, out yielding Farah at these sites. As in 2014, when averaged across the state PBA Samira failed to gain any advantage over Farah, but it did have an advantage at Millicent (13 % yield increase) and Lameroo (6 % yield increase).

The average Fiesta VF yield across the state was below that of PBA Zahra, PBA Samira and Farah.

Nura and PBA Rana showed similar yield performance to each other, with Nura being the higher yielder of the

two. PBA Rana 2015 yields tend to be the lowest of all varieties, consistent with long term results, however its performance tends to improve at higher rainfall sites in the South East and Mid North. PBA Zahra has similar large seed size and seed size distribution to that of PBA Rana and should fit into the existing PBA Rana marketing category.

A new pathotype of *Ascochyta* blight was identified in the mid-north of SA in 2013. This pathotype, Pathotype 2, was not recorded in any other district in 2015. Nura and PBA Samira are resistant to both Pathotype 1 and Pathotype 2 (Pathotype 1 found across the state and the new Pathotype 2 found in the mid-north), whereas Farah has been compromised and responds the same as Fiesta VF to Pathotype 2. PBA Rana and PBA Zahra are resistant to Pathotype 1 only. There was no seed staining due to *Ascochyta* blight in 2015.

There was limited chocolate spot in 2015, due to dry seasonal conditions; however there was disease development on the Lower Eyre Peninsula. There was no significant Pea Seedborne Mosaic Virus (PSbMV) seed staining in the trials in 2015.

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Faba beans

SA Faba Bean Variety Trial Yield Performance (2015 and predicted regional performance, expressed as % of site average yield)		Upper Eyre Peninsula				Yorke Peninsula				Mid North/Central				Mallee				South East																	
		Lower Eyre Peninsula		Upper Eyre Peninsula		2015		Long term average across sites		2015		Long term average across sites		2015		Long term average across sites		2015		Long term average across sites															
Variety	Cock-alee-chie	t/ha	% of Site Mean	No. Trials	Lock t/ha	% of Site Mean	No. Trials	Maitland	No. Trials	2015	Maitland	No. Trials	% of Site Mean	No. Trials	Laura Pinery	Sadleworth	Tarlee	Free-ling	Strath-albyn	t/ha	% of Site Mean	No. Trials	2015	Lameroo	t/ha	% of Site Mean	No. Trials	2015	Keith	Woolley	Booleen	Milli-cent	t/ha	% of Site Mean	No. Trials
Farah		2.15	98	10	91	1.62	97	5	100	95	3.53	100	16	115	93	98	103	102	101	2.73	99	37	101	1.52	103	8	105	102	96	94	2.81	101	36		
Fiesta VF		2.15	98	10	90	1.60	97	5	99	94	3.51	100	16	104	98	93	90	100	99	2.74	99	37	98	1.52	103	8	106	103	100	100	2.83	102	35		
Nura		2.14	97	10	85	1.59	96	5	97	96	3.55	101	16	94	87	94	102	94	91	2.68	97	37	82	1.56	105	8	96	72	57	88	2.63	95	36		
PBA Rana		2.06	94	10	86	1.48	89	5	82	88	3.23	92	16	78	76	89	80	90	81	2.59	94	37	89	1.36	92	8	87	69	110	90	2.60	94	36		
PBA Samira		2.27	103	4	100	1.66	100	4	105	100	3.64	103	8	94	90	94	102	98	95	2.92	105	21	107	1.58	107	4	104	141	97	107	2.95	106	20		
PBA Zahra	No results released	2.31	105	4	97	1.68	101	4	108	99	3.76	107	8	105	93	104	82	92	95	3.03	109	21	88	1.61	109	4	88	71	92	135	3.03	109	19		
Site av yield (t/ha)		2.20			1.13	1.66			2.47	2.32	3.52			2.13	1.99	2.29	1.94	1.78	1.76	2.77			0.85	1.48		1.35	0.39	0.81	2.7	2.78					
LSD (0.05) (t/ha)					11				6	4				5	12	14	14	13	10				15				13	16	23	23					
Date Sown					7 May				18 May	1 May				3 May	6 May	7 May	4 May	11 May	22 May				6 May				21 May	22 May	18 May	10 June					
Soil Type					S				CL/LC	SCL				CLS/LC	-	-	SL	-	-				CL				SL	SL	CL	peat					
pH(water)					5.9				7.6	8.0				6.3	-	-	7.9	-	-				8.8				7.2	7.8	8.1	7.9					
J-M/A-0 rain (mm)					25/229				33/301	50/267				49/331	-	-	75/322	-	-				55/164				48/194	51/221	64/284	58/381					
Previous Year Crop					wheat				wheat	wheat				barley	-	-	wheat	-	-				wheat				wheat	wheat	wheat	pasture					
Site Stress Factors					-				-	-				-	-	-	-	-	-				dl, htg				de, dl	de, dl	dl						

Abbreviations

Soil Type: S - Sand, C - Clay, L - Loam

Stress Factors: fr - frost damage (reproductive), de - pre-flowering moisture stress, dl - post-flowering moisture stress, htg - high temperature at grain fill

Data source: SARDI/GRDC, NVT and PBA Australian Faba Bean Breeding Program.

2008-2015 MET data analysis by National Statistics Program.