

# GOA Individual Trial Site report

## Project Name

# Knockdown control of Fleabane seedlings in fallow, 2012

## Trial Code

GOA1230

## Trial Location

20km east of Coonamble NSW

## Trial commencement date

April 2012

## Background

In the GOA area the prevalence of Flaxleaf fleabane (FB) has become an increasing problem in both the fallow and in crops. Limited products are registered for the control of fleabane and past trials have shown inconsistent results for the control of larger fleabane plants in the fallow with most requiring follow up treatment with a second pass or double knock with paraquat to achieve control.

However, data available for the control of seedling fleabane in the fallow situation was low particularly for herbicide spikes used pre seeding that did not carry plant back restrictions. Much of the data available relating to seedling control was for use in crop but not in fallow. The existing trials also did not investigate some new products such as Sharpen or the potentially repositioning of older products or Goal (Oxyfluorfen).

## 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.**

## Aims

- To investigate appropriate products for the control of seedling Flaxleaf fleabane in fallow prior to seeding winter crops
- To investigate the value of a double knock approach on seedling Flaxleaf Fleabane

## Methods

- Split plot- randomised complete block with three replicates in small plots of 3m x 12m

- Sites selected in areas of fields with an even fleabane population with seedlings of relatively equal size
- Plots were treated when the seedlings were approximately 2- 5cm in diameter with 6-10 fully expanded leaves. It is predicted that the plants would have been approximately 6 weeks old at the time of spraying.

Picture 1- Seedling plants present in trial site, Coonamble April 2012



- The plots were split into two halves, the first was only treated with the initial treatments using a handboom and the second half received a second pass of Paraquat at 2L/ha, 17 days after the first application (DAA) using an ATV mounted boom spray
- The percentage of plant death was assessed on multiple dates

#### Treatment table

	Treatment	Rate/ha
1	UTC	Nil
2	Paraquat	1.6L
3	Glyphosate 450 + Goal + Wetter 1000	800ml + 75ml
4	Glyphosate 450 + Goal + Wetter 1000	800ml + 150ml
5	Glyphosate 450 + Sharpen + Bonza	800ml + 100ml
6	Glyphosate 450 + Wetter 1000	800ml
7	Glyphosate 450 + Wetter 1000	1.6L
8	Glyphosate 450 + Amicide Advanced + Wetter 1000	800ml + 800ml
9	Glyphosate 450 + Glean + Wetter 1000	800ml + 20g
10	Glyphosate 450 + Hammer + Supercharge	800ml + 30ml
11	Glyphosate 450 + Lontrel + Wetter 1000	800ml + 150ml
12	Glyphosate 450 + Starane Advance + Wetter 1000	800ml + 200ml
13	Glyphosate 450 + Ally + Wetter 1000	800ml + 7g
14	Glyphosate 450 + Tordon 75-D + Wetter 1000	800ml + 700ml

## Application details

Initial application	<b>Date</b>	<b>Water rate</b>	<b>Nozzle</b>	<b>Pressure</b>
	13/04/2012	100L/ha	AIXR015	3 bar
	<b>Start time</b>	<b>Temp °C</b>	<b>Wind vel.</b>	<b>Wind Dir.</b>
	3pm	25.7	6.8 km/hr	SE
	<b>Finish time</b>	<b>Δt</b>	<b>Humidity</b>	<b>% Cloud</b>
	4pm	8.9	38.9%	10
Double knock application	<b>Date</b>	<b>Water rate</b>	<b>Nozzle</b>	<b>Pressure</b>
	1/5/2012	100L/ha	TTA1015	4 bar
	<b>Start time</b>	<b>Temp °C</b>	<b>Wind vel.</b>	<b>Wind Dir.</b>
	1.30p.m.	25	25 km/hr	N
	<b>Finish time</b>	<b>Δt</b>	<b>Humidity</b>	<b>% Cloud</b>
	2.30p.m.	8	40	0

## Results

**Table 1. Percentage seedlings killed at 39 and 62 Days after first application (DAA)**

Treatment	39DAA - single pass		39DAA - with double knock		62DAA - single pass		62DAA - with double knock	
UTC	6.7	b	1.7	e	0	g	53.3	g
Paraquat	8.3	b	86.7	ab	30	de	90	ab
Glyphosate 450 + Goal @ 75ml	0	c	15	de	16.7	f	81.7	bc
Glyphosate 450 + Goal @ 150ml	0	c	5	de	23.3	ef	76.7	cd
Glyphosate 450 + Sharpen	5	bc	16.7	d	26.7	de	66.7	def
Glyphosate 450 @ 800ml	0	c	6.7	de	30	de	63.3	efg
Glyphosate 450 1.6L	0	c	8.3	de	35	d	70	de
Glyphosate 450 + Amicide Advanced	56.7	a	100	a	93.3	a	100	a
Glyphosate 450 + Glean	0	c	13.3	de	26.7	de	70	de
Glyphosate 450 + Hammer	0	c	13.3	de	26.7	de	56.7	fg
Glyphosate 450 + Lontrel	6.7	b	88.3	ab	75	b	96.7	a
Glyphosate 450 + Starane Advance	10	b	83.3	b	50	c	90	ab
Glyphosate 450 + Ally	0	c	40	c	50	c	73.3	cde
Glyphosate 450 + Tordon 75-D	60	a	98.3	a	86.7	a	100	a
LSD (0.05)	6.11		13.52		9.91		11.66	
CV	33.21		19.56		14.5		8.93	
p value	0.0001		0.0001		0.0001		0.0001	

Means within columns followed by the same letter are not significantly different at the 5% level according to least significant difference (LSD) test. NB there appeared to be some apparent natural attrition in the 39 DAA treatment in the UTC plots, by 62 DAA plots showed no signs of reductions in populations.

## Discussion

Firstly it should be noted that preferably fleabane should have been sprayed earlier than in this trial. Label claims may only cover smaller and younger plants and common-sense would be that smaller plants are easier and more reliably controlled by any herbicide. A point to note though was the surrounding paddock was sprayed at the same time due to time and weather constraints

delaying commercial applications. In this sense this trial does simulate what would be a real world situation.

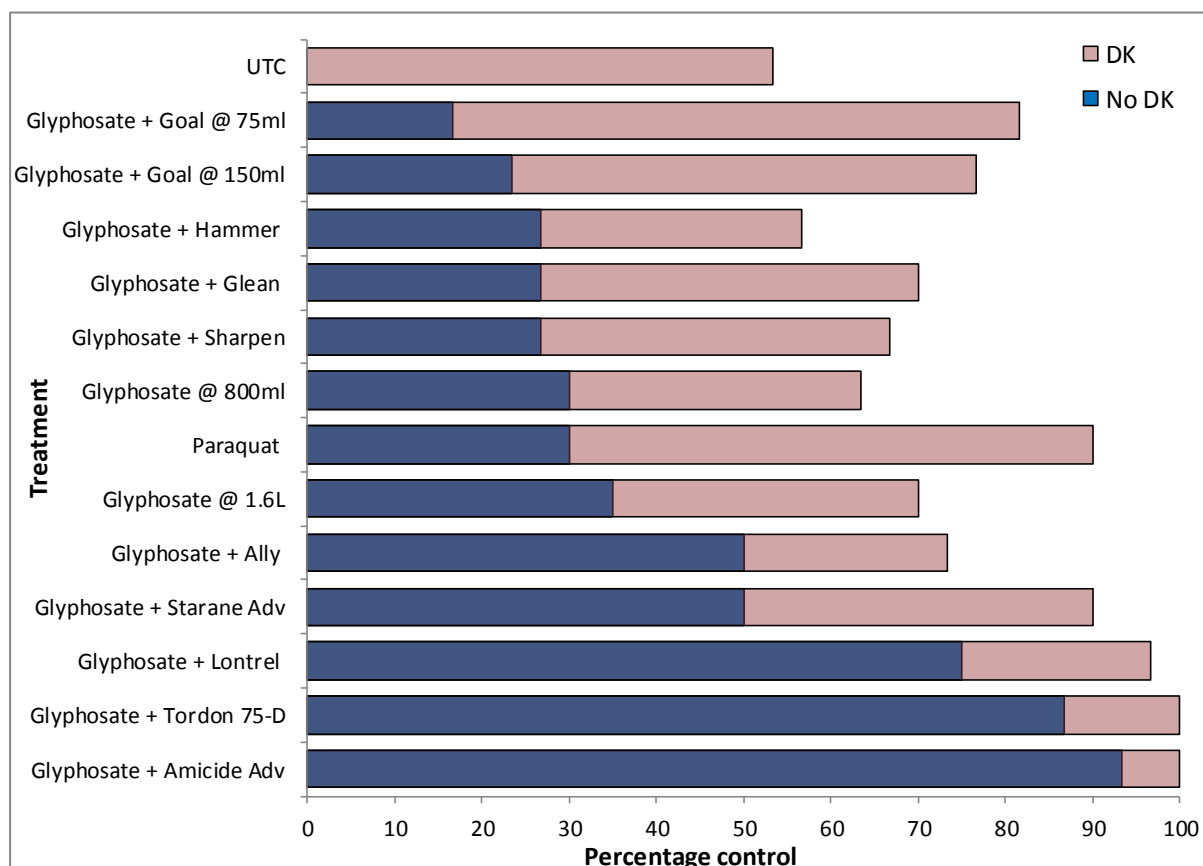
Figure 1 below graphically demonstrates the level of control offered by the various treatments applied. The darker bars indicate the level of control where a double knock was **NOT** applied. As it shows, only the Amicide Advance achieved a level of control that would be commercially acceptable. Tordon 75D could be classed as offering good suppression but all other treatments failed to achieve satisfactory control.

The lighter bars in figure 1 illustrate the final control after a double knock (DK) was applied. It should be noted at this point that the DK was applied after 17 days after the initial applications. This time interval is longer than generally recommended for FB control. It can be seen that the level of final control of all options have been significantly improved, however, not all treatments achieved commercially acceptable levels.

Two points should also be raised here-

1. Although many of the poorer performing treatments were improved to acceptable levels with the DK, a huge amount of the improvement was achieved by the paraquat, as shown by the length of the second half of the "Bar". This situation may put undue pressure to select for resistance to paraquat.
2. Many of these poorer performing treatments are **unregistered** and therefore, are not recommended (for good reasons). With the consideration of point 1 above, the registered treatments of either Tordon 75-D or Amicide advance are much more effective, put less pressure on the DK.

**Figure 1. Percentage control of seedling fleabane at 62DAA.**



## Conclusions

The only tank mix products in this trial that would be commercially acceptable and appropriate for use as a single pass option for the control of seedling fleabane was Amine Advance with Tordon 75-D offering good suppression.

With the addition of a double knock, Amine Advance, Tordon 75-D, and Lontrel resulted in acceptable control. Starane followed by a double knock or two sequential applications of Paraquat resulted in just under 90% control.

Unfortunately all these spike products do have plant-back restrictions following their use. However they may be suitable in certain situations- check the label before use.

Using a double knock strategy significantly improved seedling control for all products including those which did not show good control in the single pass strategy. However, all other options even with application of a double knock failed to achieve acceptable control.

Even Oxyflurofen used at a double rate which has been suggested to be used by some advisors, still failed to achieve acceptable control. In fact all the Group G spikes- Hammer, Goal and Sharpen all failed to achieve good single pass control in this trial.

It is an important point to note that at the commencement of the trial it was thought that many products would gain acceptable control of seedlings, but from this trial it has shown that fleabane seedlings are difficult to control even at a young age and may often still require a DK to ensure control. However this double knock could be provided in the form of disturbance and burial through the sowing process which was not examined in this trial.

And as a final point many of the unregistered options did not offer good control and to use them in an attempt to control seedling FB is of little value. Particularly in light of other products offering much greater control but offering growers and advisors the safety of operating within "label" conditions.

## Acknowledgements

### GOA would like to thank

Rob Rich of Coonamble for hosting the trial on his property

Graeme Callaghan for helping locate the trial site for GOA