

Disclaimer:

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Knockdown Control of Tall Fleabane in Fallow

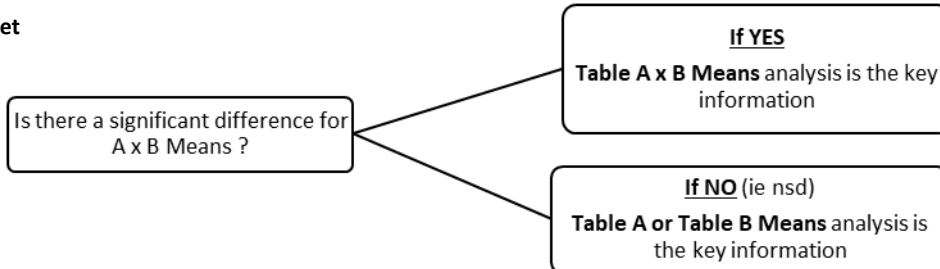
Trial ID: LB1818 **Location:** Chinchilla **Trial Year:** 2019
investigator: Linda Bailey

Objective:	To screen options for Tall Fleabane management	
Situation:	Fallow	
Application:	A (First Knock)	B (Second Knock)
Application Date:	11/06/2019	18/06/2019 (7 days after Application A)
Nozzles:	AIXR110015	
Volume:	100 L/ha	
Pressure:	300 kPa	
Weed:	Tall Fleabane	
Weed Population:	30 plants/m ²	
Weed Stage at Application:	5-9 leaf, ~5 cm diameter	
Keywords:	Tall Fleabane, knockdown, double knock, fallow	

Trial designed and analysed as a Strip Plot

	In Simple Terms
Table of A Means:	Mean of 'First knock' performance with ALL 'Second knock' treatments
Table of B Means:	Mean of 'Second knock' performance with ALL 'First knock' treatments
Table of A x B Means:	'First knock' performance with EACH 'Second knock' treatment

How to Interpret



Second knock: Gramoxone 1600 mL/ha + Sharpen 9 g/ha + Hasten 1%

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Key analyses are highlighted in grey in the analysis of variance tables below

Pest Scientific Name				<i>Conyza sumatrensis</i>	
Pest Name				Tall Fleabane	
Assessment Date				25/06/2019	11/09/2019
Assessment Type				BURNDOWN	COUNT
Assessment Unit				%	/m ²
Treatment-Evaluation Interval				14 DAA	92 DAA
ARM Action Codes					AL
Trt No.	Treatment	Product Rate	Appl. Code		
TABLE OF A MEANS (First Knock)					
1	Knockout 450	1000ml/ha	A	38.3f	5.7ta
2	Knockout 450	2000ml/ha	A	49.2de	4.5tab
3	Knockout 450	4000ml/ha	A	56.7cd	2.1tb
4	Knockout 450	2000ml/ha	A	39.2ef	0.3tc
	Amine 625	1500ml/ha	A		
	Hasten	1% v/v	A		
5	Weedmaster DST	1920ml/ha	A	53.3cd	0.2tc
	Amicide Advance 700	1100ml/ha	A		
	Hasten	1% v/v	A		
6	Knockout 450	2000ml/ha	A	95.8a	0.3tc
	Sharpen	34g/ha	A		
	Hasten	1% v/v	A		
7	Knockout 450	2000ml/ha	A	62.5c	2.2tb
	Group HC V	1000ml/ha	A		
	Hasten	1% v/v	A		
8	Knockout 450	2000ml/ha	A	60.8c	0.3tc
	Pixxaro	400ml/ha	A		
	Uptake	0.5% v/v	A		
9	Experimental 1	4000ml/ha	A	80.0b	0.4tc
	Uptake	0.5% v/v	A		
10	Knockout 450	2000ml/ha	A	93.3a	0.6tc
	Basta	3750ml/ha	A		
11	Knockout 450	2000ml/ha	A	59.2cd	0.1tc
	Grazon Extra	400ml/ha	A		
	Uptake	0.5% v/v	A		
12	Experimental 2	8500ml/ha	A	29.2f	0.1tc
	Experimental 3	2800g/ha	A		
	Hasten	1% v/v	A		
13	Gramoxone	2400ml/ha	A	53.3cd	6.1ta
TABLE OF B MEANS (Second Knock)					
1	First Knock only	-	-	36.3b	1.8ta
2	Gramoxone	1600ml/ha	B	82.3a	0.6tb
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		

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.

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Assessment Type				BURNDOWN	COUNT
Assessment Unit				%	/m ²
Treatment-Evaluation Interval				14 DAA	92 DAA
ARM Action Codes					AL
Trt No.	Treatment	Product Rate	Appl. Code		
TABLE OF A x B MEANS (First Knock x Second Knock)					
1	Knockout 450	1000ml/ha	A	6.7i	10.1ta
1b	Knockout 450	1000ml/ha	A	70.0d	3.0tbc
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
2	Knockout 450	2000ml/ha	A	10.0hi	8.8ta
2b	Knockout 450	2000ml/ha	A	88.3abc	2.1tbcd
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
3	Knockout 450	4000ml/ha	A	23.3g	3.9tb
3b	Knockout 450	4000ml/ha	A	90.0abc	0.9td-g
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
4	Knockout 450	2000ml/ha	A	25.0fg	0.8te-h
	Amine 625	1500ml/ha	A		
	Hasten	1% v/v	A		
4b	Knockout 450	2000ml/ha	A	53.3e	0.0ti
	Amine 625	1500ml/ha	A		
	Hasten	1% v/v	A		
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
5	Weedmaster DST	1920ml/ha	A	23.3g	0.3tghi
	Amicide Advance 700	1100ml/ha	A		
	Hasten	1% v/v	A		
5b	Weedmaster DST	1920ml/ha	A	83.3c	0.1thi
	Amicide Advance 700	1100ml/ha	A		
	Hasten	1% v/v	A		
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
6	Knockout 450	2000ml/ha	A	93.3abc	0.4tf-i
	Sharpen	34g/ha	A		
	Hasten	1% v/v	A		
6b	Knockout 450	2000ml/ha	A	98.3a	0.2tghi
	Sharpen	34g/ha	A		
	Hasten	1% v/v	A		
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		

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Pest Scientific Name Pest Name Assessment Date Assessment Type Assessment Unit Treatment-Evaluation Interval ARM Action Codes				<i>Conyza sumatrensis</i> Tall Fleabane	
				25/06/2019 BURNDOWN %	11/09/2019 COUNT /m ²
Trt No.	Treatment	Product Rate	Appl. Code	14 DAA	92 DAA AL
7	Knockout 450 Group HC V Hasten	2000ml/ha 1000ml/ha 1% v/v	A A A	33.3fg	3.3tb
7b	Knockout 450 Group HC V Hasten Gramoxone Sharpen Hasten	2000ml/ha 1000ml/ha 1% v/v 1600ml/ha 9g/ha 1% v/v	A A A B B B	91.7abc	1.4tcde
8	Knockout 450 Pixxaro Uptake	2000ml/ha 400ml/ha 0.5% v/v	A A A	30.0fg	0.5te-i
8b	Knockout 450 Pixxaro Uptake Gramoxone Sharpen Hasten	2000ml/ha 400ml/ha 0.5% v/v 1600ml/ha 9g/ha 1% v/v	A A A B B B	91.7abc	0.1thi
9	Experimental 1 Uptake	4000ml/ha 0.5% v/v	A A	66.7d	0.7te-h
9b	Experimental 1 Uptake Gramoxone Sharpen Hasten	4000ml/ha 0.5% v/v 1600ml/ha 9g/ha 1% v/v	A A B B B	93.3abc	0.1tghi
10	Knockout 450 Basta	2000ml/ha 3750ml/ha	A A	90.0abc	1.3tdef
10b	Knockout 450 Basta Gramoxone Sharpen Hasten	2000ml/ha 3750ml/ha 1600ml/ha 9g/ha 1% v/v	A A B B B	96.7ab	0.1tghi
11	Knockout 450 Grazon Extra Uptake	2000ml/ha 400ml/ha 0.5% v/v	A A A	26.7fg	0.2tghi
11b	Knockout 450 Grazon Extra Uptake Gramoxone Sharpen Hasten	2000ml/ha 400ml/ha 0.5% v/v 1600ml/ha 9g/ha 1% v/v	A A A B B B	91.7abc	0.0ti

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Assessment Date				25/06/2019	11/09/2019
Assessment Type				BURNDOWN	COUNT
Assessment Unit				%	/m ²
Treatment-Evaluation Interval				14 DAA	92 DAA
ARM Action Codes					AL
Trt No.	Treatment	Product Rate	Appl. Code		
12	Experimental 2	8500ml/ha	A	21.7gh	0.0ti
	Experimental 3	2800g/ha	A		
	Hasten	1% v/v	A		
12b	Experimental 2	8500ml/ha	A	36.7f	0.1tghi
	Experimental 3	2800g/ha	A		
	Hasten	1% v/v	A		
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		
13	Gramoxone	2400ml/ha	A	21.7gh	10.8ta
13b	Gramoxone	2400ml/ha	A	85.0bc	3.3tb
	Gramoxone	1600ml/ha	B		
	Sharpen	9g/ha	B		
	Hasten	1% v/v	B		

Assessment Type

BURNDOWN = % Burndown/brown out

ARM Action Codes

AL = Automatic log transformation of X+1

DAA = Days after Application A

COMPLETE STRIP-BLOCK AOV						
<i>Conyza sumatrensis</i> - Tall Fleabane						
25/06/2019						
BURNDOWN % 14 DAA						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	77	85436.217949				
R	2	62.179487	31.089744	0.613	0.5498	
A	12	29207.051282	2433.920940	33.775	0.0001	10.1
RA	24	1729.487179	72.061966			
B	1	41308.012821	41308.012821	1416.275	0.0007	5.3
RB	2	58.333333	29.166667			
AB	12	11854.487179	987.873932	19.487	0.0001	12.0
RAB	24	1216.666667	50.694444			

COMPLETE STRIP-BLOCK AOV						
<i>Conyza sumatrensis</i> - Tall Fleabane						
11/09/2019						
COUNT /m ² 92 DAA AL						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	77	10.316278				
R	2	0.060575	0.030287	1.597	0.2233	
A	12	6.999688	0.583307	12.572	0.0001	0.3
RA	24	1.113521	0.046397			
B	1	1.114604	1.114604	84.960	0.0116	0.1
RB	2	0.026238	0.013119			
AB	12	0.546490	0.045541	2.401	0.0327	0.2
RAB	24	0.455162	0.018965			

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Conclusions:

The trial was established to screen options for tall fleabane management. The tall fleabane population was ~30 weeds/m² and at small rosette stage (~5-9 leaves and ~5 cm in diameter) when the first knock was applied. The second knock of Gramoxone 1.6 L/ha + Sharpen 9 g/ha + Hasten 1% was applied 7 days later.

Burndown was assessed 14 days after the first knock was applied. Knockout 450 (glyphosate 450 g/L) + Sharpen + Hasten and Knockout 450 + Basta had the highest level burndown of the first knock treatments alone (>90%) with no significant benefit from the second knock. All other first knock treatments had significantly increased burndown following the second knock application.

Surviving weed counts were taken 92 days after the first knock application. First knock only treatments of Knockout 450 mixed with Amicide Advance + Hasten, Sharpen + Hasten, Pixxaro + Uptake or Grazon Extra + Uptake together with the mixture of Experimental 2 and 3, all provided >98% control. The second knock application did not significantly increase control of these treatments but resulted in final control >99% in all cases. However the second knock application did significantly increase control for the less effective first knock options.

The poorest options for tall fleabane control were Knockout 450 alone or when followed by a second knock or Gramoxone alone or followed by the second knock application.

This initial screening trial indicated that mixtures of glyphosate with 2,4-D (Amicide Advance or Amine 625), Grazon Extra, Sharpen or Pixxaro may be useful options for management of small rosette staged tall fleabane, particularly when followed with a second knock of Gramoxone + Sharpen + Hasten. In addition the mixture of Experimentals 2 and 3 appeared promising as a first knock option or when double knocked.

Application Description		
	A	B
Application Date:	11/06/2019	18/06/2019
Appl. Start Time:	12:20 PM	2:25 PM
Appl. Stop Time:	2:40 PM	2:40 PM
Application Method:	SPRAY	
Application Timing:	EARLY POST-EM	
Application Placement:	FOLIAR	
Air Temperature, Unit:	24 C	21 C
% Relative Humidity:	47	44
Wind Velocity, Unit:	1.7 km/h	10 km/h
Wind Direction:	SSE	S
Dew Presence (Y/N):	No	
Soil Moisture:	DRY	
% Cloud Cover:	10	0
Next Moisture Occurred On:	16/06/2019	26/06/2019

Application Equipment		
	A	B
Application Equipment:	Polaris	
Equipment Type:	BOOM	
Operation Pressure, Unit:	300 kPa	
Nozzle Type:	AIXR	
Nozzle Size:	110015	
Nozzle Spacing, Unit:	50 cm	
Nozzles/Row:	8	
Boom Length, Unit:	4 m	
Boom Height, Unit:	50 cm	
Ground Speed, Unit:	7.2 km/h	
Spray Volume, Unit:	100 L/ha	