MCA Ag Research

Glufosinate adjuvants and water volume

Trial ID: BB2420
Protocol ID: MCA2406 Location: Kioma Trial Year: 2024/25

Study Director: Lawrie Price

Objectives:

To determine the effects of adjuvants with Biffo (Glufosinate) on control of key weeds

Materials and Methods:

A trial was sited in a fallow paddock infested with feathertop Rhodes grass ~ 83km northwest of Goondiwindi. Treatments were applied on December 7th 2024 to small feathertop feathertop Rhodes grass seedlings. There were approximately 20 seedlings/m2. The plants were growing rapidly having germinated due to ~80 mm of rain in the previous 3 weeks.

Application was at either 75 or 150 L/ha using a 4 metre boom mounted on a Polaris Ace. The boom was equipped with eight AIXR110015 nozzles at 50 cm spacings, mounted 50 cm above the target. Operating pressure was 300Kpa, Application volume was varied by changing the speed of the Polaris.

Seedlings on the day of application showing the size of the Feathertop Rhodes grass weeds

MCA Ag Research

Results:

Assessment Date			20/12/2024	8/1/2025
			Feathertop Rhodes grass	Feathertop Rhodes grass
Assessment Type			% Burndown	Surviving weeds/m2
Sample Size			1 plot	1 plot
Number of Subsamples			1	1
Assessment Timing			13 DA-A	32 DA-A
ARM Action Codes				
Level	Description			
TABLE OF A (Herbicide treatment) MEANS				
1	Biffo 3.75L		90 -	0 -
2	Biffo 3.75L + AMS 1%		90 -	0 -
3	Biffo 3.75L + Liase 2%		88 -	0 -
4	Biffo 3.75L + Liase 10%		88 -	0 -
5	Biffo 3.75L + Outright 770 1%		88 -	0 -
6	Biffo 3.75L + On Course 0.25%		90 -	0 -
7	Biffo 3.75L + Cando 0.5%		88 -	0 -
8	Biffo 3.75L + Hasten 0.5%		88 -	0 -
9	Biffo 3.75L + Hasten 1%		83 -	0 -
10	Biffo 10L		90 -	0 -
TABLE OF B (Water volume) MEANS				
1	75 L/ha		89 -	0 -
2	150 L/ha		88 -	0 -
TABLE OF A (Herbicide treatment) B (Water volume) MEANS				
1	Biffo 3.75L	75 L/ha	90 -	0 -
2	Biffo 3.75L + AMS 1%	75 L/ha	90 -	0 -
3	Biffo 3.75L + Liase 2%	75 L/ha	87 -	0 -
4	Biffo 3.75L + Liase 10%	75 L/ha	87 -	0 -
5	Biffo 3.75L + Outright 770 1%	75 L/ha	87 -	0 -
6	Biffo 3.75L + On Course 0.25%	75 L/ha	90 -	0 -
7	Biffo 3.75L + Cando 0.5%	75 L/ha	90 -	0 -
8	Biffo 3.75L + Hasten 0.5%	75 L/ha	90 -	0 -
9	Biffo 3.75L + Hasten 1%	75 L/ha	87 -	0 -
10	Biffo 10L	75 L/ha	90 -	0 -
1	Biffo 3.75L	150 L/ha	90 -	0 -
2	Biffo 3.75L + AMS 1%	150 L/ha	90 -	0 -
3	Biffo 3.75L + Liase 2%	150 L/ha	90 -	0 -
4	Biffo 3.75L + Liase 10%	150 L/ha	90 -	0 -
5	Biffo 3.75L + Outright 770 1%	150 L/ha	90 -	0 -
6	Biffo 3.75L + On Course 0.25%	150 L/ha	90 -	0 -
7	Biffo 3.75L + Cando 0.5%	150 L/ha	87 -	0 -
8	Biffo 3.75L + Hasten 0.5%	150 L/ha	87 -	0 -
9	Biffo 3.75L + Hasten 1%	150 L/ha	80 -	0 -
10	Biffo 10L	150 L/ha	90 -	0 -

MCA Ag Research

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison

FACTORIAL/POOLED ERROR Least square estimation AOV For 20-Dec-2024 % Burndown at 13DAA

Source	DF	Sum of Squares	Mean Square	F
Total	59	965		
R	2	30	15	1
A	9	215	23.9	1.593
B	1	1.67	1.67	0.111
AB	9	148.3	16.48	1.099
ERROR	38	570	15	

Conclusions:

An assessment of % burndown was made 13 days after application of treatments. All treatments were rated as giving between 83 and 90% burndown. There was no significant difference between treatments.

At 32 days after treatment no surviving feathertop Rhodes grass plants were found in any plot.

Low numbers of caustic weed and nightshade plants were found but again there were no statistical differences between treatments.

Weeds in this trial were too small and treatments too effective. No meaningful results were obtained. Sub label rates might need to be used in future trial work.

MCA Ag Research

Appendices:

Crop Description

Crop 1:C YBRAC Fallow

Pest Description

Pest 1 Type:W **Code:**CHRVI Chloris virgata
Common Name: Feathertop Rhodes Grass **Stage Scale:**BBCH

Site and Design

Treated Plot Width:4 m
Treated Plot Length:12 m
Treated Plot Area:48.0 m2
Replications:3 **Treatments:**20 **Plots:**60
Distance between Blocks:1 m
Distance between 'Plot' Experimental Units:0 m

Site Type:FALLOW fallow
Experimental Unit:1 PLOT plot
Tillage Type:NOTILL no-till
Study Design: Factorial

Trial Initiation Comments:

Small weeds. Excellent growing conditions.

Previous crop: Wheat 2024
Brigalow soil

Weather Conditions

Weather Station Name: Long paddock Silo online **Distance:**0.5 km

Date	Moisture Total	Unit		Date	Moisture Total	Unit
16-Nov-2024	17.3	mm		11-Dec-2024	1	mm
19-Nov-2024	19.1	mm		15-Dec-2024	8.1	mm
20-Nov-2024	10.4	mm		18-Dec-2024	28.5	mm
21-Nov-2024	3.2	mm		19-Dec-2024	20.4	mm
29-Nov-2024	7.2	mm		27-Dec-2024	2.2	mm
30-Nov-2024	5.1	mm		28-Dec-2024	4.1	mm
1-Dec-2024	13.6	mm		30-Dec-2024	5.6	mm
4-Dec-2024	1.1	mm		31-Dec-2024	6.5	mm
5-Dec-2024	1.1	mm		1-Jan-2025	3.8	mm
10-Dec-2024	1.2	mm		3-Jan-2025	1.3	mm

Application Description

	A	B
Date	7-Dec-2024	7-Dec-2024
Start Time	6:30 AM	6:30 AM
Stop Time	8:30 AM	8:30 AM
Standard	POST	POST
Method	SPRAY	SPRAY
Timing	POSPOS	POSPOS
Placement	BROADC	BROADC
Mixed/Prepared By	Brendan Burton	Brendan Burton
Applied By	Brendan Burton	Brendan Burton
Entry Date	7-Dec-2024	7-Dec-2024
Air Temperature Start, Stop	24.8, 27.9 C	24.8, 27.9 C
% Relative Humidity Start, Stop	78, 66.9	78, 66.9
Wind Velocity+Dir. Start	11.5 KPH, N	11.5 KPH, N
Wind Velocity+Dir. Stop	9.6 KPH, N	9.6 KPH, N
% Cloud Cover	0	0
Problems with Application?	N, no	N, no

MCA Ag Research

Pest Stage At Application

	A & B
Pest 1 Code, Type, Scale	CHRVI, W, BBCH
Stage Majority, Percent	21, 80
Stage Minimum, Percent	15, 10
Stage Maximum, Percent	23, 10
Diameter Average	5 cm
Diameter Minimum, Maximum	4, 7
Height Average	4 cm
Height Minimum, Maximum	2, 7
Density Average	20 m2

Application Equipment

	A	B
Equipment Name	Polaris	Polaris
Equipment Type	BOOM	BOOM
Operation Pressure	300 kPa	300 kPa
Nozzle Model	110015	110015
Nozzle Type	AIXR	AIXR
Nozzle Spacing	50 cm	50 cm
Spray Swath	4.0 m	4.0 m
Boom Height	0.5 m	0.5 m
Boom Flow Rate	50 cm	50 cm
Ground Speed	9.4 km/h	4.7 km/h
Application Amount	75 L/ha	150 L/ha
Mix Size	5.0 L	5.0 L