

DAW00277

Tactical Break Crop Agronomy in Western Australia

Comparison of canola varieties with delayed direct harvest at Gibson, (15ED07)

Authors

Mark Seymour

Location of trial

Esperance Downs Research Station (EDRS) - Gibson

Summary (Key messages)

- The Podguard line AN14R9012 appears to be a viable option for direct harvesting and delayed harvesting of canola. It does not appear to shed seeds from pods to the same degree as other varieties.
- Under extreme conditions AN14R9012 can drop whole unopened pods and therefore lose yield.

Background

Farmers are shifting from swathing to direct harvesting of canola. This allows them to speed up their operations. It is unclear if all cultivars chosen by growers are suitable for direct harvesting. Whilst cultivars are marketed as suitable for direct harvesting, there appears to be no systematic testing of cultivars to determine if these claims stack up. In particular it is unknown if some cultivars shed more seed prior to harvest than others. If farmers move to direct harvesting this could become an issue.

Bayer have just released a variety (IH51 RR) into the Australian market which has their podguard trait. This is a non GM trait which is reputed to virtually eliminate shedding of seed out of the pods of canola. This trial includes another Bayer Podguard line and this experiment will provide a source of independent testing of the trait in WA.

Aim

To determine if canola cultivars vary in their rates of shedding

Trial Details

- Property: Esperance Downs Research Station (EDRS) – Gibson, Paddock W14
- Agzone 6, Growing Season rainfall (GSR, A-O) = 352 mm, GSR + stored water (estimate) = 387 mm.
- Soil type: Fleming sand/duplex (1.46% organic carbon)
- Paddock rotation 2015 Canola, 2014 Wheat, 2013 Pasture, 2012 Pasture/oats sown for grazing, 2011 Pasture, 2010 Barley, 2009 Canola
- Sowing date April 28 14 with Impact in-furrow 400 mL/ha

Trial Details

- Fertiliser 400 kg/ha of gypsum (17% Ca, 14% S) and 120 kg/ha of Muriate of Potash topdressed over whole site before seeding, 110 kg/ha of Agras No.1 at seeding (16%N, 9.1%P, 14.3%S, 0.06% Zn), 100 L/ha of UAN (32%N) June 9
- Sprays: April 28 – 2 L/ha Treflan + 2 L/ha SpraySeed, May 6 – 80 mL/ha Talstar, June 24 - 100 g/ha Lontrel Granule, 330 mL/ha Select Xtra June 24 plus Hasten 1%; August 18 – 450 mL/ha Prosaro

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Treatment detail

- 12 treatments:
 - 4 cultivars - AN14R9012, IH30 RR, Hyola 404RR and ATR Stingray
 - 3 Harvest times -on time, 3 weeks later and 6 weeks later
- Split plot design – Main plots – times of harvest, sub plots – varieties
 - 4 replicates

Results

At the first harvest on November 4, the podguard variety AN14R9012 had the lowest losses both before and during harvest. ATR Stingray had less shedding prior to harvest than Hyola 404RR and IH30RR – which had highest losses during harvest and highest losses overall.

In-between harvest 1 on November 4 and the second harvest on November 25 we experienced extreme weather events. Fire- and harvest bans were in place so we were unable to conduct our second harvest as planned – two weeks after harvest time 1. On the 17th of November wind gusts of 87 km/hr combined with 40°C temperatures caused widespread catastrophic fires in the Esperance region. Therefore we delayed the second harvest to three weeks after harvest 1 and decided to change harvest 3 to 6 weeks after harvest 1 to allow for an even period between harvests.

Under these extreme weather events all varieties dropped pods and shed seeds between harvest 1 and 2. The podguard line AN14R9012 losses were mostly due to pod drop as we were able to count and weigh unopened pods in the trays below AN14R9012 whilst Hyola 404RR had very low numbers of unopened pods. It would have been interesting to have had swathed treatments to investigate if AN14R9012 would have held onto its pods better within a swath compared to a standing crop.

Between harvest 2 and 3 the crops were exposed to wet weather and associated strong frontal winds gusting at 67-72 km/hr on the 6th and 7th of December. This led to a further loss in yield.

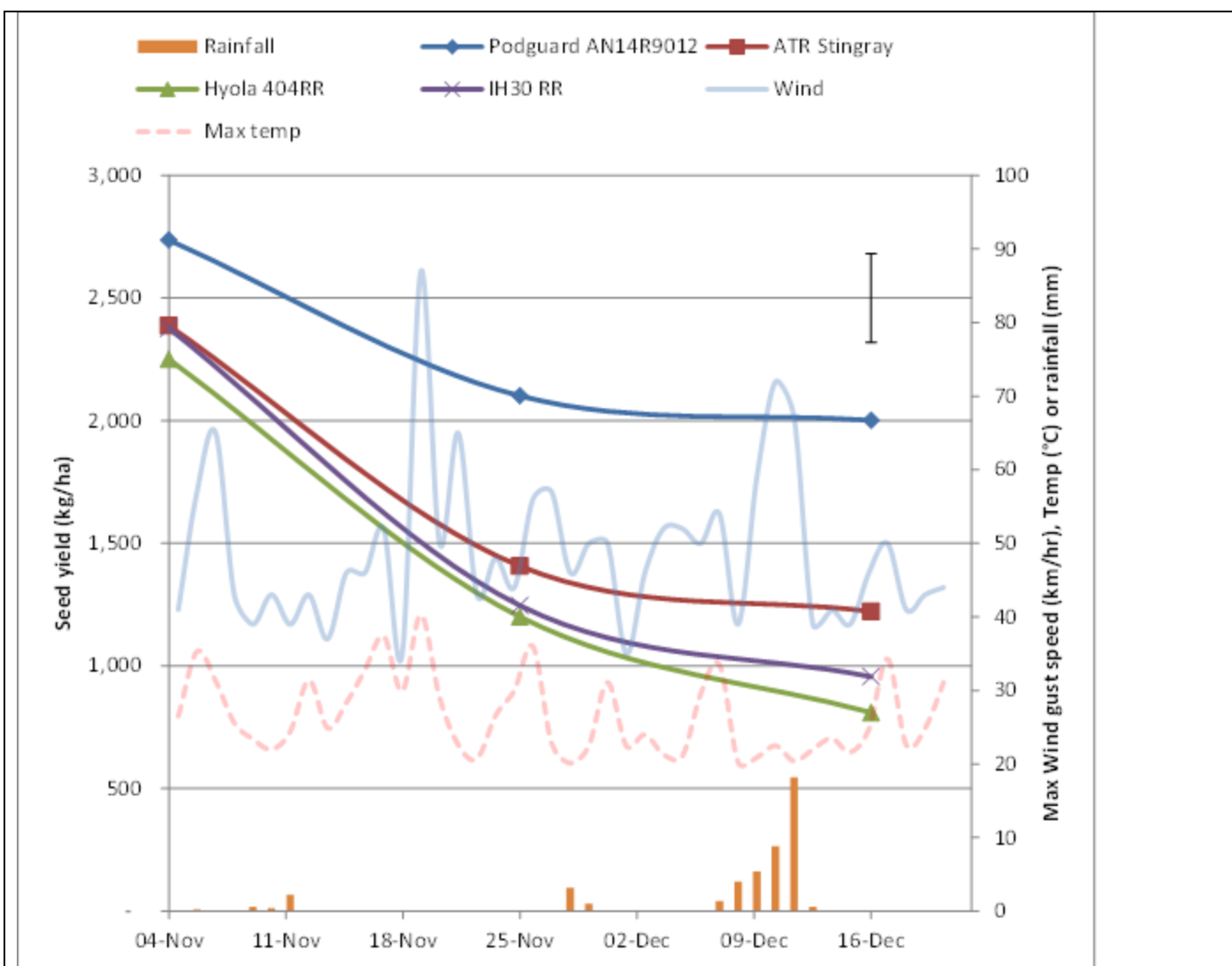


Figure 1 Machine harvested seed yield over time of four canola varieties at Gibson in 2015 (15ED07)

Conclusion

Bayer podguard variety AN14R9012 produced highest yield, equal highest oil and highest oil yield and had the lowest overall loss in yield with delayed harvest of 735 kg/ha, equivalent to a 27% yield loss worth \$385/ha. Hyola 404RR and IH30RR had the highest yield losses of ~ 1.4 t/ha, equivalent to a 60-64% yield loss worth ~ \$750/ha, and ATR Stingray had losses of ~ 1.2 t/ha, equivalent to a 49% yield loss worth \$580/ha.

Acknowledgements

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Links

For other reports related to this trial see DAFWA web site and search 'Trial reports canola 2014'

For more information contact

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

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