

Canola response to plant density at Mingenew, 2014 (14CH24)

Seed of Roundup ready (RR) and hybrid varieties can be up to 30 times more expensive than retained seed of open pollinated (OP) triazine tolerant (TT) varieties, so getting the seed rate right is essential to optimising production costs. Trials in 2013 found that for RR and hybrid varieties, the optimum density is about 20 plants/m² and for OP TT varieties about 30 plants/m².

Background

Canola is now being grown in low rainfall areas.

Primarily, growers choose open pollinated (OP) triazine tolerant (TT) varieties, however, breeding companies are favouring the development of hybrids in order to pay for breeding services.

Hybrids provide growers with more vigorous seedlings, comparatively better plant establishment and generally higher yields.

However growers have to purchase new seed of hybrid varieties every year in order to get these potential yield benefits.

Seed for hybrid canola is 25 times more expensive than the seed of open pollinated canola.

Inevitably if growers are forced into hybrids they will wish to minimise seed costs by sowing at low densities.

Trials in 2013 showed that hybrid canola had lower optimum densities than OP varieties and that Roundup ready (RR) canola had lower optimum densities than TT canola.

However, the kind finish of the 2013 growing season would have favoured lower densities so this work needs to be repeated in more normal season types.

Aim

To compare the plant density response of yield and oil content between hybrid and OP canola in TT and RR herbicide tolerance groups.

Trial details

Table 1 Trial details, Mingenew trial

Crop / variety	Canola
Paddock rotation	2012 - wheat, 2013 - wheat
Treatments	<ul style="list-style-type: none"> ■ Pioneer 43Y23 (Roundup ready hybrid) ■ GT Viper (Roundup ready open-pollinated) ■ Hyola 450 (TT hybrid) ■ Sturt (TT open-pollinated) <p>Each at the following target densities: 5, 10, 15, 20, 30, 40, 60 and 80 plants/m²</p>
Replicates	Four
Sowing date	1 May 2014
Seeding rate	Various (from 0.3 to 7.9kg/ha depending on treatment)
Fertiliser (kg/ha)	Agstar Extra at 100kg/ha

Mingenew results

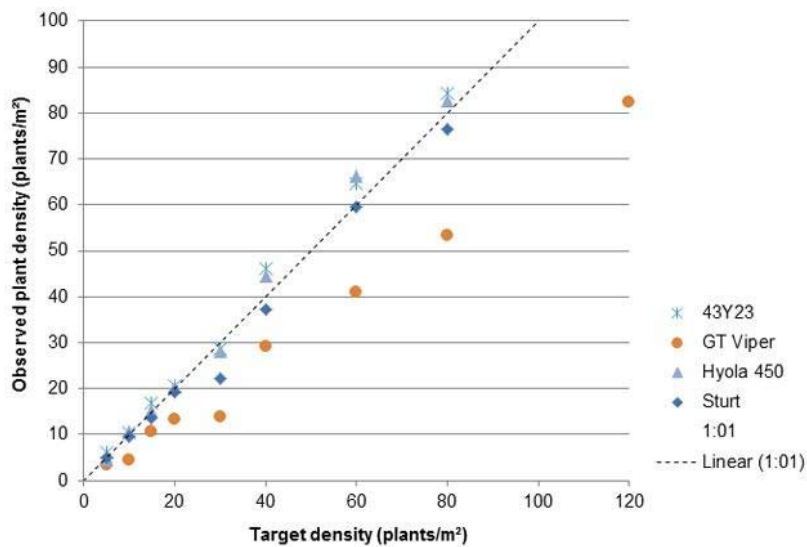


Figure 1 Canola crop establishment observed on 16 June 2014

Establishment has been close to target except for GT Viper.

The reason for this is that the GT Viper seed used had a lower germination (53%) than was assumed (98%).

Field establishment efficiencies estimated at 30 plants/m² in this experiment were 71% and 76% for the two hybrids; 43Y23 and Hyola 450 and 60% and 46% for the two OP varieties; GT Viper and Sturt.

Table 2 Trial details, Binnu trial

Crop / variety	Canola
Paddock rotation	2012 - wheat, 2013 - lupin
Treatments	<ul style="list-style-type: none"> ■ Pioneer 43Y23 (Roundup ready hybrid) ■ GT Viper (Roundup ready open-pollinated) ■ Hyola 450 (TT hybrid) ■ Sturt (TT open-pollinated) <p>Each at the following target densities: 5, 10, 15, 20, 30, 40, 60 and 80 plants/m²</p>
Replicates	Four
Sowing date	30 April 2014
Seeding rate	Various (from 0.3 to 7.9kg/ha depending on treatment)
Fertiliser (kg/ha)	Agstar Extra at 100kg/ha

Binnu results

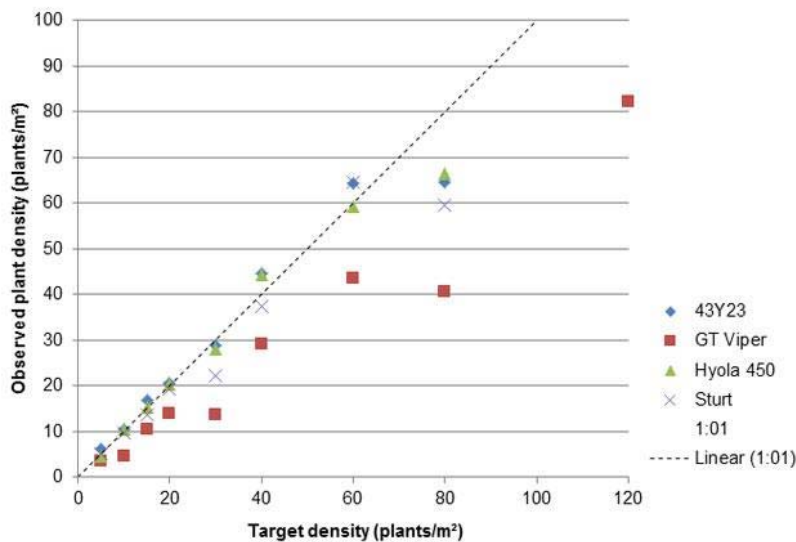


Figure 2 Canola crop establishment observed on 19 June 2014

Establishment has been close to target at target densities up to 60 plants/m² except for GT Viper.

The reason for this is that the GT Viper seed used had a lower germination (53%) than was assumed (98%).

Acknowledgements

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All Page Links

[1] <https://www.agric.wa.gov.au/sites/gateway/files/Canola-crop-establishment.jpg>

[2] <https://www.agric.wa.gov.au/sites/gateway/files/Canola-crop-establishment-b.jpg>

[3] <https://www.agric.wa.gov.au/canola/canola-response-plant-density-mullewa-2013-13ch22>

[4] <https://www.agric.wa.gov.au/canola/canola-plant-density-trials-list>

[5] <https://www.agric.wa.gov.au/canola/tactical-break-crop-agronomy-project-canola-agronomy-trials-and-information>

[6] <https://www.agric.wa.gov.au/canola/canola-seeding-rate-information>

[7] http://www.giwa.org.au/pdfs/2014/Presented_Papers

/Seymour%20Mark_Plant%20density%20of%20canola%20in%20the%20low%20and%20medium%20rainfall%20regions%20of%20Western%20Australia_PAPER%20DR.pdf

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