# Management of glyphosate resistant annual ryegrass on fence lines

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**Key findings**

- Glyphosate was unable to control glyphosate resistant annual ryegrass on fencelines.
- Addition of other herbicides to glyphosate products improved control, but was still not effective.
- Two applications of Spray.Seed, Spray.Seed plus diuron or Alliance were the best registered treatments.

## Why do the trial?

Glyphosate resistance in annual ryegrass is becoming a problem on fence lines.

There are physical management strategies available: cultivation, slashing and so on, but some growers prefer a chemical solution.

This trial was conducted to examine possible chemical options for controlling glyphosate resistant annual ryegrass on fence lines.

## How was it done?

A natural population of glyphosate resistant annual ryegrass near Clare was used. Plot sizes were 2 m x 15 m and the trial was conducted in 3 replicates along the fence line.

The trial was sprayed on 2 September 2010 using a hand-held 2 m boom delivering 100 L water per hectare. Products were sprayed with adjuvants as necessary.

The trial was assessed 22$^{nd}$ December 2010 with counts made of ryegrass heads. These were converted to % of the untreated plot in each block and analysed.

## Results

The level of control of annual ryegrass in the trial is listed in Table 1. Glyphosate at 1.0 L/ha did not provide any useful control of annual ryegrass. Doubling the glyphosate rate to 2 L/ha provided a small amount of control (25%). Adding residual herbicides to glyphosate improved control, but control was not better than 64%. On the large population of annual ryegrass present at the site this level of control was insufficient.

Spray.Seed alone at 3.2 L/ha provided more than 80% control of the population. Two applications of Spray.Seed at 3.2 L/ha, Spray.Seed mixed with diuron at 6L/ha and Alliance at 4L/ha all provided the best levels of control of the population for the currently registered products and mixtures.

A number of experimental treatments were tested in the trial. Three of these provided high levels of control of annual ryegrass on the site and Experimental treatment E provided 100% control in each of the three blocks.

*Table 1: Annual ryegrass control by herbicides as % of untreated. The untreated plots had an average of 4,400 heads per square metre. Letters after the value separate the means using the a 95% level of confidence.*

| **Herbicide treatment** | **Annual ryegrass control (%)** |
|---|---|
| Untreated | 0 a |
| 1.0 L/ha Roundup PowerMax | 13.2 ab |
| 2.0 L/ha Roundup PowerMax | 25.0 bc |
| 1.0 L/ha Roundup PowerMax + 6.0 L/ha AmitroleT | 63.8 cde |
| 1.0 L/ha Roundup PowerMax + 6.0 L/ha Diuron | 62.7 cde |
| 1.0 L /haRoundup PowerMax + 6.0 L/ha Simazine | 47.5 bcd |
| 3.2 L/ha SpraySeed | 81.9 deg |
| 3.2 L/ha SpraySeed + 6 L /haDiuron | 96.1 fg |
| 3.2 L/ha SpraySeed + 6 L/ha Simazine | 78.7 def |
| 4.0 L /haAlliance | 84.9 defg |
| Experimental A | 65.9 cde |
| Experimental B | 91.8 efg |
| Experimental C | 80.8 defg |
| Experimental D | 79.5 def |
| Experimental E | 100 g |
| 3.2 L/ha SpraySeed followed by 3.2 L /ha SpraySeed | 99.5 fg |
| Experimental F | 93.2 efg |

**Hart board member Justin Wundke with Balaklava High School students at the 2010 Hart Field day**