

Roundup Ready Canola – An Adviser’s View

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Summary

Most growers were happy with their first experience with Roundup Ready Canola. The system is very effective on grass weeds and can be used as part of an integrated weed management program to manage weeds. The system also facilitates dry and timely sowing, thus maximising yield potential in any given season. Returns are similar to the Clearfield system at equivalent yields. The lack of residual weed control and presence of weeds that are difficult to control with glyphosate, will limit the use of this system in some situations. Misuse of the system will increase the risk of developing resistance to glyphosate and it is essential that advisers and growers adhere to management guidelines.

Introduction

2008 was the first season for the commercial production of Roundup Ready canola in Victoria. Commercial crops were grown in a range of environments across the cropping areas. This paper summarises the strengths and weaknesses of the Roundup Ready system following a review of the experiences of 2008.

In general, most growers were happy with the technology and the first years experience did highlight the strengths and weaknesses of the system.

Strengths

Grass Control

The Roundup Ready system provided excellent control of grasses and of ryegrass resistant to selective herbicides. In cases where ryegrass was the main weed, two applications of Roundup Ready were required to maximise weed control.

Weed control

In general, Roundup Ready herbicide had good efficacy on most weeds and the two application strategy generally provided the best overall weed control.

Dry sowing

The Roundup Ready system facilitates dry sowing or sowing on the break while still allowing for good in crop weed control. Dry or early sowing makes the best use of the growing season and allows the crop to make the best use of the moisture available. These factors have been critical to crop performance in the recent run of dry seasons and contributed to the good performance of the system in 2008.

Tool For Integrated Weed Management

The excellent grass control achieved with the Roundup Ready system means that this system will be a useful tool to incorporate into integrated weed management programs targeting ryegrass that is resistant to selective herbicides. Using the Roundup Ready system in these situations will lead to a large reduction in ryegrass seed banks in one season.

Weaknesses

Timing of Applications

The standard recommendation is to apply two applications of Roundup Ready herbicide at least two weeks apart and with the appearance of two new leaves between applications. Roundup Ready herbicide can be applied up until the 6 leaf stage of the crop. Our experience was that the hybrid varieties in particular reached the 6 leaf stage quickly and regular monitoring was needed to ensure that the window was not missed. If two applications were planned, the first application had to be applied early so that sufficient time could elapse to apply the second dose while the crop was still at the correct growth stage. There were cases where the first application was delayed and the crop was too advanced for the second application even though it would have been beneficial for weed control. There is also an issue with shading of small weeds if the crop is too advanced when herbicide is applied.

Lack Of Residual Weed Control

In contrast to the Clearfield and Triazine tolerant canola system, the Roundup Ready system does not provide control of late germinating weeds due to the lack of residual activity from the Roundup Ready herbicide. There were cases of late germinations of wild radish, toadrush, crassula, vetch and hogweed in commercial crops and trial strips. It can be argued that a vigorous crop will compete with these weeds and that they have little impact on yield. However this is not desirable from a farm hygiene and weed management perspective if weeds such as wild radish and vetch, that can be problematic in other parts of the farming system, are allowed to set seed and populations build up. Also, weeds like hogweed can grow after the crop has matured, utilising moisture and nutrients, and can cause problems with seeding in the following season. A side benefit of the Clearfield and the triazine tolerant system is that the chemicals persist and do provide residual control of weeds into summer in some environments.

Lack of herbicide carry over to provide residual weed control will be an advantage in environments where herbicides applied to canola in the Clearfield and triazine tolerant systems can persist for long periods and damage crops in the following season.

Tank Mixes With Roundup Ready Not Registered

The lack of registration of tank mixes with clopyralid and insecticides with Roundup Ready herbicide means that these products should be applied in a separate operation. This causes logistical difficulties by putting extra demands on labour and the boom spray at a time of peak workload.

Efficacy On Weeds

In general, Roundup Ready herbicide worked well on most weeds but can be weak on some weeds such as marshmallow and erodium. It is essential that these weeds are targeted when they are small or that an alternative system is considered if good control is not possible.

Glyphosate Resistance

The incidence of resistance to glyphosate is on the rise and there is no doubt that misuse of Roundup Ready technology will exacerbate this. It is essential that growers and advisers adhere to the guidelines outlined in the Roundup Ready technical manual and the Paddock Risk Assessment And Management option Guide (PRAMOG) and adopt integrated weed management practices to minimise this risk.

Profitability

Table 1 compares the gross margins of the three herbicide tolerant canola systems grown on 80 hectares and sold at a price of \$500 per tonne on farm. The analysis compares Roundup Ready (RR H) and Clearfield (IT) canola sown to hybrids and Roundup Ready (RR OP) and triazine tolerant (TT) canola sown to open pollinated varieties. The additional costs for the Roundup Ready system in the analysis are a flat fee of \$500 for the stewardship fee and \$10.20 per tonne of production for the grain technology fee. These were the fees charged in 2008 and indications are that there may be changes for 2009.

In general, returns for the Clearfield system were slightly ahead of returns for the Roundup Ready Hybrid system, and this difference grew larger at higher yields, due mainly to the total cost of the grain technology fee in the Roundup Ready system being dependent on production levels. The Roundup Ready OP system was more profitable than Clearfield hybrids at lower yields but less profitable at higher yields to the grain technology fee. The returns for the TT canola were the highest at a given yield due to the lower cost of herbicides and the lower seed cost, however, in reality, any yield penalty associated with TT canola compared to RR and IT canola will change the level of profitability of TT canola relative to RR and IT canola.

Table 1: Gross Margin of RR, IT and TT canola grown on 80 ha at price of \$500 per tonne

	Gross Margin \$/ha			
	1 t/ha	1.5 t/ha	2 t/ha	2.5 t/ha
Roundup Ready Hybrid (RR H) ¹	101.66	346.56	591.46	836.36
Roundup Ready OP (RR OP) ²	119.24	364.14	609.04	853.94
Clearfield (IT) ¹	109.99	359.99	609.99	859.99
Triazine Tolerant (TT) ²	139.36	389.36	639.36	889.36

1 Hybrid variety

2 Open pollinated variety

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