

Herbicide Control in a Clearfield System

Joe Delaney, Agronomist, Elders – Scholz Rural



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Key Messages

- The Clearfield™ system is another strategy which, when implemented correctly, can control certain grass and broadleaf weeds.
- Timing of the post emergent grass herbicides is crucial to its efficacy with control of the larger brome grass.
- It is not possible to rely solely on Clearfield™ chemistry for control of rye grass and radish due to group B imidazolinolines (imi) resistance.
- The Imi group B gave good control of brome grass compared to the 'suppressionary' sulfonurea (SU) group B chemistry's, although the timing was outside the labeled SU application window.
- Flight gave the best overall control of radish, residual activity controlled a late germination
- The Velocity + Ester mix had very good control on large flowering radish.

Aim

To evaluate and compare the effectiveness of standard post emergent herbicide treatments against the Clearfield™ system with Intervix herbicide for control of brome grass and radish in the new two gene wheat Justica CL.

Background

The mid-season two gene Clearfield™ wheat variety, Justica CL Plus could give greater flexibility and some additional agronomic benefits as it can be sprayed earlier compared to the older single gene varieties

With brome grass and wild radish becoming more problematic, the new Clearfield™ wheat and barley varieties offer a one pass post emergent knockdown and residual control strategy. Intervix is a sub-group B Imidazolinones (Imi) chemistry, which is considered more robust and is suitably different to the commonly used sulfonurea's (SU) sub-group B which we currently have resistance issues with.

Trial Details

Property	G & H Pearse Pty Ltd, west Wubin		
Plot size & replication	2m x 43m plots cross plotted with one fallow 3m strip. Broadleaf herbicide applications cross plotted		
Soil type	Yellow sand		
Soil pH (CaCl ₂)	0-10cm: 5.5	10-20cm: 4.4	20-40cm: 4.3
EC (dS/m)	0.065		
Paddock rotation	2010: canola, 2011: wheat, 2012: lupin		
Variety	Justica CL		
Seeding date	29/05/13		
Seeding rate	70 kg/ha full cut		
Fertiliser	29/05/13: 80 kg/ha Macropro plus		
Herbicides	None before seeding		
Post-em Application Dates:	T1: 35 DAA, T2: 53 DAA as per protocol		

Treatments & Results

Table 1: Grass control of 5 different herbicide treatments at timing 1 (T1) 35 days after application (DAA) at west Wubin, 2013.

Treatment	Efficacy in crop %		Efficacy in Fallow %	
	Brome Grass	Ryegrass	Brome Grass	Ryegrass
Untreated Control	0	0	0	0
330 mL/ha Atlantis	92	30	70	10
500 mL/ha Crusader	90	20	65	5
25 g/ha Monza	92	20	65	5
600 mL/ha Intervix	99	60	97	30

Note: Efficacy is measured by percentage control. Full control is 100% with no control 0%. Weed sizes: 70% mid-tillering, 30% 1-2 leaf.

The fallow plots were plots that did not receive any chemical treatments at all so had weeds growing on them from the autumn rains and were very big come time of treatment i.e. fully tillered brome grass and flowering radish.

Table 2: Wild radish control of different herbicide treatments at timing 2 (T2) 53 days after application (DAA) at west Wubin, 2013.

Treatment	Efficacy (%)
Untreated Control	0
670 mL/ha Velocity + 800 mL/ha Ester (In Fallow)	95
800 mL/ha Ester (In Fallow)	70
670mL/ha Velocity + 800 mL/ha Ester	97
800 mL/ha Ester	90
720 mL/ha Flight	99
670 mL/ha Velocity	97
600 mL/ha Intervix	70

Note: Efficacy is measured by percentage control. Full control is 100% with no control 0%. Weed size 50% radish rosette, 30% 4 leaf, 20% cotyledon.

Comments

In the fallow strip Imi group B, Intervix was the only product to give good control (90-99%) on large tillered brome grass. After a period of time it started to regrow in all of the SU group B treatments. The trial demonstrated that the SU group B herbicides do not give satisfactory control on brome grass that is fully tillered- their labels state this hence they must be used in their correct window. Whilst these 'suppressionary' Brome grass SU products did give quite good control (90-92%), it does show the strength of the Clearfield™ chemistry for brome grass control.

The ryegrass was not controlled with any of the treatments with either the Imi or SU's, which highlights the cross resistance status between the Imi and SU group B's at this site. Of interest, Intervix did give slightly better control, although not satisfactory, it did allow the crop to out compete it with stunted survivors and subsequently reduced the number of ryegrass compared to the SU treatments. In these situations, additional control measures will be required for complete control (ie pre-emergent herbicide).

Intervix had about 70% control of the radish due to the fact that some of the radish was resistant to the SU group B herbicides. For instance, wild radish plants growing beside each other, one would be a healthy resistant survivor alongside a dead one. There seemed to be no major resistance issues (group F and I) to any of the other radish herbicide treatments used.

Flight gave the best control of the radish in the crop. There was a late germination of radish after T2 and Flight with the Picolinafen had residual activity.

The Velocity and Ester mix was able to control the large flowering radish plants with a faster browning out with the Velocity standalone. The Ester on its own took a while to kill the larger ones but none of the plants produced any viable seed.

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Contact

Joe Delaney, Elders Dalwallinu
(08) 9661 2000