

Disclaimer:

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Any product referred to in this document must be used strictly as directed, and in accordance with all label or permit instructions. Always consult the label prior to use.

Residual Control of Tall Fleabane in Fallow

Trial ID: LB2117

Location: Macalister
Investigator: Linda Bailey

Trial Year: 2022

In recent years, tall fleabane has become a major fallow problem weed due to the lack of effective knockdown herbicide options. Knockdown herbicide programs suitable for flaxleaf fleabane generally have poor efficacy on tall fleabane. This trial was conducted to screen a range of herbicides, with existing or planned fallow registrations, for potential to assist in the management of tall fleabane.

Objective:	To evaluate residual control of tall fleabane in fallow
Previous Crop:	Wheat 2021
Situation:	Fallow with ~10-15 cm tall wheat stubble and ~95% ground cover
Application Date:	11/02/2022
Nozzles:	AIXR110015
Volume:	100 L/ha
Trial Design:	Randomised block of 15 treatments x 4 replicates
Plot Size:	4m x 12m
Keywords:	Common sowthistle, tall fleabane, residual, fallow

The trial was conducted in a paddock following wheat in 2021 with very high levels of groundcover.

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The trial was initiated ~7-8 days after ~57 mm of rainfall. A commercial knockdown fallow application was applied 4 days prior to the residual application to control established weeds.

No product has a registration for the residual control of tall fleabane. Balance, Terbyne Xtreme and Valor all have fallow registrations for the residual control of both common sowthistle and flaxleaf fleabane. Dual Gold has a fallow registration for the residual control of common sowthistle.

Scientific Pest Name			<i>Sonchus oleraceus</i>			<i>Conyza sumatrensis</i>		<i>Conyza bonariensis</i>
Pest Name			Common sowthistle			Tall fleabane		Flaxleaf fleabane
Assessment Date			14/03/2022	2/05/2022	2/05/2022	2/05/2022	2/08/2022*	2/05/2022
Assessment Type			COUNT	COUNT	CONTROL	COUNT	COUNT	COUNT
Assessment Unit			/m ²	/m ²	%	/m ²	/m ²	/m ²
Sample Area			10 m x 1 m	10 m x 1 m	10 m x 1 m	10 m x 1 m	10 m x 1 m	10 m x 1 m
Pest Stage Majority			1-3 leaf	6 leaf	6 leaf	Stem elongation	5-20cm rosette	Stem elongation
Treatment-Evaluation Interval			31 DAA	80 DAA	80 DAA	80 DAA	172 DAA	80 DAA
ARM Action Codes				AA	AA			AL
Trt No.	Treatment	Product Rate						
1	Untreated	-	0.2bc	0.6abc	-	0.2-	0.3-	1.7-
2	Dual Gold	2000ml/ha	0.3ab	1.0ab	0	0.0-	0.4-	1.4-
3	Dual Gold Valor	2000ml/ha 210g/ha	0.0c	0.4bcd	33	2.1-	0.5-	1.7-
4	Impose	150ml/ha	0.1bc	0.3bcd	50	0.4-	0.2-	1.2-
5	Impose Valor	150ml/ha 210g/ha	0.0c	0.1cd	83	0.6-	0.5-	1.1-
6	Balance	100g/ha	0.1bc	0.3bcd	50	0.3-	0.3-	1.2-
7	Terbyne Xtreme	1200g/ha	0.0c	0.4bcd	33	0.5-	0.6-	2.2-
8	Valor	210g/ha	0.0c	0.1cd	83	0.1-	0.2-	0.7-
9	Valor	280g/ha	0.0c	0.1d	83	0.1-	0.2-	0.6-
10	Group 14 R	1500ml/ha	0.0c	0.3bcd	50	0.2-	0.4-	1.4-
11	Voraxor	200ml/ha	0.0c	0.5bcd	17	0.1-	0.5-	1.0-
12	Voraxor	240ml/ha	0.0c	0.4bcd	33	0.1-	0.6-	0.9-
13	Gesaprim	2000g/ha	0.1bc	0.5bcd	17	0.0-	0.2-	0.5-
14	Tordon 75-D	1000ml/ha	0.0c	0.3cd	50	0.7-	0.3-	2.1-
15	Group 27 C	200ml/ha	0.4a	1.4a	0	0.1-	0.3-	1.7-
LSD P=.05			0.21	2.53t	n/a	nsd	nsd	nsd
Treatment Prob.(F)=			0.0049	0.0315	n/a	0.5740	0.4570	0.9989

Means followed by same letter do not significantly differ (P=.05, LSD)

t=Mean descriptions are reported in transformed data units, and are not de-transformed.

Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.

*tall fleabane counts on 2/08/2022 were a new cohort of weeds that emerged after the May assessment.

ARM Action Codes

AL = Automatic log transformation of X+1

AA = Automatic arcsine square root % transformation

DAA = Days after Application

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Conclusions:

This trial was established to screen potential options for the residual control of tall fleabane in fallow. Stubble levels were very high (~95%) following harvest of the 2021 wheat crop. The trial was established in the second week of February 2022, ~ 1 week after the site recorded ~57 mm of rain. Total rainfall of ~530 mm was received during the 6 months that the trial was conducted with ~14 mm of rain received ~9 days after residual herbicide application.

An initial assessment was conducted 31 days after application (31 DAA) with very low weed numbers present despite ~170 mm of rainfall being received. Seedling common sowthistle (~1-3 leaf) were present at ~0.2/m². Although there were no common sowthistle present in treatments that included Valor, Voraxor, Terbyne Xtreme, the experimental Group 14 herbicide or Tordon 75-D, the untreated weed density was too variable and low to show significant differences.

During the following 7 weeks, an additional ~107 mm of rainfall was recorded with a second weed assessment made at 80 DAA. Common sowthistle densities had increased in the untreated to ~0.6/m². The majority of sowthistle were at the 4-7 leaf stage but advanced plants weeds were at early flowering. No treatment provided complete control of common sowthistle but with >80% reduction in numbers where Valor was used alone or in mixture with Impose. Only Valor 280 g/ha provided a significant reduction in common sowthistle counts compared to the untreated. Neither Dual Gold alone or the experimental Group 27 herbicide showed any suppression of common sowthistle numbers, at either assessment.

Low fleabane numbers were present at 80 DAA with untreated populations of tall fleabane at 0.2/m² and flaxleaf fleabane at 1.7/m². There were no significant differences for either species.

A new cohort of tall fleabane was present 3 months later when a final count of weeds was made at 172 DAA. An additional 254 mm of rain had been recorded between assessments 2 and 3. Although tall fleabane counts were still low, there was no apparent effect from any herbicide.

At this site, with very high levels of groundcover from the 2021 wheat harvest and ~170 mm of rainfall in the first month after application, no herbicide showed useful residual activity against either tall or flaxleaf fleabane. Valor 280 g/ha was the only treatment to provide significant control of a trace population of common sowthistle at 80 DAA.

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Application Description	
Application Date:	11/02/2022
Application Start Time:	10:30 AM
Application Stop Time:	12:40 PM
Application Method:	SPRAY
Application Timing:	PRE-EMERGENT
Air Temperature:	31.2 C
% Relative Humidity:	37.2
Wind Velocity:	9.1 km/h
Wind Direction:	SE
Soil Moisture:	DRY
% Cloud Cover:	0
Next Moisture Occurred On:	20/02/2022

Application Equipment	
Application Equipment:	Polaris
Equipment Type:	BOOM
Operation Pressure:	400 kPa
Nozzle Type:	AIXR
Nozzle Size:	110015
Nozzle Spacing:	50 cm
Boom Length:	4 m
Boom Height:	50 cm
Ground Speed:	8.2 km/h
Spray Volume:	100 L/ha

Monthly Rainfall:

Closest Weather Station:	SILO grid point -27.10, 151.00
Distance:	~2.3 km

Date	Amount	Unit	Additional Comments
February 2022	135	mm	Application on 11/2/2022 ~14 mm on DAA 9
March 2022	129	mm	~35 mm prior to 1 st assessment 14/3/2022
April 2022	14	mm	Commercial knockdown applied 29/4/2022
May 2022	171	mm	2 nd assessment 2/5/2022
June 2022	20	mm	
July 2022	63	mm	
August 2022	-	mm	3 rd assessment 2/8/2022