

GOA Trial Site Report

Comparison of products to improve dry down in canola, Wellington 2015

Year/Date/Season; Winter 2015
Location; Spicer's Creek, Wellington NSW
Collaborators; Mason Family
Project Code; GOHM00415-1

Background

When comes to harvest options for canola it basically comes down to two choices - to windrow or to direct head.

Previous trial work by GOA has demonstrated that direct heading is a comparable option to a well-timed windrow in terms of yield performance but with potential for cost and labour savings amongst other potential benefits. The GOA region is seeing an increasing rate of adoption of direct heading but there could be a number of limitations against an even wider adoption.

One of those is the potential delays to direct heading with crops of uneven maturity. One of the key advantages to windrowing is that it brings the whole crop to an even maturity to allow harvest to start rather than having to wait for greener patches to ripen before direct heading can commence. Growers in the GOA region are now questioning what role a desiccant might have in this scenario?

Reglone™ has label claims for this purpose; to desiccate green material in a crop ahead of harvest to facilitate earlier harvesting. However, its high cost both in purchase and application and many anecdotes of ineffectiveness is a major deterrent to use by many growers.

However, glyphosate (limited to Nufarm's Weedmaster DST) has recently been registered for pre-harvest use in canola. Many growers and advisors are now speculating its potential value as an alternate to Reglone. With potentially lower product costs, easier application and a perception of increased reliability than that of Reglone it is being seen as an attractive alternative.

The following trial was designed to assess both Reglone® and Weedmaster® DST for their ability to speed up of crop dry down compared to nil treatment to facilitate earlier harvesting of the crop.

DISCLAIMER

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 of any unregistered herbicide uses.

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Aim

Compare the use of Reglone against Weedmaster DST and Nil treatment for the rate seed moisture content decline in canola.

Methods

This trial used a randomized complete block design with sown small plots (10m * 1.8m) Plots were sown and managed by commercial standards throughout the growing season.

Table 1 Trial site details

Crop and Variety	Canola – 44Y89CL	Seeding rate	1.85 kg/ha
Sowing date	29/4/2015	Harvest Date	Multiple (see below)
Seedling equipment	Cone seeder fitted with Horwood Bagshaw PSS openers	Row Spacing	27.5 cm
Crop Nutrition (kg/ha)	100 kg/ha MAP + 100kg/ha Urea	Soil type	Clay Loam
Previous Crop (and yield)	Wheat	Pre Sowing Stubble Management	Cultivated

Weedmaster DST and Reglone were applied as per the proposed timings and rates listed in **Table 2**. Four harvest timings were undertaken with an aim that the earlier harvest timings commenced well before the grain had dried down to 8% grain moisture content. Subsequent timings were spaced aiming to achieve 8% grain moisture in all samples by the final harvest timing.

All herbicide applications were applied by and ATV motor bike fitted with a high boom at least 50cm above the top of the crop canopy and fitted with AIXR015 nozzles spaced at 50cm and operating at 3 bar pressure. Products were applied with rain water at 100L/ha of spray solution and applied early morning in all cases to avoid drift onto adjacent plots.

Samples were taken from the harvested grain from each plot immediately after harvest and put into airtight glass jars. These samples were then assessed for moisture content by oven drying. Samples were weighed, dried in an oven at 103°C and re weighed to calculate a percentage grain moisture content.

Grain yields were not assessed in this trial.

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Table 2- Herbicide treatment, crop stage, application dates and harvest timings, Wellington 2015

Herbicide	Crop Stage	Application Date	Harvest Time	Harvest date
Untreated Control (UTC)	NA		H1	3/11/2015
			H2	6/11/2015
			H3	8/11/2015
			H4	11/11/2015
Weedmaster DST @ 4.1L/ha	~20% Seed colour change	20/10/2015	H1	As above
			H2	
			H3	
			H4	
Weedmaster DST @ 4.1L/ha	~93% Seed colour change	26/10/2015	H1	As above
			H2	
			H3	
			H4	
Reglone 3 L/ha	~71% Pod colour change	26/10/2015	H1	As above
			H2	
			H3	
			H4	

Results

At the first harvest timing the Reglone treatment had significantly lower moisture content than the other treatments. Grain moisture of the Reglone treatment was still 16% with the Weedmaster treatments and UTC around 22% moisture.

Days since 70% SCC	Harvest timing	Harvested grain moisture content %							
		UTC		DST @ 20%		DST @ 70%		Reglone @ 70%	
8	H1	26.9	A	26.367	A	27.367	A	19.067	B
11	H2	16.767	BC	14.767	CD	15	CD	13.967	D
13	H3	8.333	E	8	E	8.067	E	7.833	E
16	H4	7.367	E	7.6	E	7.7	E	7.4	E

At the second harvest timing the Reglone treatment again had a lower moisture content than the untreated control but was not different to the either Weedmaster treatment. The moisture content

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of the Weedmaster treatments were not different to the UTC at any of the harvest timings (

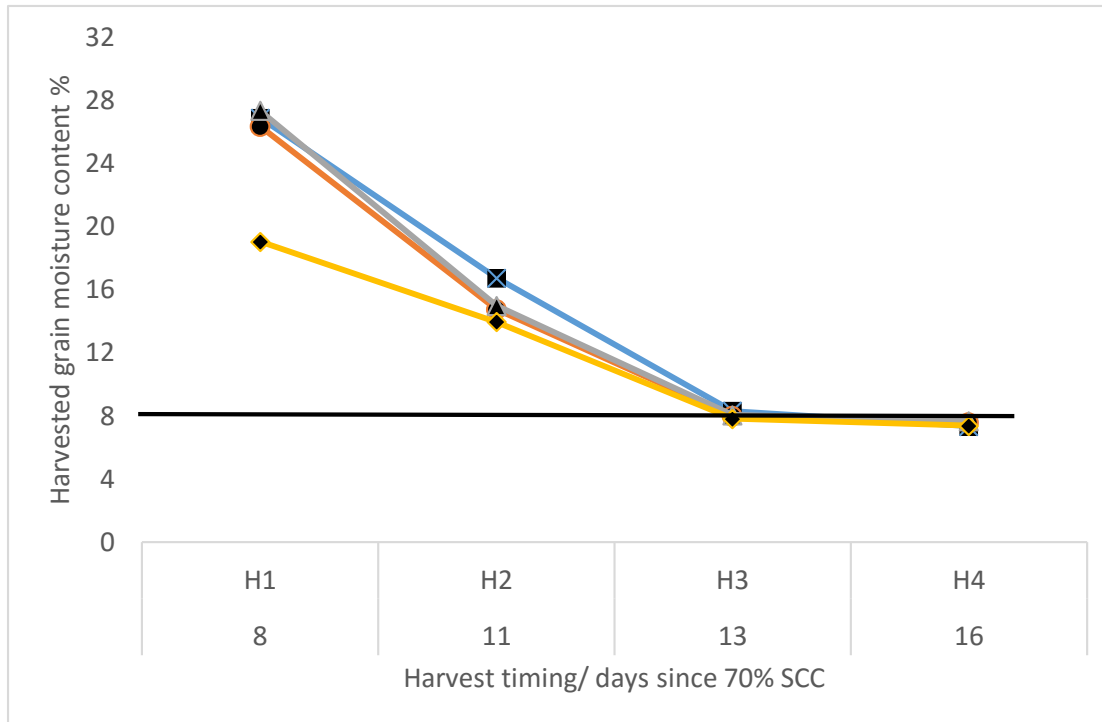


Figure 1). Again none of the treatments had reached harvestable moisture of 8%.

By the third harvest timing all treatments had declined below 8% moisture but there was no difference between each of the treatments.

At the fourth harvest timing moisture had declined only marginally and no differences were observed between treatments.

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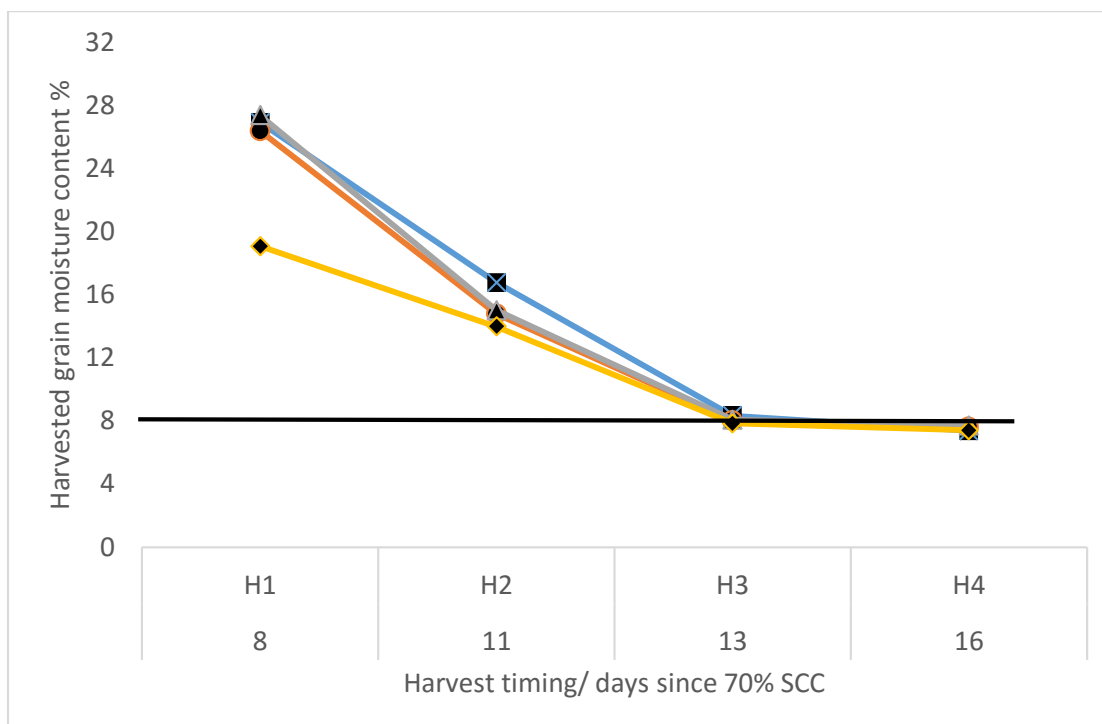


Figure 1. Harvested grain moisture content in response to various desiccant treatments over four harvest timings.

Discussion

In this trial the use of Weedmaster DST did not see the crop dry down any quicker than the UTC regardless of whether it was applied early or late. Grain moisture had only dried below the receivable standard of 8% by the third harvest timing at which all other treatments including the UTC had reached it as well.

Reglone however did have an effect on the moisture content of the canola. Moisture contents were lower at the first two harvest timings although they were not below the harvestable 8%. By the third harvest timing the grain had dried below the 8% moisture content but again all of the other treatments had also reached a harvestable moisture as well.

Any interesting point to observe also is the rate of ripening even in the untreated crop with relevance to the choice to windrow or direct head. Seed colour change was measured to be 70% as of the 26th of October and would be an ideal time to windrow the crop. In the UTC were the crop was left to mature naturally it achieved a harvestable 8% moisture within 13 days. District practices around Wellington NSW would suggest that if that crop had been windrowed it would have been around 7-10 days before those windrows would have been able to harvest. This suggests there may be as little as 3 days improvement in the time to harvest a direct headed one compared to a windrowed one.

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Conclusion

This trial suggests that there is no advantage in the application of Weedmaster DST to speed up the ripening of the crop. Applying this to a crop with uneven maturity in an aim to ripen the greener patches quicker to allow direct heading to start sooner based on this trial is unlikely.

The use of Reglone in this trial did decrease the moisture content of the grain quicker than Weedmaster and the UTC at the earlier harvests but any differences had had been lost by the time grain moisture content had reached the harvestable moisture of 8%.

In summary of this trial there was no advantage in the use of either product in improving “time to harvest” compared to nil treatment. But looking more broadly, the rate at which the crop ripened would seriously question the notion that windrowing would have speed up the harvesting of those green patches anyhow.

Acknowledgements

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