18GE12 Lentil VT

Authors	Mark Seymour
Location of trial	Mingenew

Summary (Key messages)

- PBA Hallmark XT – the new imi tolerant variety released in 2018 –performed well at Mingenew matching the yield of all other released varieties.
- Over the longer term PBA Hallmark XT has outperformed PBA Hurricane XT and growers interested in IMI tolerant lentils are encouraged to try this variety on their farm

Background

Lentil variety trials testing 10 released varieties and 20 unreleased genotypes (data not shown here) sown in April in key locations in WA.

Aim

Identify suitable lentil varieties for WA growers.

Trial Details

- Property: Mingenew Irwin Heavy Land Site Latitude S 29.19 Longitude E 115.44
- Growing Season rainfall (GSR, April to October) = 278 mm
- Soil type: Clay (0.87% organic carbon, pH 7.3)
- Sowing date April 20
- Herbicides – IBS 1.4 kg/ha Terbyne Xtreme (terbuthlazine) + 2 L/ha Treflan, PostEm (14th June) 100 mL/ha Brodal, 10th July 1 L/ha Select + Hasten
- Harvested 25th October

Treatments

Trial design was row column design (Blocking = Rep+ColRep) 30 gentoypes and 3 replicates. All seed was tested for seed size and seed rates adjusted to aim for 100 plants/m^2.

Results

With dry conditions at sowing, seed was sown at 7cm to chase moisture at depth. On this clay soil this led to some sealing of the surface and lentils struggled to emerge evenly. A nearby chickpea trial sown on the same day and at the same depth emerged much more evenly. Because of the uneven emergence, we used plant establishment counts as a covariate in our statistical analysis. Despite the tough start the lentils produced good yields of 1 to 1.4 t/ha.

No released variety produced yields higher than our standard variety PBA Bolt (Table 1), whilst one of the breeding lines (data not shown) did out yield PBA Bolt at Mingenew in 2018. The new variety PBA Hallmark XT produced similar yields to PBA Hurricane XT at Mingenew. Over the last 5 years, PBA Hallmark XT appears to be a more reliable variety than PBA Hurricane XT (Figure 1) and produces medium sized seed compared to PBA Hurricane XT's smaller seed (Table 1 and Figure 2). In southern areas, we have observed PBA Hallmark XT handles the cooler conditions slightly better than PBA Hurricane XT, and the plots are more even.

Table 1 Lentil variety experiment, Mingenew 18GE12 (Only results from released varieties are shown here

Variety	GY		% of Bolt	1000sw	
PBA Hallmark XT	1395	bcdefgh	104	41	ijklm
NUGGET	1048	a	78	39	fghi
PBA ACE	1420	cdefgh	105	42	mno
PBA BLITZ	1240	abcdef	92	45	p
PBA BOLT	1346	bcdefg	100	42	lmno
PBA FLASH	1360	bcdefg	101	45	p
PBA GREENFIELD	1220	abcdef	91	51	q
PBA HERALD XT	1104	ab	82	31	a
PBA HURRICANE XT	1217	abcdef	90	33	b
PBA JUMBO2	1185	abcd	88	44	op
Mean	1331		99		
P	0.024			<0.001	
LSD	295		22	2	

Values followed by the same letter are not significantly different

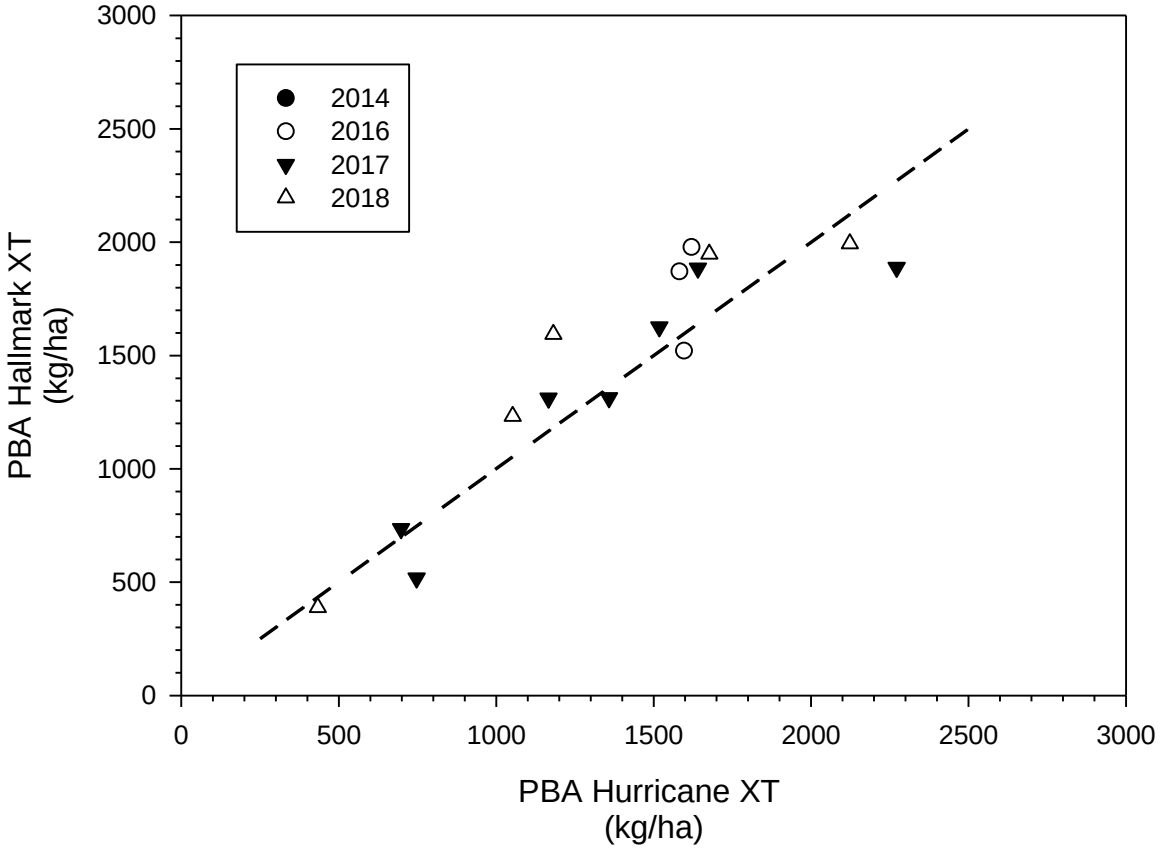

Figure 1. Seed yield comparison between PBA Hurricane XT and PBA Hallmark XT in experiments conducted by DPIRD and Pulse Breeding Australia (PBA) in WA from 2014 to 2018. Dashed line indicates 1:1.

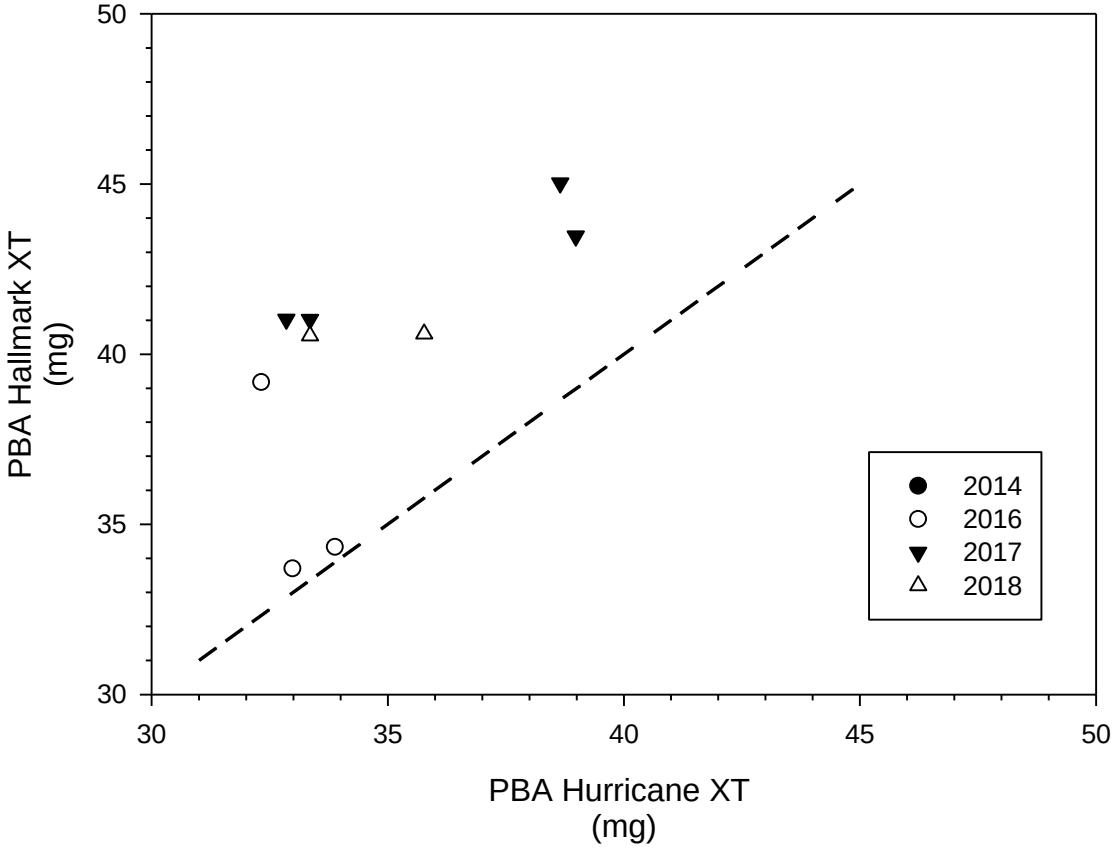

Figure 2. Seed size (mg) comparison between PBA Hurricane XT and PBA Hallmark XT in experiments conducted by DPIRD and PBA in WA from 2014 to 2018. Dashed line indicates 1:1.

Acknowledgements

This experiment is one of a series conducted throughout WA as part of the GRDC/DPIRD co-funded project “Tactical Break Crop Agronomy in Western Australia”. Pulse Breeding Australia (PBA) provided seed for experiments. Thanks to the Geraldton TSU for trial management and MIG for their continued support in providing trial sites. Stephanie Boyce and Pam Burgess provided technical assistance to ensure all treatments and measurements occurred in a timely and accurate fashion.

Links

For other reports related to this trial see NVT online or visit GRDC’s on-farm trial web site at https://www.farmtrials.com.au

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