



MCA Ag Research

Compatibility of residual herbicides with glufosinate. Sowthistle

Trial ID: BB2517

Protocol ID: MCA2502 Location: Brookstead Trial Year: 2025

Study Directors: Lawrie Price, Brendan Burton

Objectives:

To assess whether the addition of common fallow herbicides will aid or antagonise knockdown control of Biffo (glufosinate)

Materials and Methods:

A trial was sited in a fallow paddock infested with common sowthistle in a field near Brookstead, Queensland. Treatments were applied on April 30th 2025 to rosettes of 8 - 10 leaves and 12 to 30cm diameter. The initial population averaged 40 weeds/m². Excellent growing conditions prevailed during the trial.

A Biffo rate of 2L/ha was selected as the comparison rate because of the small size of the weeds. This rate is below the recommended label rate. Biffo at this rate was used either alone or tank-mixed with residual herbicides at their common use rates.

Application was at 100 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.



Seedlings on the day of application showing the size of the weeds



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Results:

Assessment Date	7/5/2025	14/5/2025	28/5/2025	28/5/2025
Assessment Type	% Burndown	% Control	Regrowing plants/m ²	Regrowing plants/m ²
Pest Name	Common Sowthistle	Common Sowthistle	Common Sowthistle	Flaxleaf Fleabane
Days After First/Last Appl.	7, 7	14, 14	28, 28	28, 28
ARM Action Codes			T1	T2
Trt Treatment	1*	2*	5*	6*
No. Name				
1 Biffo 2L	67 c	87 -	0.33 -	0.15 -
2 Biffo 3.75L	70 bc	93 -	0.12 -	0.13 -
3 Biffo 2L + Palmero 100g	70 bc	90 -	0.22 -	0.15 -
4 Biffo 2L + Dual Gold 1L	67 c	93 -	0.28 -	0.13 -
5 Biffo 2L + Terbyne Xtreme 1.2kg	70 bc	93 -	0.02 -	0.18 -
6 Biffo 2L + Valor EZE 0.29L	70 bc	87 -	0.35 -	0.08 -
7 Biffo 2L + Rifle 3.3L	73 b	85 -	0.32 -	0.28 -
8 Biffo 2L + Voraxor 0.28L	80 a	88 -	0.15 -	0.18 -
9 Biffo 2L + Fallowboss Tordon 1L	73 b	83 -	0.30 -	0.13 -
10 Biffo 2L + Tordon 75-D 1L	70 bc	92 -	0.02 -	0.00 -
11 Biffo 2L + Picoflex 0.315L	70 bc	96 -	0.12 -	0.03 -
12 Biffo 2L + Grindstone 32mL	70 bc	83 -	0.52 -	0.08 -
13 Biffo 2L + Palmero 100g + Terbyne X 0.86kg	70 bc	80 -	0.38 -	0.07 -
14 Biffo 2L + Dual Gold 1L + Terbyne X 0.86kg	70 bc	93 -	0.03 -	0.17 -
LSD P=.05	4.8	10.4	0.333	0.159
CV	4.01	6.97	88.13	74.24
Treatment Prob(F)	0.0014	0.0902	0.0969	0.1208

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 OSL.



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Discussion:

An assessment of % burndown was made at 7 days after application. Mixtures of Biffo with Rifle, Voraxor or Fallowboss Tordon appeared to increase the level of burndown compared to Biffo applied alone. No treatments showed any hint of antagonism

An estimate of % control was made for each plot at 14 days after application. There was no significant difference between treatments.

Counts of surviving weeds were made at 28 days after application. All treatments provided at least 98% control of common sowthistle. There were no differences between treatments. Biffo + Terbyne Xtreme and Biffo + Tordon 75-D plots had the least surviving weeds.

Flaxleaf fleabane was also present at a low density. There was no significant difference between treatments. The Mixtures of Biffo with Tordon 75-D or Picoflex left the least surviving weeds.

Conclusion:

None of the residual herbicides tested in this trial appeared to antagonise knockdown control of common sowthistle by Biffo.

Appendices:

Crop Description

Crop 1:C YBRAC Fallow

Pest Description

Pest 1 Type:W Code: SONOL Sonchus oleraceus
Common Name: Common Sowthistle

Stage Scale:BBCH

Pest 2 Type:W Code: ERIBO Conyza bonariensis
Common Name: Flaxleaf fleabane

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: 14 Plots: 42

Site Type: FALLOW fallow
Experimental Unit: 1 PLOT plot
Tillage Type: NOTILL no-till
Study Design: RACOB L Randomized Complete Block (RCB)

Distance between Blocks: 1 m
Distance between 'Plot' Experimental Units: 0 m

Trial Initiation Comments:

Small weeds. Excellent growing conditions.

Previous crop: Wheat 2024
Poplar Box soil (Black vertisol)



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Weather Conditions

Weather Station Name: Grower recording

Distance: 0.3 km

Date	Moisture Total	Unit
3-Apr-2025	40	mm
22-Apr-2025	3	mm
27-Apr-2025	10	mm
15-May-2025	3	mm
17-May-2025	16	mm
31-May-2025	5	mm

Application Description

	A
Date	30-Apr-2025
Start Time	9:00 AM
Stop Time	10:40 AM
Standard	EPOW
Method	SPRAY
Timing	EAPOWE
Placement	BROADC
Mixed/Prepared By	Brendan Burton
Applied By	Brendan Burton
Entry Date	30-Apr-2025
Air Temperature Start, Stop	27.5, 28.7 C
% Relative Humidity Start, Stop	58.5, 47.6
Wind Velocity+Dir. Start	1.4 KPH, SE
Wind Velocity+Dir. Stop	2.4 KPH, S
% Cloud Cover	15
Problems with Application?	N, no

Pest Stage At Application

	A	A
Pest 1 Code, Type, Scale	SONOL, W, BBCH	ERIBO, W, BBCH
Stage Majority, Percent	25, 20	25
Stage Minimum, Percent	19, 75	
Stage Maximum, Percent	31, 5	
Diameter Average	20 cm	3 cm
Diameter Minimum, Maximum	12, 30	3, 5
Height Average	5 cm	1 cm
Height Minimum, Maximum	3, 25	1
Density Average	40 PLA/m2	2 PLA/m2

Application Equipment

	A
Equipment Name	Polaris
Equipment Type	BOOM
Operation Pressure	300 kPa
Nozzle Model	110015
Nozzle Type	AIXR
Nozzle Spacing	50 cm
Spray Swath	8
Boom Height	4.0 m
Boom Flow Rate	50.0 cm
Ground Speed	7.3 KPH
Application Amount	100 L/ha
Mix Size	5.0 L