

# GOA Site Report

## 1 Canola Desiccation Trial - 2015

Year/Date/Season; Winter 2015  
Location; Spicer's Creek, Wellington NSW  
Collaborators; Mason Family

### 1.1 Background

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

Previous 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 green patches to ripen, sometimes much later, for direct heading to commence.

So an obvious question is would desiccation of canola followed by direct heading have the same benefit in managing uneven maturity in canola. The likely answer is yes as Reglone has been registered and used in this situation for many years. Reglone however is quite expensive to purchase and apply and has a reputation of being sometimes unreliable.

However, glyphosate (limited to Nufarm's Weedmaster DST) has recently been registered for pre-harvest use in canola. 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.

While the intended purpose is primarily for weed control, the label would suggest that it will also act as a harvest aid. The purpose of this trial is to determine if application of Weedmaster DST at label rates and timing will perform in a similar manner to the Reglone- that is bring immature crop down to harvestable moisture quicker than no treatment.

#### 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.

### 1.2 Aim

This project has the following main aims:

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

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## 1.3 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.

**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	3/11/2015
			H2	6/11/2015
			H3	8/11/2015
			H4	11/11/2015
Weedmaster DST @ 4.1L/ha	93% Seed colour change	26/10/2015	H1	3/11/2015
			H2	6/11/2015
			H3	8/11/2015
			H4	11/11/2015
Reglone 3 L/ha	71% Pod colour change	26/10/2015	H1	3/11/2015
			H2	6/11/2015
			H3	8/11/2015
			H4	11/11/2015

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Table 3- Herbicide application details- Wellington 2015

DST 20%, seed colour change- DST	<b>Date Applied</b>	20/10/2015	<b>Temp</b>	<b>Wind vel.</b>	<b>Wind Dir.</b>	<b>Humidity</b>
	<b>Start time</b>	8:50 am	25.5	0.5 - 2.0 km/h	N	45.9%
	<b>Finish Time</b>	9:00 am	<b>Δt</b>	5.1	<b>% Cloud</b>	60%
	<b>Water rate</b>	100L/ha	<b>Nozzle</b>	AIXR015	<b>Pressure</b>	3 Bar
	<b>Equipment</b>	ATV	<b>Speed</b>	7 km/h		
DST ~93% Seed colour change and Reglone 71% pod colour change	<b>Date Applied</b>	26/10/2015	<b>Temp</b>	<b>Wind vel.</b>	<b>Wind Dir.</b>	<b>Humidity</b>
	<b>Start time</b>	10:00 am	26.5	6-11 km/h	NW	50%
	<b>Finish Time</b>	10:25 am	<b>Δt</b>	9.5	<b>% Cloud</b>	50%
	<b>Water rate</b>	100 L/ha	<b>Nozzle</b>	AIXR015	<b>Pressure</b>	3 Bar
	<b>Equipment</b>	ATV	<b>Speed</b>	7 km/h		

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.

## 1.4 Results

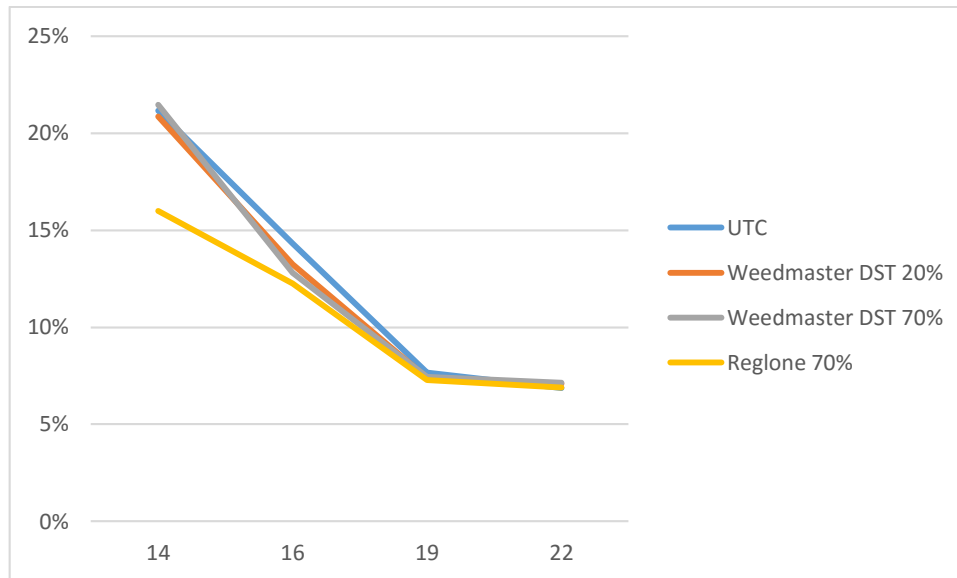
At the first harvest timing the canola harvested from the Reglone treatment had significantly lower moisture content than the other treatments. Grain moisture of the Reglone treatment was still 16% with the Weedmaster treatments and UTC around 22% moisture.

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 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.** Canola wet moisture content by harvest timing (number of days after 20% colour change) and

## 1.5 Discussion

The options investigated in this trial are aimed at replicating a commercial situation where the crop is sprayed with either Reglone or Weedmaster in an attempt to dry “green” patches of crop down quicker to allow harvesting to occur sooner than doing nothing at all.

It should also be noted that the grain sampled at each harvest time was only that that could be thrashed out of the pod. At the earlier harvest timings, a percentage of the pods and seeds were so green as not to thrash out of the pod. As such these were passed out of the back of the header and not able to be sampled. This situation means that the grain moistures measured from the earlier harvest timings would be under estimated. The latter two harvest timings however would be more accurate as there were no green pods left in the crop.

In this trial the use of Weedmaster DST did see the crop dry down any quicker than the UTC regardless of whether it was applied early or late. That is any green patches would not have ripened any quicker through the application of Weedmaster DST. 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 26<sup>th</sup> of October and would be an ideal time to windrow the crop. In the UTC where the crop was left to mature naturally it achieved a harvestable 8% moisture within 13 days. District practices

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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.

## 1.6 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.

## 1.7 Acknowledgements

GOA would like to thank GRDC’s support in running these trials which would not be possible without such funding. GOA would also like to thank the Mason family for hosting this trial.