

18ME41 Lentil VT

Authors

Mark Seymour

Location of trial

Merredin

Summary (Key messages)

- Timely harvest can make a big difference to yields when lentils produce high biomass.
- 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: Merredin Research Station Latitude S 31.48, E118.28
- Growing Season rainfall (GSR, April to October) = 218 mm
- Soil type: Clay Loam (0.45% organic carbon, pH 7.2)
- Sowing date April 27
- Herbicides – IBS 0.86 kg/ha Terbyne Xtreme (terbuthlazine) + 1 L/ha Treflan, PostEm, 19th July Clethodim
- Machine Harvested 13th November, hand harvested 22nd October

Treatments

Trial design was row column design (Blocking = Rep+ColRep) 30 genotypes and 3 replicates. All seed was tested for seed size and seed rates adjusted to aim for 100 plants/m².

Results

Crop growth at Merredin was excellent all year. On average, 4.9 t/ha of dry matter was produced. Hand harvest indicated average seed yields of 2.2 t/ha, whilst delays in machine harvesting led to some losses, particularly in high biomass varieties, and average machine harvest yields of 1.4 t/ha. Hence, we have decided to present the hand harvest results. Four breeding lines (data not presented) and PBA Biltz produced higher yields than our standard variety PBA Bolt (Table 1). PBA Blitz was one of the earlier flowering released lines which may have benefited it in this low rainfall site. PBA Jumbo2 also produced higher yields than PBA Bolt at Merredin 2018, which is in contrast to our other sites in 2018. PBA Bolt is one of the varieties known to have good machine harvest ability, so using hand harvest may have benefited other varieties more so than PBA Bolt.

The new variety PBA Hallmark XT (tested as CIPAL1422) produced similar yields to the other IMI tolerant lentils at Merredin in 2018. 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, Merredin 18ME41 (Only results from released varieties are shown here)

Variety	Seed yield (hand harvest, kg/ha)	% of Bolt	1000SW	50% flowering
PBA Hallmark XT	1994	102	41	3-Sep
NUGGET	1720	88	42	9-Sep
PBA ACE	2336	120	43	8-Sep
PBA BLITZ	2748	141	49	24-Aug
PBA BOLT	1950	100	42	1-Sep
PBA FLASH	2109	108	49	8-Sep
PBA GREENFIELD	2386	122	55	6-Sep
PBA HERALD XT	1645	84	32	11-Sep
PBA HURRICANE XT	2123	109	36	1-Sep
PBA JUMBO2	2477	127	48	2-Sep
Mean	2224	91	42	
P	0.007		<0.001	
LSD	538	15	2	

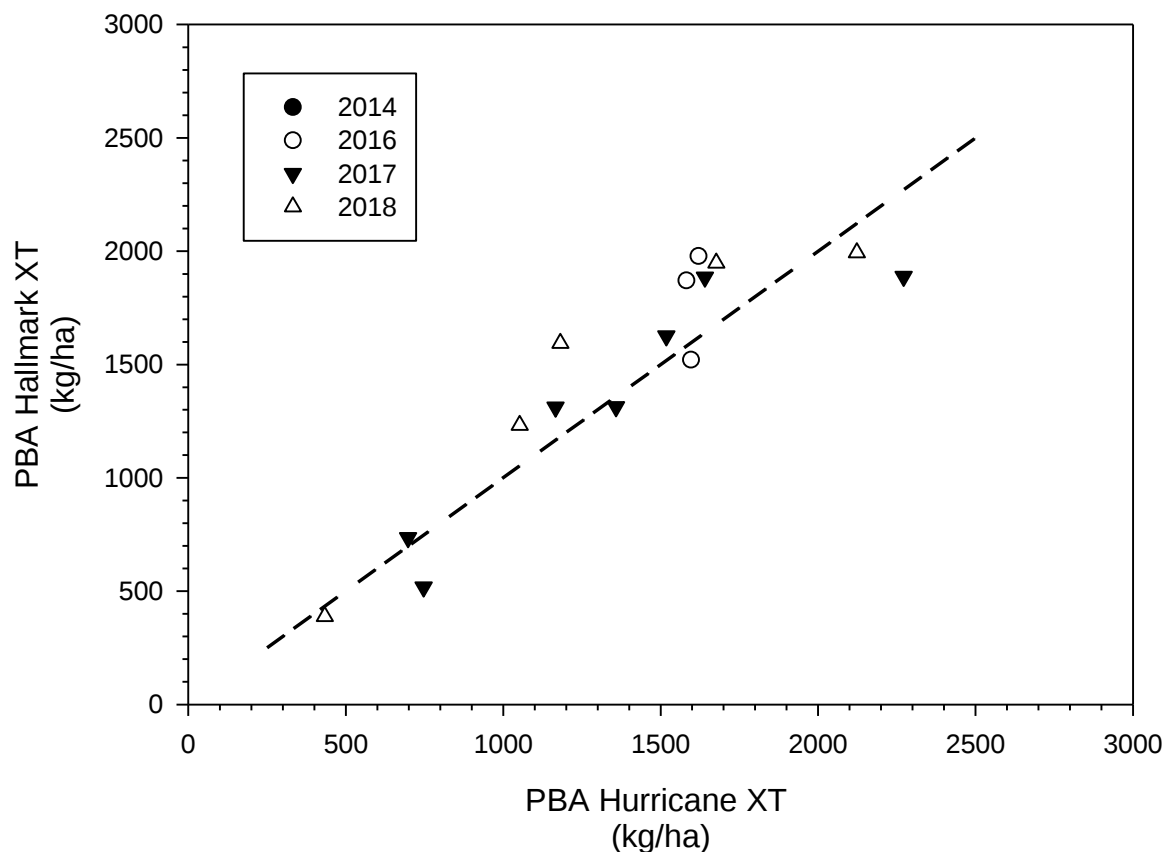


Figure 1. Seed yield comparison between PBA Hurricane XT and PBA Hallmark XT in experiments conducted by DPIRD and Pulse Breeding Australia (PBA) in WA from 2014 to 2018. Dashed line indicates 1:1.

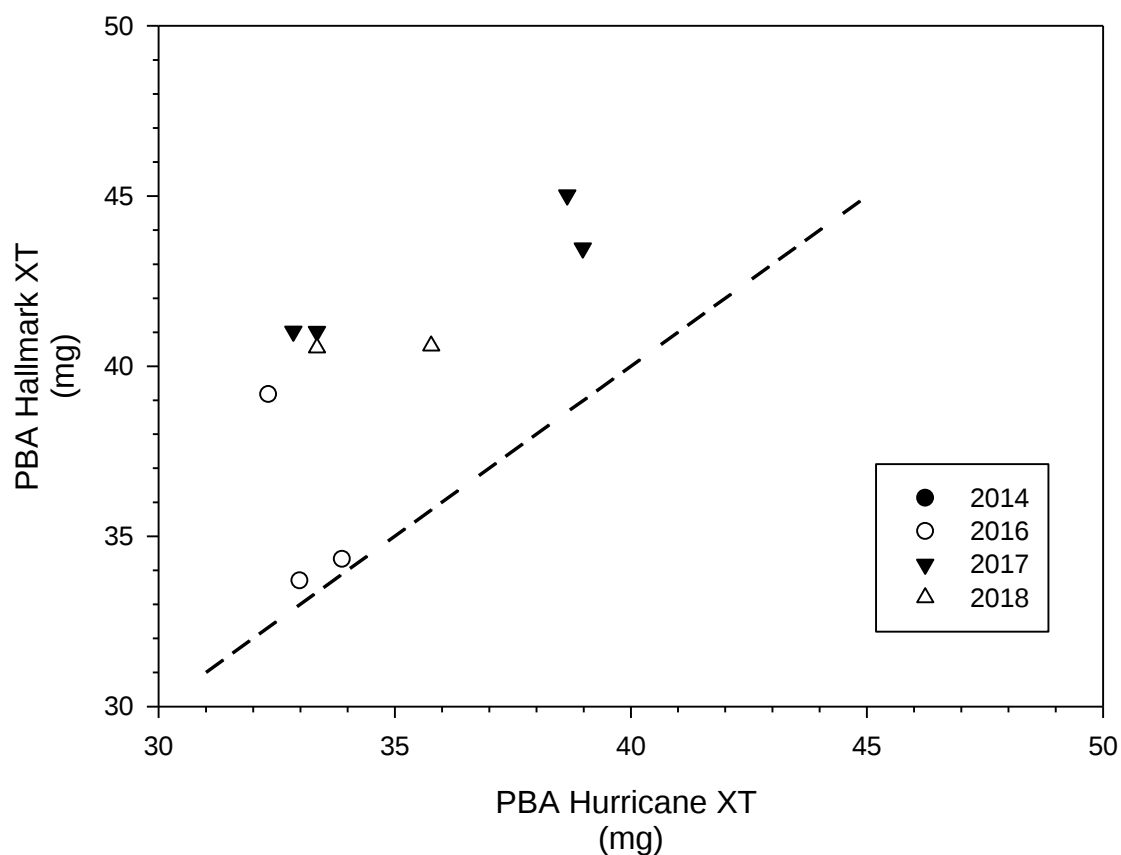


Figure 2. Seed size (mg) comparison between PBA Hurricane XT and PBA Hallmark XT in experiments conducted by DPIRD and PBA in WA from 2014 to 2018. Dashed line indicates 1:1.

Acknowledgements

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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>

For more information contact

Mark Seymour, Senior Research Officer, Esperance on 90831 143.

Email: mark.seymour@agric.wa.gov.au