

Rutherglen bugs in canola and their effect on seed weights

Trial code:	GOIN00417-1
Season/year:	Autumn 2017
Location:	'Spicers Run', Wellington
Trial partners:	Joe Mason

Keywords

GOIN004, canola, rutherglen bugs, test weights, sucking insect pests

Key findings

- Rutherglen bugs (RGB) reduced the test weight of canola.
- Further research is required to confirm this finding, and to determine thresholds and appropriate control measures.

Rutherglen bugs (*Nysius vinitor*) can infest canola crops and can feed directly on developing seeds and therefore may affect canola oil quality/quantity¹. During the 2016 canola harvest, Grain Orana Alliance (GOA) staff harvested crops with a very high RGB infestations with subsequent grain sampling revealed very low-test weights of ~47 kg/hl (canola test weight minimum standard is 62 kg/hl²). This raised the question of whether RGB are also affecting yields, as well as oil.

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Following is a report on a scientific experiment. It may contain some herbicide treatments that are not registered for the situation, manner or rate at which they are used in this trial. This document or anything else resulting from, construed or taken from this or by GOA or its representatives should not be taken as a suggestion, recommendation or endorsement for unregistered herbicide use.

Aim

To determine if RGB effect canola yields

Methods

- 20 RGB were bagged onto 48 maturing canola racemes (+RGB).
- In the untreated control (UTC), 48 racemes were bagged to exclude RGB (-RGB).
- Bags were left on the plants for 29 days and checked weekly for the presence of RGB. Bags where RGB were not visible were topped up with an additional 5 RGB/bag.
- The trial was hand harvested.
- 100 canola seeds were weighed for the '100 grain weight'.

¹ <http://ipmguidelinesforgrains.com.au/pests/rutherglen-bug-rgb/rutherglen-bug-in-canola/>

² Graincorp Harvest Guide 2017 http://www.graincorp.com.au/Docs/GrainCorp%20Harvest%20Guide%202017-18_Online.pdf

Results were analysed by ANOVA and results compared by using a LSD method with a 95% confidence interval. Any references to differences between treatments should be assumed to be statistically different unless otherwise stated.

For analysis and discussion, unless otherwise stated, treatments and their effects will be compared to the UTC. Outcomes are statistically analysed by ANOVA at a 95% confidence interval with means compared by the LSD method.

Table 1. Trial site details

Trial establishment date	Spring 2017		
Crop and variety	Canola – 44Y90	Seeding rate	2.32 kg/ha
Sowing date	2/5/2017	Harvest ate	29/11/2017

Results

The 100 seed weight of the +RGB treatment were 6 grams lighter than the -RGB (**Figure 1**).

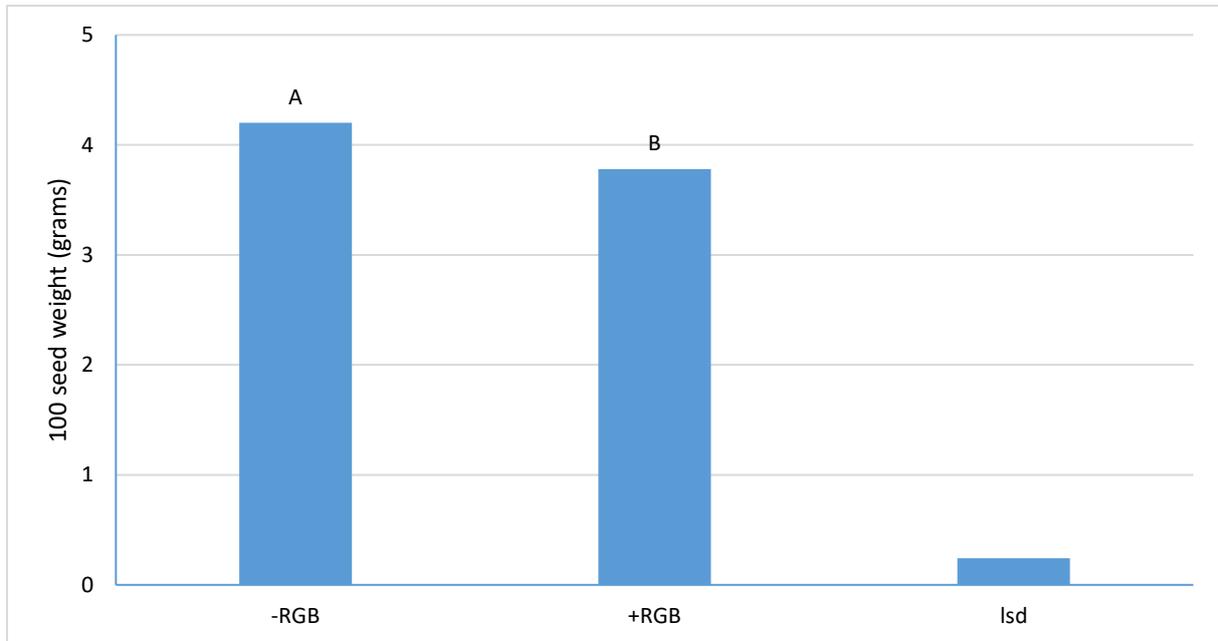


Figure 1. 100 seed weight (grams) from samples where RGB were excluded (-RGB) and where RGB were included (+RGB). Treatments with different letters are significantly different.

Discussion

At this trial there was a 10% reduction in the 100 seed weight in the +RGB treatment compared with where the -RGB treatment. The RGB were applied when the pods were starting to change colour, i.e. relatively mature seeds, with the aim to assess the effects of later season infestations. The 100 seed weight is not a direct indicator of yield potential as yield consists of seed weight multiplied by number of seeds present. This trial did not include a measure of RGB impact on seed number. However, these findings support further research.

Conclusion

Data from this trial suggests that RGB can affect seed development and further investigation is required to determine whether this results in yield losses (and/or quality implications). In addition, research should investigate the critical timings for RGB infestations and threshold numbers.

Acknowledgements

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