DAW00277
Tactical Break Crop Agronomy in Western Australia

14ED11 Comparison of canola varieties with delayed direct harvest, Gibson

Authors	Mark Seymour
Location of trial	Esperance Downs Research Station (EDRS) - Gibson

Summary (Key messages)

- Most canola had acceptable losses prior to harvest, even with delayed harvest.
- The greatest proportion of losses occurred at harvest.
- The podguard variety IH51RR had significantly less losses than other varieties both before and at harvest.

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 IH51 RR and 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 N14
- Agzone 6, Growing Season rainfall (GSR, A-O) = 314 mm, GSR + stored water (estimate) = 324 mm. Thunderstorm dropped 44 mm of rain in one day with associated strong winds on 14th Nov – 3 days prior to the second harvest.
- Soil type: Fleming sand/duplex (1.4% organic carbon)
- Paddock rotation Wheat 2013, sub clover based pasture 2012, sub clover based pasture 2011
- Sowing date May 14
- Fertiliser 400 kg/ha of gypsum (17% Ca, 14% S) topdressed over whole site before seeding, 102

Trial Details

kg/ha of Agras No.1 at seeding (16%N, 9.1%P, 14.3%S, 0.06% Zn), 120 kg/ha of Muriate of Potash and topdressed over whole site 4 weeks after seeding, 103 kg/ha of Urea (46% N) topdressed over whole site on 10th of July; 1 L/ha of Twin Zinc (70% Zn) 4th of July; and 1 L/ha Mantrac (50% Mn) 9th of july; 70 L/ha of UAN (32%N) August 4th..

Treatment detail

- 12 treatments:
  - 4 cultivars - IH51 RR, IH30 RR, Hyola 404RR and ATR Stingray
  - 3 Harvest times -on time, 2 weeks later and 4 weeks later
- Split plot design – Main plots – times of harvest, sub plots – varieties
  - 4 replicates

Results

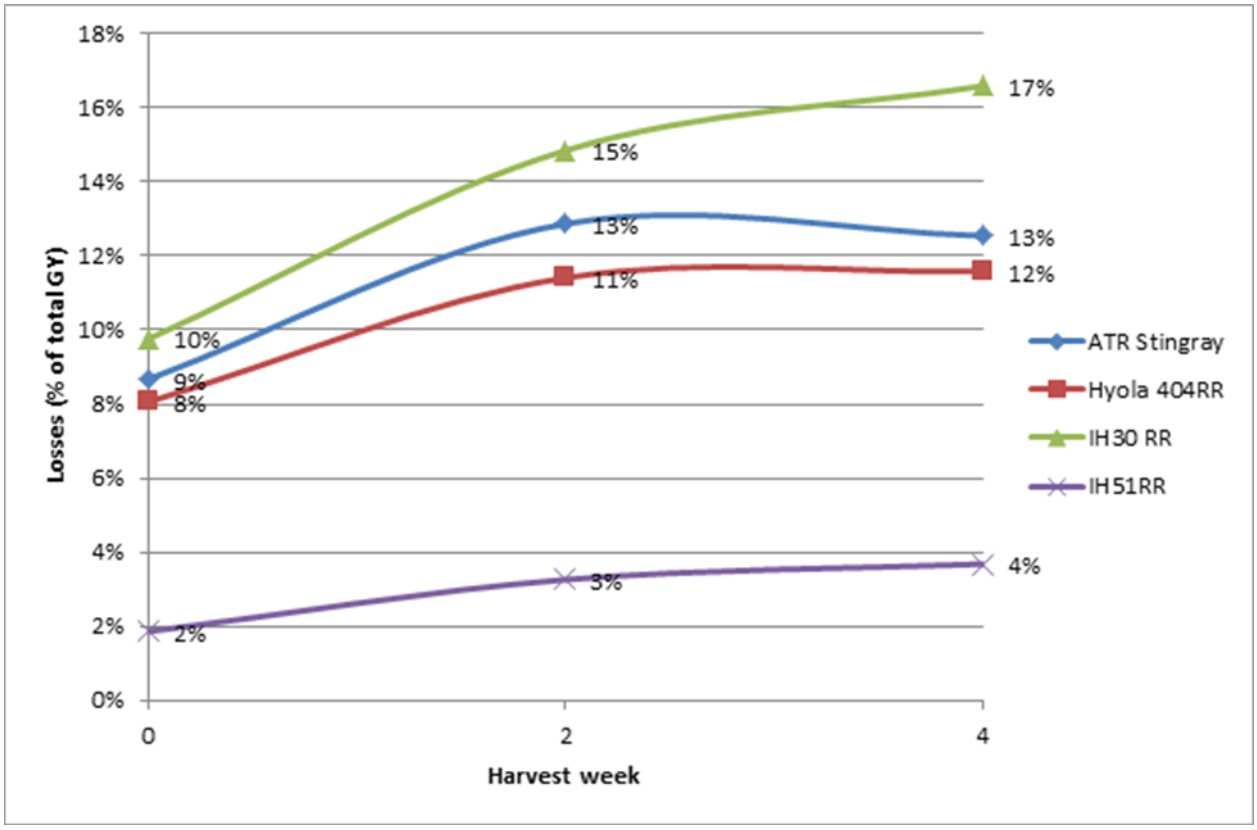

Figure 1 Losses (% of total yield) over time of four canola varieties at Gibson in 2014 (14ED11)

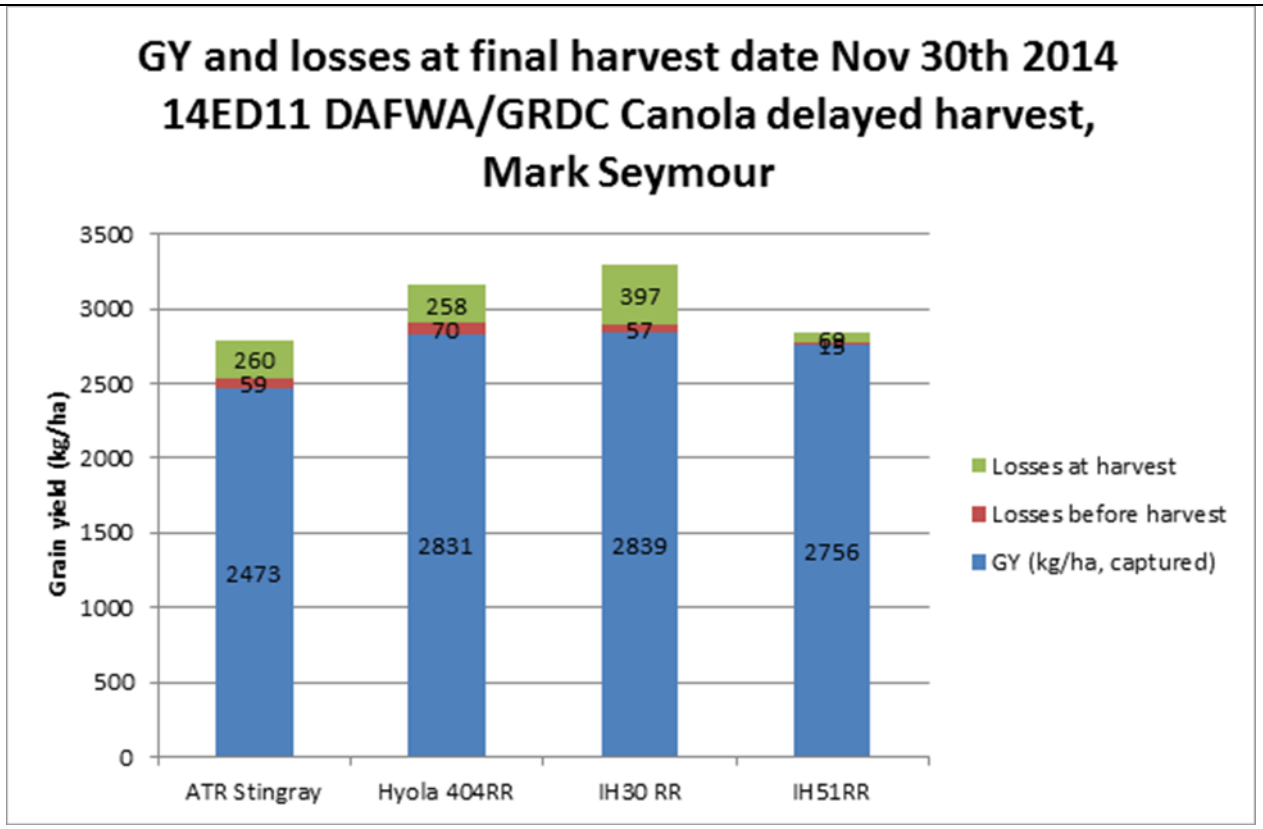

Figure 2 Total grain yield and losses before and at harvest of four canola varieties at the last harvest time (November 30, 2014; 14ED11)

Conclusion

The Bayer podguard variety IH51 RR had lower losses at harvest than other varieties, averaging 3% losses at the latest harvest date compared to 10-14% for the other varieties. Most of the losses of all varieties occurred at harvest. Despite strong winds and rain prior to the second harvest, shedding before harvest was lower than expected, of the order of 15-70 kg/ha (17 to 29% of total losses) with the majority of losses at harvest (~70 to 400 kg/ha). Interestingly the podguard variety did not shed seed out of the pod, but any losses prior to harvest were due to the occasional pod dropping off the plant.

The losses at harvest using the DAFWA small plot harvester are likely to be larger than wider commercial machines (usually less than 150 kg/ha). The reasons for this being we were going slow (3 km/hr) to enable us to stop at the end of the plots, which resulted in the crop building up at the knife and the reel was consequently spending an appreciable amount of time beating the crop before it moved into the broad elevator. When our DAFWA harvester is moving more quickly this build-up is reduced. Nevertheless this trial showed the concept of the podguard trait does result in lower total losses.

However the variety IH51RR appears to be inherently lower yielding and lower oil producing than most other canola varieties. Consequently even with higher losses in other RR cultivars IH30RR and Hyola 404RR produced similar yields (~2.8 t/ha) and higher oil (46 compared to 43% for IH51RR). Therefore it would be interesting to see this non GM trait in a better genetic background.

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

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