

Residual herbicide options for fallow control of Windmill grass (*Chloris truncata*)

Trial Code: GOWE03916-1
Year: Summer 2015/16
Location: 'Torokina', Armatree
Collaborators: Haddon Rig

Keywords

GOWE039, Windmill grass, residual herbicide, pre-emergent herbicide, fallow control, Armatree

Take home message

Residual herbicides may play an important role in WMG control – however the results of this trial are not sufficient to make recommendations on products or rates.

Background

Windmill Grass (WMG) is emerging as a major problem in zero till conservation (stubble retention) farming systems. Its growth habits are suited with small seed that readily establishes with minimum soil disturbance, and it has relatively high tolerance to most common herbicides, including emerging instances of glyphosate resistance¹.

A number of trials have been conducted investigating various aspects of knock down control of WMG. This research, although valuable, has shown that controlling large mature WMG with herbicides varies in its success. Because of variable results of herbicide control of large WMG plants, many growers have returned to cultivation to control mature WMG plants. However, incomplete seed burial often results in subsequent germination of WMG from its soil seed bank, allowing for a rapid re-establishment.

The trial is designed to investigate if there is value in using pre-emergent or residual herbicides to control WMG seedling following cultivation control, and also assist with driving down the weeds soil seed bank. If any of these products are successful, their contribution to reducing or limiting reestablishment of WMG will be assessed.

DISCLAIMER

Following is a report on a scientific experiment. It may contain some herbicide treatments that are not registered for the situation, manner or rate at which they are used in this trial. This document or anything else resulting from, construed or taken from this or by GOA or its representatives should not be taken as a suggestion, recommendation or endorsement of any unregistered herbicide uses.

¹ http://www.glyphosateresistance.org.au/register_summary.html

Aims

- Compare a range of pre-emergent and residual herbicides for controlling seedling emergences of WMG.
- Observe any effects on other weed species present.

Trial design

A small split plot trial was established in summer 2015/16 where a known population of WMG was observed prior to cultivation. Treatments were applied on 18/12/2015. Little or no rain fell for 3 weeks post application. All treatments were applied in water volume of 100 L/ha through AITT015 (coarse) nozzles at 3 bar.

Results

In this trial all treatments reduced the establishment of WMG compared to untreated control (UTC) (Figure 1).

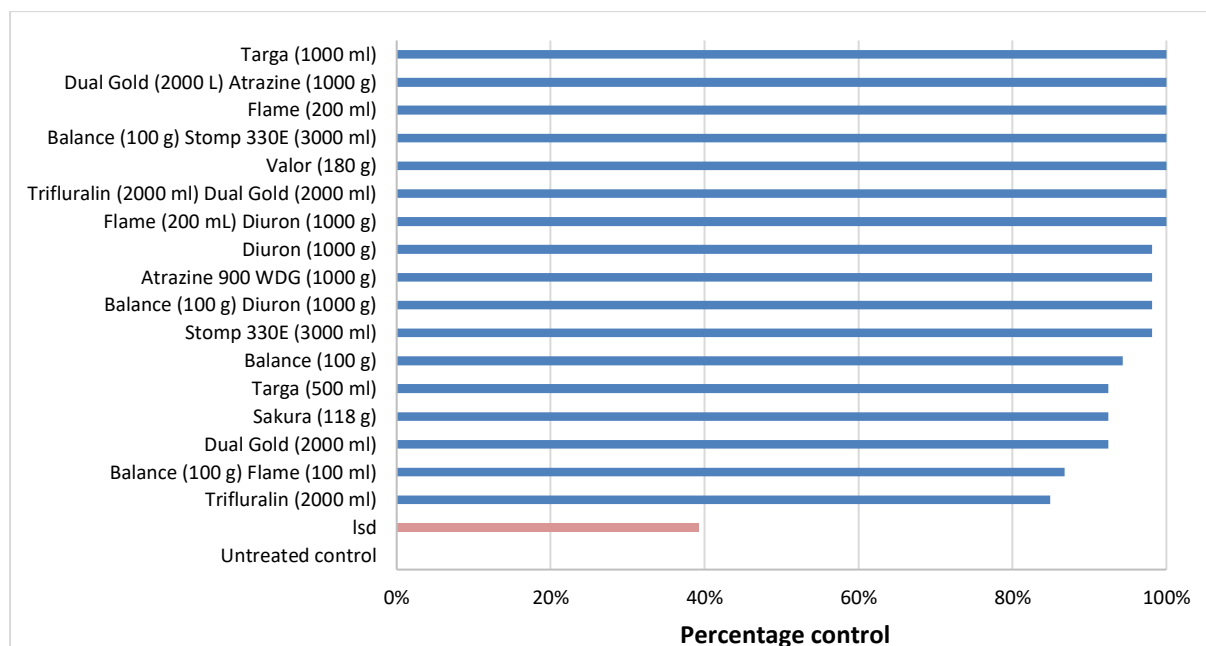


Figure 1. Reduction in establishment of WMG achieved by various herbicides (rate/ha) compared to WMG weed population in the untreated control (UTC) 84 days after treatment (DAT).

Discussion

Establishment of WMG across the site was low and highly variable. In the UTC, one plot had 3.5 WMG/m², while in another plot there was none. Variability impacted on the ability for statistical differences between treatments. Low (re) establishment of WMG occurred despite approximately 150 mm falling between herbicide application and assessment dates. It is possible that either cultivation was effective at burying WMG seed and/or that WMG seed has specific dormancy and germination requirements that were not met.

All residual herbicides suppressed re-establishment of WMG when compared to the no herbicide control. These results should not be used in isolation of other trials that collaborate these findings

Products such as Stomp® and trifluralin performed well considering they were not incorporated mechanically and were subject to high levels of photo degradation before incorporating rains occurred.

Conclusion

This trial provides encouragement that residual herbicides can provide effective control of re-establishment of WMG populations. Further testing is required to confirm these results.

Acknowledgements

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