

Velocity: Evaluation of post-emergent tank mixtures for crop safety and knockdown surviving wild radish control in wheat

Rick Horbury, Technical advisor north, Bayer CropScience

Aims

1. Evaluate the crop safety and knockdown survivor wild radish control of Velocity solo and in tank mixtures with higher rates.
2. Evaluate the efficacy of Precept and other post-emergent herbicides for wild radish control in a suspected Group B & I population.

TRIAL SITE

Trial ID: HP14AUSBVKWE28
Location: Ogilvie
Rotation: 2013 Wheat - Mace

BACKGROUND SUMMARY

The population is suspected of having Group B & and I resistance.

TRIAL DESIGN

Plot size: 2 m x 36 m (2 replicates)
Crop type and varieties used: Mace wheat
Seeding rates and dates: 65 kg/ha, VRT 23/5/14
Initial knockdown 13/05/2014 1.2 L/ha glyphosate 450
Pre-emergent: 21/05/2014 Sprayseed 1.3 L/ha, Sakura .118 g/ha, Ester 680 350 mL/ha, chlorpyrifos 350 mL/ha

Spray date: 25/6/13
Time: 16.15 – 16.30 **Wind:** SE @ 8 km/h **Temp:** 17°C
Light: High **Cloud:** 0% **rh:** 40%
Water Rate: 80 L/ha
Ground Speed: 12 km/h applied with Bayer Application Trailer
Nozzle Type/ pressure: Hardi LD02/ at 3 bar

Site conditions: Crop looking OK.
 Site was dry on top with dust raised at application.
 Wind blowing along the plots at application.

Crop stage: 3 leaf majority.
Weeds present: **Wild radish** = 15 per m² (2-6 leaf scattered with some spiking or flowering survivors from knockdown. Old header rows patches up to 30 per m²)
Site Sprayed out: 21/8/14 – Velocity 1.2 L/ha + Amicide 600 750 mL/ha + Hasten 1%

Figure 1. Wild radish at application 25/6/14



Table 1. Wild radish control ratings and biomass reduction

Assessment Date		31/07/14	31/07/14
Appl.-Ass .Interval		36 DAA	36 DAA
No.	Treatment - rate/ha	WR % control	% Biomass reduction
1	Untreated	0	0
2	Velocity 670 mL + Hasten 1%	100	0
3	Velocity 670 mL + Estercide 680 400 mL + Hasten 1%	100	0
4	Velocity 1 L + Hasten 1%	100	0
5	Velocity 670 mL + Tigrex 750 mL + Hasten 1%	100	0
6	Flight/ Paragon Xtra 720 mL + Estercide 680 400 mL	98	0
7	Jaguar 1L + Estercide 680 400 mL	100	0
8	Estercide 680 800 mL (Group I screen)	62	5
9	Precept 2 L/ha + Hasten 1%	100	0
10	Precept 1.5 L/ha + Jaguar 750 mL + Hasten 1%	100	0

Wild radish comments

The radish population was of low density apart from some clumps along the old header row. The crop was not thick at application and coverage was excellent with even Velocity 670 mL/ha recording control of flowering radish in this trial with excellent conditions following application. This would normally not be a recommendation and application with MCPA or Tigrex containing the translocated herbicide MCPA would be recommended even in resistant populations,

The results from the Group F, C and I product Flight were commercially acceptable (98%) however there was the odd survivor that was showing effects of the herbicide with enough regrowth to set seed. This may be due to the moderately high resistance to the Group I MCPA component in this site and the fact that at 150 gai/ha of Group C bromoxynil may have been too low for the larger radish at application, Jaguar with 250 gai/ha bromoxynil did not record any survivors.

Group I recorded moderately high levels of resistance in the site with 800 mL/ha of Estercide failing to control 38% (see pic) of the wild radish population.

Application of Precept containing Group H and I solo would not be recommended on a population selecting for Group I resistance such as this despite it achieving full control in this trial it should be applied in a three or four way mixture.

All treatments including Group H i.e. Velocity or Precept solo or in mixtures recorded complete control.

Figure 2. Foreground surviving wild radish from Estercide 680 800 mL/ha with untreated to rear



Crop Safety

All treatments applied in the trial were safe to the crop apart from some typical transient bleaching from the Group F herbicides. Previous trials with the tank mixtures in this trial have recorded similar observations with no yield loss when applied in the presence of weeds. That said, care should always be taken across variety and environmental conditions.

Crop patchiness observed 25/6/14 and tested for PreDicta B

Trial ID	Location	R. solani AG8 pgDNA/g Sample*	R. solani AG8 log(pg DNA/g soil+1)	R. solani AG8 Risk	Take-all (wheat + oat strains) pgDNA/g Sample*	Take-all (wheat + oat strains) log(pg DNA/g soil+1)	Take-all (wheat + oat strains) Risk	Crown Rot (F.pseudograminearum) log(pg DNA/g soil+1)	Crown Rot (F.pseudograminearum) Risk	F. pseudograminearum test 1 pgDNA/g Sample*	F. pseudograminearum test 1 Risk	F. pseudograminearum test 2 pgDNA/g Sample*	F. pseudograminearum test 2 Risk	F. culmorum log(pg DNA/g soil+1)	F. culmorum pgDNA/g Sample*	F. pseudograminearum test 1 Risk	Pratylenchus neglectus nematodes /g soil	Pratylenchus neglectus Risk	
WE28	Ogilvie	3591	3.56	High	1.5	0.4	BDL	0	BDL	0	BDL	0	BDL	0	0	BDL	12	1.4	Low

Crop symptoms 25/6/14

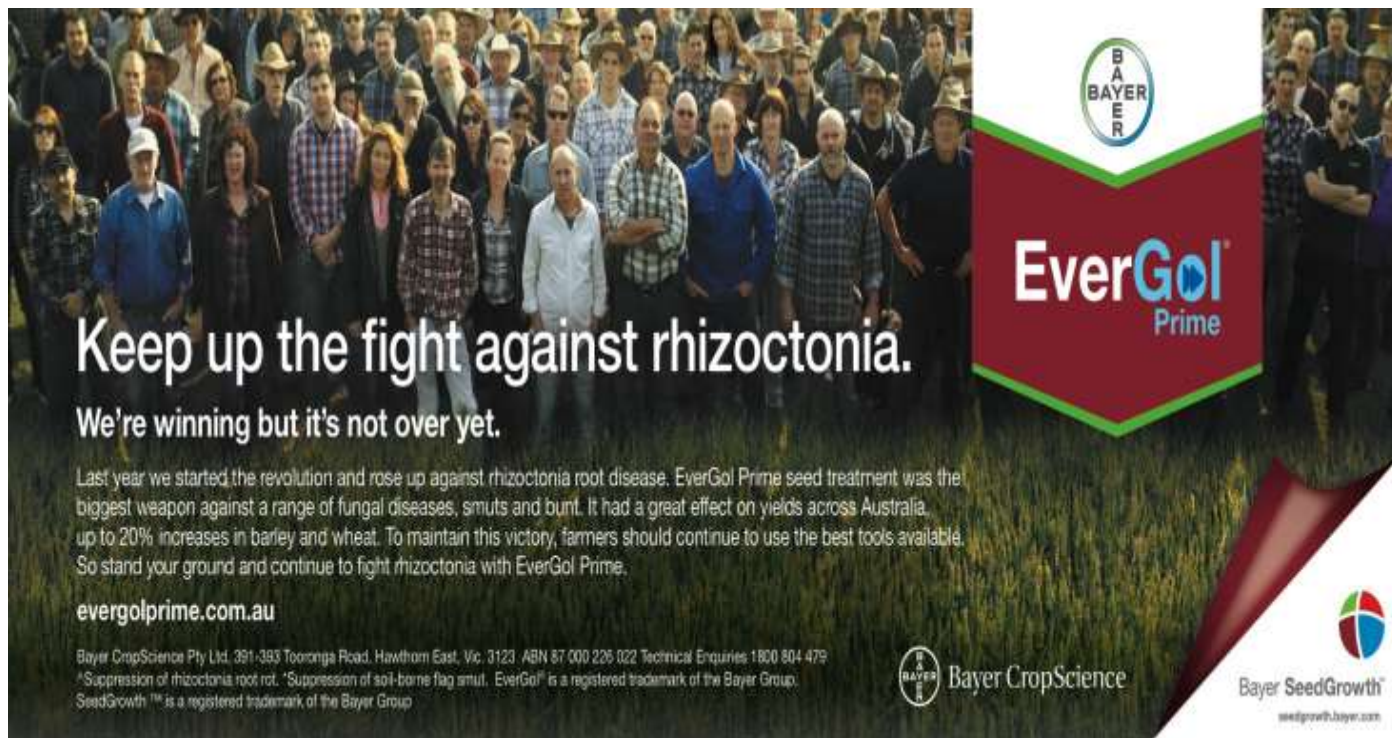


Rhizoctonia

With the levels of rhizoctonia recorded in the patches sampled from this paddock it would be recommended that an appropriate seed treatment or in furrow product such as EverGol Prime be applied to limit the lost production if the rotation was going into cereals in 2015. Alternately some form of soil disturbance to break up the rhizosphere such as deep ripping can also reduce although not eliminate the disease.

A combination of the two strategies would be even more effective at reducing the impact of the disease.

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