

## Group B tolerant crops

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### Key findings

- New crop varieties have been recently released that have improved tolerance to imidazoline (imi) herbicides.
- Group B tolerant varieties showed no damage symptoms to herbicides registered for use. Damage to non group B tolerant varieties was observed in many treatments.

### Why do the trial?

To compare the tolerance of the new varieties to a range of group B herbicides relative to conventional non tolerant varieties. To also measure the efficacy of herbicides for controlling crop volunteers with group B tolerance.

### How was it done?

**Plot size** 2m x 3m

**Fertiliser** 100 kg/ha DAP  
(18:20)

**Seeding date** 28<sup>th</sup> May 2011

The crops included:

2 strips of canola were sown. AV Garnet (not tolerant) & Clearfield 44C79 (tolerant).

2 strips of barley were sown. Buloke (not tolerant) & Scope (tolerant).

3 strips of wheat were sown. Gladius (not tolerant), Justica CL plus & Clearfield JNZ (tolerant).

2 strips of lentils were sown. Nipper (not tolerant) & PBA Herald HT (tolerant).

The treatments for all the crops included:

2 residual herbicide treatments were applied prior to sowing

The treatments for the wheat, barley and canola included:

6 group B post emergent (3-4 node) herbicide treatments applied on the 14<sup>th</sup> July and 2 different group I herbicide treatments

The treatments in the lentils included:

1 PSPE treatment was applied post sowing prior to emergence

1 post emergent (3-4 node) herbicide treatment applied on the 14<sup>th</sup> July

Treatments were visually assessed and scored for herbicide damage symptoms 5 weeks after application.

Crop damage ratings were:

1 = no effect

2 = slight effect

3 = moderate effect

4 = severe effect

5 = death

## Results

Many of the herbicides are not registered for the crops that have been sprayed. It is important to check the herbicide label before following strategies used in this demonstration. Herbicide effects can vary between seasons and depend on soil and weather conditions at time of application.

There was no crop damage to any of the tolerant crop lines of wheat, barley and lentils in any herbicide treatment. The only damage in the tolerant line of canola, 44C79 was from group I (hormone) chemistry.

There was no visual difference in the new wheat variety Justica CL Plus (twin gene) compared to the older Clearfield JNZ (single gene).

The 700 ml/ha rate of Intervix resulted in death of the non tolerant varieties Buloke, Gladius and AV Garnet. Tolerant varieties Scope, Justica CL Plus, Clearfield JNZ and 44C79 were not affected.

Midas applied at 900 ml/ha also severely affected non tolerant varieties Buloke and Gladius. Tolerant varieties Scope, Justica CL Plus and Clearfield JNZ were not affected.

Residual Logran (7g) had a moderate effect on Nipper lentils and AV Garnet canola. There was also no effect of residual Intervix in any variety, which is not normal and needs to be viewed with caution.

PBA Herald HT (formally CIPAL 702) the new lentil variety released for improved tolerance to Broadstrike and group B herbicide residues was not affected by any of the group B residual or Spinnaker herbicide treatments. This result should be treated with caution however and label recommendations should be followed. Other research conducted by SARDI has demonstrated that certain group B herbicides and their residues can cause significant damage symptoms to PBA Herald HT.

Nipper (non tolerant) lentils incurred a moderate level of damage to both PSPE and post timing applications of Spinnaker and the residual 7g Logran treatment. Intervix was not applied to either lentil variety. 10g/ha of Logran did not have any effect on Nipper lentils, which is very unusual, and in the herbicide tolerance trial alongside produced a severe effect on the Flash lentils.

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## Group B tolerant crops

		Lentil		Barley		Wheat			Canola	
		Not Tol	Tol	Not Tol	Tol	Not Tol	Tol	Tol	Not Tol	Tol
Timing	Herbicide	Nipper	PBA Herald HT	Buloke	Scope	Gladius	Justica CL plus	Clearfield JNZ	AV Garnet	Clearfield 44C79
	Nil	1	1	1	1	1	1	1	1	1
Residual	7g logran	3	1	1	1	1	1	1	3	1
3-4 leaf or node	10g logran	1	1	1	1	1	1	1	4	1
Residual	180mL Intervix	1	1	1	1	1	1	1	1	1
3-4 leaf or node	700mL Intervix	Untreated		5	1	5	1	1	5	1
	nil	1	1	1	1	1	1	1	1	1
3-4 leaf or node	Spinnaker PSPE 100g	3	1	2	1	3	1	1	4	1
3-4 leaf or node	Spinnaker post 100g	3	1	2	1	3	1	1	4	1
3-4 leaf or node	Midas 900ml	na	na	4	1	4	1	1	4	4
3-4 leaf or node	Logran 10g	na	na	1	1	1	1	1	4	1
3-4 leaf or node	Banvel M 1.0L	na	na	1	1	1	1	1	4	4
3-4 leaf or node	2,4-D 1.0L	na	na	1	1	1	1	1	4	4



*Wild oats in disc seeding treatment*



*Select resistant ryegrass*



*Harrington seed destructor*

## Droplet size demonstration at Hart



The control of barley using medium, coarse or extra coarse spray droplets with 1.5L/ha glyphosate or SpraySeed, at the Hart field site. Treatments were applied on September 26<sup>th</sup> 2011 and these photos were taken three weeks later. Results show larger droplets performed as well as traditional medium droplets.