

## 18NO24 Retaining Open-Pollinated (OP) canola seed on-farm

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**Location of trial** Cunderdin

### Summary (Key messages)

- At Cunderdin in 2018 hybrid TT's sown at the same target density produced similar yields to OP TT.
- With low seed costs, ATR Bonito retained for 2, 3 or 4 years produced equal highest gross margins of over \$600/ha - Comparable to the high yielding hybrid Nuseed HyTTech Trophy.
- Retaining ATR Bonito seed 'on-farm' for 1, 2, 3 or 4 years produced similar yields, oil and higher gross margins than purchasing new OP seed.
- At our three sites in 2018, using ATR Bonito seed stored for 4 years produced plants lacking in vigour and overall poorer performance than growing out and retaining seed each year or purchasing new commercial seed.

### Background

WA canola growers in low rainfall areas mostly grow OP TT canola. However, the rate of release of OP TT canola has slowed down in recent years. Growers are asking, "How long can I keep using my existing OP TT seed?"

### Aim

To evaluate if retaining OP canola seed leads to reduced yield or oil.

### Trial Details

- Property: Syme's, WANTFA field site 31.564218° S, 117.269321° E
- Growing Season rainfall (GSR, April to October) = 170 mm
- Soil type: Sand (0.9% organic carbon, pH 6.3)
- Sowing date May 1
- Herbicides – IBS 1.5 L/ha Trifluralin 480EC + 1 kg Terbyne Xtreme (87.5% a.i.), PostEm, 25<sup>th</sup> June Lontrel 150 g/ha, 29<sup>th</sup> June July 500 mL/ha Select (clethodim), July 6<sup>th</sup> 1 kg Atrazine 900DWG + 100 g/ha Lontrel
- Machine Harvested 13<sup>th</sup> November

### Treatments

Trial design was row column design (Blocking = Group/(Rep+ColRep), Treatments were Type/VarietyOp/(VarietyHyb\*Density) where type – OP or hybrid, Density = target density of 25 plants/m<sup>2</sup> for hybrids or 50 plants/m<sup>2</sup> for OP's and hybrids.

All seed was tested for seed size and seed rates adjusted to aim for target density assuming hybrids would have a field establishment rate of 65% and OP's 50%.

**Table 1 List of treatments and seeding rate information**

Treatment name	Seed rate (kg/ha)	Germ	Seeds per kg	Seed size (mg)	Seeds sown per sqm	Viable seeds sown per sqm
<b>ATR Bonito Commercial 2017</b>	5.2	95	204,082	4.9	105	100
<b>ATR Bonito Commercial 2014</b>	4.9	89	229,885	4.4	112	100
<b>ATR Bonito Retained 1 year Graded</b>	6.2	81	198,807	5.0	123	100
<b>ATR Bonito Retained 2 years Graded</b>	7.1	71	198,020	5.1	141	100
<b>ATR Bonito Retained 3 years Graded</b>	5.9	83	204,082	4.9	120	100
<b>ATR Bonito Retained 4 years Graded</b>	6.8	75	196,078	5.1	133	100
<b>Hyola 350TT 25 plants/m<sup>2</sup></b>	3.3	91	129,032	7.8	42	38
<b>Hyola 350TT 50 plants/m<sup>2</sup></b>	6.6	91	129,032	7.8	85	77
<b>InVigor T 4510 (Bayer) 25 plants/m<sup>2</sup></b>	2.2	95	183,486	5.5	40	38
<b>InVigor T 4510 (Bayer) 50 plants/m<sup>2</sup></b>	4.4	95	183,486	5.5	81	77
<b>Nuseed HyTTech Trophy 25 plants/m<sup>2</sup></b>	2.1	95	196,078	5.1	40	38
<b>Nuseed HyTTech Trophy 50 plants/m<sup>2</sup></b>	4.1	95	196,078	5.1	81	77
<b>Pioneer 44T02 TT 25 plants/m<sup>2</sup></b>	1.7	96	240,964	4.2	40	38
<b>Pioneer 44T02 TT 50 plants/m<sup>2</sup></b>	3.3	96	240,964	4.2	80	77

## Results

Once the season broke at Cunderdin in late May 2018, conditions were excellent for growth resulting in average yield of canola of 1.6 t/ha. Highest yielding treatment was Nuseed HyTTech Trophy sown at 50 plants/m<sup>2</sup> which produced 1.95 t/ha, whilst ATR Bonito produced higher oil than all hybrid treatments.

Hybrids sown at 25 plants/m<sup>2</sup> produced similar yields of 1.6 t/ha to the OP variety ATR Bonito sown at 25 plants/m<sup>2</sup>. At Cunderdin in 2018, hybrids produced higher average yields of 1.7 t/ha at higher target densities of 50 plants/m<sup>2</sup>.

With low seed costs, ATR Bonito retained for 2, 3 or 4 years produced equal highest gross margins of over \$600/ha. Comparable to the high yielding hybrid Nuseed HyTTech Trophy.

During the year, we observed canola sown from Commercial seed of ATR Bonito kept in storage from 2014 to have less vigour in the field at our three sites and produced generally lower yields and returns compared to other ATR Bonito treatments. Thus, farmers should be wary of using seed stored on-farm for extended periods, but continue to use OP seed retained from the previous years harvest.

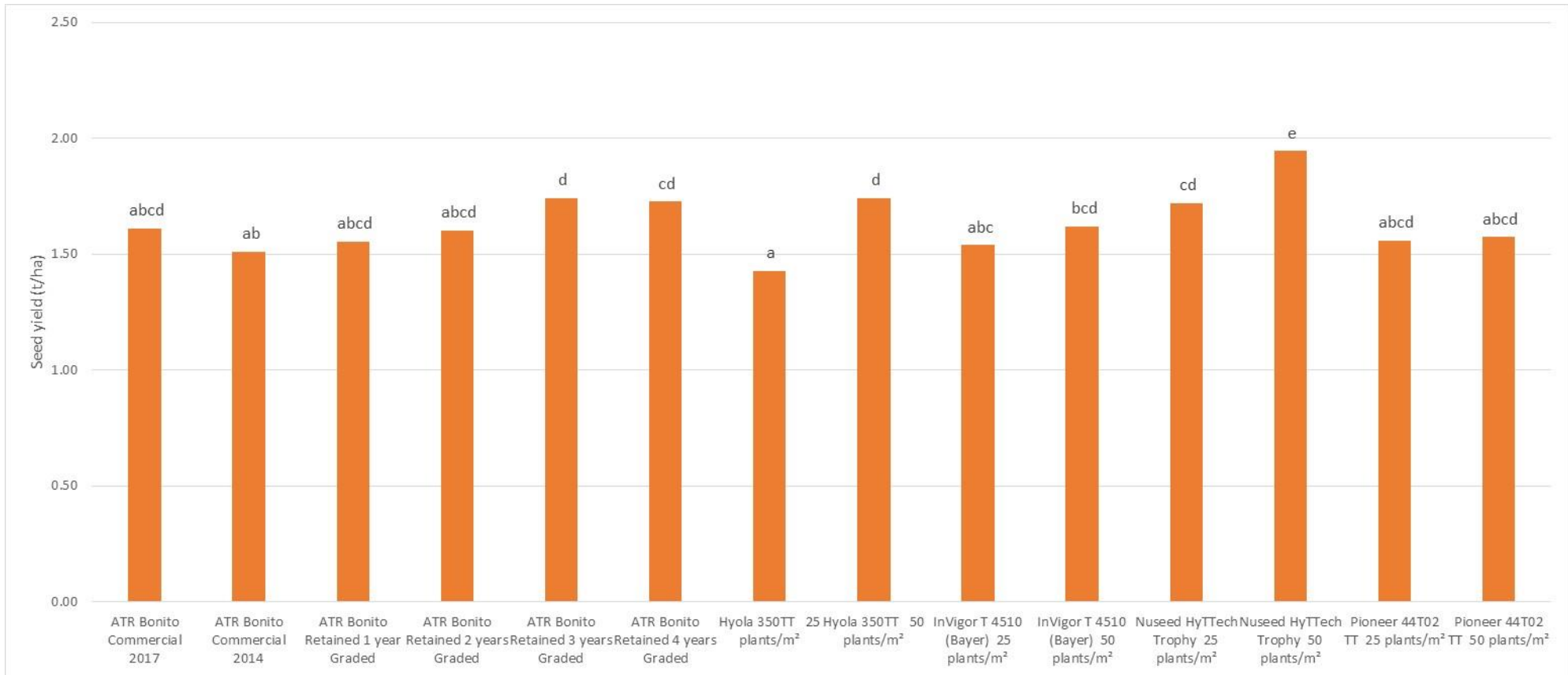
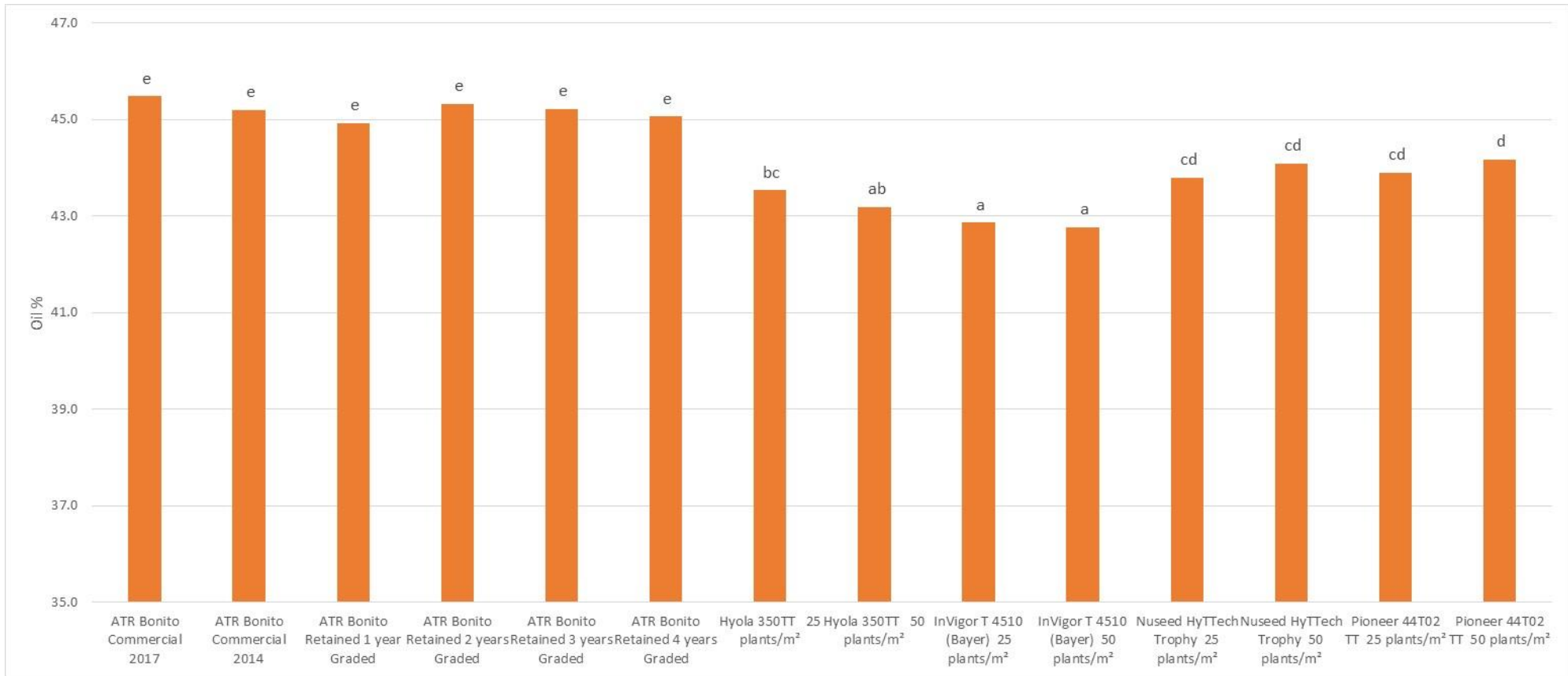
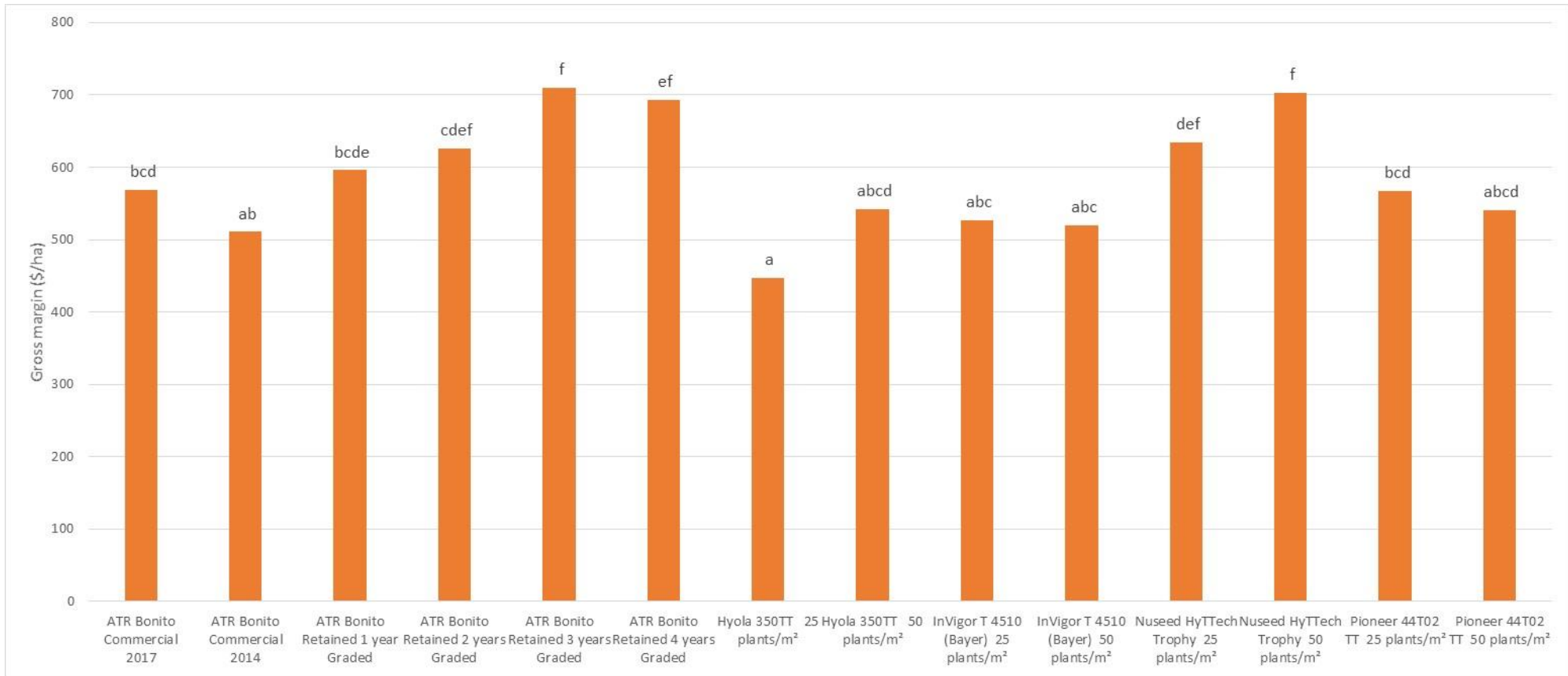


Figure 1 Seed yield (t/ha) of canola from retained seed experiment at Cunderdin in 2018 (18NO24).



**Figure 2 Oil % of canola from retained seed experiment at Cunderdin in 2018 (18NO24).**



**Figure 3** Gross margin (\$/ha) of canola from retained seed experiment at Cunderdin in 2018 (18NO24).



## 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". Thanks to the Northam TSU for trial management, whilst Salzar Rahman for 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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