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Knockdown Control of Tarvine in Fallow

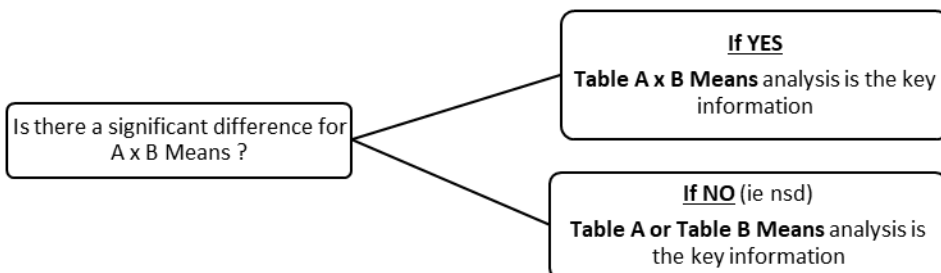
Trial ID: LB1820	Location: Kaimkillenbun	Trial Year: 2018
Investigator:	Linda Bailey	

Objective:	To screen options for the knockdown control of Tarvine in fallow	
Application:	A (First Knock)	B (Second Knock)
Application Date:	11/12/2018	22/12/2018 (11 Days after Application A)
Nozzles:	AIXR110015	
Volume:	100 L/ha	
Pressure:	300 kPa	
Weed Population:	1 plant/m ²	
Weed Stage at Application:	Full flowering	
Keywords:	Tarvine, 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 'First Knock' performance with ALL 'Second Knock' treatments
Table of A x B Means:	'First Knock' performance with EACH 'Second Knock' treatment

How to interpret?



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

Pest Scientific Name				<i>Boerhavia dominii</i>			
Pest Name				Tarvine			
Assessment Date				7/01/2019	21/01/2019	21/01/2019	21/01/2019
Assessment Type				BURNDOWN	BURNDOWN	GROUND COVER	REGROWING
Assessment Unit				%	%	%	/m ²
Treatment-Evaluation Interval				27 DAA/ 11 DAB	41 DAA/ 30 DAB	41 DAA/ 30 DAB	41 DAA/ 30 DAB
ARM Action Codes					AL		
Trt No.	Treatment	Product Rate	Appln. Code				
TABLE OF A MEANS (First Knock)							
1	Glyphosate CT	1000 ml/ha	A	28hi	4tbc	42-	0.62-
2	Glyphosate CT	2000 ml/ha	A	47bc	5tbc	39-	0.56-
3	Glyphosate CT	4000 ml/ha	A	45cd	3tbc	41-	0.56-
4	Sharpen	34 g/ha	A	28hi	2tcd	50-	0.63-
	Hasten	1 % v/v	A				
5	Tordon 75-D	1000 ml/ha	A	73a	19ta	40-	0.75-
6	Group HC V	1000 ml/ha	A	38fg	4tbc	49-	0.64-
	Hasten	1 % v/v	A				
7	Pixxaro	600 ml/ha	A	44cde	5tbc	43-	0.58-
	Uptake	0.5 % v/v	A				
8	Group HC T	1000 ml/ha	A	40def	4tbc	53-	0.62-
	Adigor	0.5 % v/v	A				
9	Basta	3750 ml/ha	A	52b	9tab	26-	0.42-
10	Kamba 750	375 ml/ha	A	48bc	5tbc	33-	0.46-
11	Starane Advanced	450 ml/ha	A	33gh	5tbc	49-	0.64-
12	Balance	100 g/ha	A	23i	0td	40-	0.49-
	Gramoxone	1600 ml/ha	A				
13	Gramoxone	1600 ml/ha	A	33gh	6tbc	47-	0.63-
14	Gramoxone	2400 ml/ha	A	50bc	4tbc	24-	0.33-
15	Sharpen	9 g/ha	A	38efg	5tbc	56-	0.71-
	Gramoxone	1600 ml/ha	A				
	Hasten	1 % v/v	A				
TABLE OF B MEANS (Second Knock)							
1	First knock only	-	A	11b	0t b	57a	0.71a
2	Gramoxone	1600 ml/ha	B	72a	20t a	27b	0.44b
TABLE OF A x B MEANS (First Knock x Second Knock)							
1	Glyphosate CT	1000 ml/ha	A	3hij	0t -	67-	1.11-
1b	Glyphosate CT	1000 ml/ha	A	53f	23t -	17-	0.14-
	Gramoxone	1600 ml/ha	B				
2	Glyphosate CT	2000 ml/ha	A	10hij	0t -	52-	0.72-
2b	Glyphosate CT	2000 ml/ha	A	83abc	33t -	27-	0.39-
	Gramoxone	1600 ml/ha	B				
3	Glyphosate CT	4000 ml/ha	A	13h	0t -	53-	0.69-
3b	Glyphosate CT	4000 ml/ha	A	77cd	18t -	28-	0.42-
	Gramoxone	1600 ml/ha	B				
4	Sharpen	34 g/ha	A	2ij	0t -	52-	0.50-
	Hasten	1 % v/v	A				
4b	Sharpen	34 g/ha	A	53f	9t -	48-	0.75-
	Hasten	1 % v/v	A				
	Gramoxone	1600 ml/ha	B				

Means followed by same letter do not significantly differ (P=0.05, 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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Pest Scientific Name Pest Name Assessment Date Assessment Type Assessment Unit Treatment-Evaluation Interval ARM Action Codes				<i>Boerhavia dominii</i>			
				Tarvine			
				7/01/2019 BURNDOWN %	21/01/2019 BURNDOWN %	21/01/2019 GROUND COVER %	21/01/2019 REGROWING /m ²
				27 DAA	41 DAA AL	41 DAA	41 DAA
Trt No.	Treatment	Product Rate	Appln. Code				
5	Tordon 75-D	1000 ml/ha	A	53f	10t-	50-	0.81-
5b	Tordon 75-D	1000 ml/ha	A	93a	34t-	30-	0.69-
	Gramoxone	1600 ml/ha	B				
6	Group HC V	1000 ml/ha	A	8hij	0t-	67-	0.72-
	Hasten	1 % v/v	A				
6b	Group HC V	1000 ml/ha	A	67de	23t-	32-	0.56-
	Hasten	1 % v/v	A				
	Gramoxone	1600 ml/ha	B				
7	Pixxaro	600 ml/ha	A	12hi	0t-	60-	0.78-
	Uptake	0.5 % v/v	A				
7b	Pixxaro	600 ml/ha	A	77cd	38t-	25-	0.39-
	Uptake	0.5 % v/v	A				
	Gramoxone	1600 ml/ha	B				
8	Group HC T	1000 ml/ha	A	0j	0t-	73-	0.89-
	Adigor	0.5 % v/v	A				
8b	Group HC T	1000 ml/ha	A	80bc	25t-	33-	0.36-
	Adigor	0.5 % v/v	A				
	Gramoxone	1600 ml/ha	B				
9	Basta	3750 ml/ha	A	10hij	1t-	38-	0.53-
9b	Basta	3750 ml/ha	A	93a	43t-	13-	0.31-
	Gramoxone	1600 ml/ha	B				
10	Kamba 750	375 ml/ha	A	8hij	0t-	52-	0.47-
10b	Kamba 750	375 ml/ha	A	88ab	39t-	13-	0.44-
	Gramoxone	1600 ml/ha	B				
11	Starane Advanced	450 ml/ha	A	7hij	0t-	73-	0.89-
11b	Starane Advanced	450 ml/ha	A	60ef	39t-	25-	0.39-
	Gramoxone	1600 ml/ha	B				
12	Balance	100 g/ha	A	13h	0t-	43-	0.42-
	Gramoxone	1600 ml/ha	A				
12b	Balance	100 g/ha	A	33g	1t-	37-	0.56-
	Gramoxone	1600 ml/ha	A				
	Gramoxone	1600 ml/ha	B				
13	Gramoxone	1600 ml/ha	A	10hij	1t-	63-	0.83-
13b	Gramoxone	1600 ml/ha	A	57ef	22t-	30-	0.42-
	Gramoxone	1600 ml/ha	B				
14	Gramoxone	2400 ml/ha	A	8hij	1t-	37-	0.47-
14b	Gramoxone	2400 ml/ha	A	92a	11t-	12-	0.19-
	Gramoxone	1600 ml/ha	B				
15	Sharpen	9 g/ha	A	10hij	1t-	72-	0.83-
	Gramoxone	1600 ml/ha	A				
	Hasten	1 % v/v	A				
15b	Sharpen	9 g/ha	A	67de	13t-	40-	0.58-
	Gramoxone	1600 ml/ha	A				
	Hasten	1 % v/v	A				
	Gramoxone	1600 ml/ha	B				

Knockdown Control of Tarvine in Fallow

Trial ID: LB1820

Location:

Kaimkillenbun

Trial Year:

2018

COMPLETE STRIP-BLOCK AOV <i>Boerhavia dominii</i> - Tarvine 7/01/2019 BURNDOWN % 27 DAA/ 16 DAB						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	89	104051.388889				
R	2	337.222222	168.611111	4.129	0.0268	
A	14	12855.555556	918.253968	33.343	0.0001	6
RA	28	771.111111	27.539683			
B	1	81902.500000	81902.500000	581.556	0.0017	11
RB	2	281.666667	140.833333			
AB	14	6760.000000	482.857143	11.825	0.0001	11
RAB	28	1143.333333	40.833333			

COMPLETE STRIP-BLOCK AOV <i>Boerhavia dominii</i> - Tarvine 21/01/2019 BURNDOWN % 41 DAA/ 30 DAB AL						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	89	48.096054				
R	2	0.045341	0.022670	0.127	0.8813	
A	14	4.780261	0.341447	2.722	0.0117	0
RA	28	3.512825	0.125458			
B	1	30.904067	30.904067	154.187	0.0064	0
RB	2	0.400865	0.200432			
AB	14	3.452967	0.246640	1.381	0.2260	1
RAB	28	4.999729	0.178562			

COMPLETE STRIP-BLOCK AOV <i>Boerhavia dominii</i> - Tarvine 21/01/2019 GROUND COVER % 41 DAA/ 30 DAB						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	89	51244.722222				
R	2	0.555556	0.277778	0.001	0.9988	
A	14	7173.888889	512.420635	1.019	0.4635	27
RA	28	14082.777778	502.956349			
B	1	19506.944444	19506.944444	174.256	0.0057	10
RB	2	223.888889	111.944444			
AB	14	3630.555556	259.325397	1.096	0.4021	26
RAB	28	6626.111111	236.646825			

Knockdown Control of Tarvine in Fallow

Trial ID: **LB1820** Location: **Kaimkillenbun** Trial Year: **2018**

COMPLETE STRIP-BLOCK AOV <i>Boerhavia dominii</i> - Tarvine 21/01/2019 REGROWING /m² 41 DAA / 30 DAB						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	89	10.570139				
R	2	0.034722	0.017361	0.175	0.8403	
A	14	1.034259	0.073876	0.633	0.8151	0.40
RA	28	3.268519	0.116733			
B	1	1.667361	1.667361	379.105	0.0026	0.06
RB	2	0.008796	0.004398			
AB	14	1.780556	0.127183	1.283	0.2776	0.53
RAB	28	2.775926	0.099140			

Assessment Type

BURNDOWN = % Burndown/brown out

ARM Action Codes

AL = Automatic log transformation of X+1

DAA = Days after Application A, DAB = Days after Application B

Conclusions:

The trial was established to screen herbicides for tarvine management. The tarvine population was ~1 weed/m² and at flowering (~0.5 m or more in diameter) when the first knock was applied. Four days after the first knock application, ~147 mm rainfall was received. A second knock of Gramoxone at 1.6 L/ha was applied 11 days after the first knock treatments.

Burndown assessments were conducted 27 and 41 days after the first knock application. At 27 days after the first knock, Tordon 75-D (Group I), Basta (Group N) and Gramoxone (Group L) followed by a second knock of Gramoxone provided >90% burndown. However by 41 days, all first knock alone treatments showed little to no burndown symptoms, with burndown ratings in the double knocked treatments all <45%.

At 41 days a percentage of the plot covered by weeds (% ground cover) was recorded along with a surviving weed count. All products tested provided inadequate control of tarvine. The second knock significantly reduced % ground cover and the number of surviving weeds compared to the first knock alone, however, the level of control was low and weeds were regrowing in all plots.

Under these conditions, no treatment provided acceptable levels of tarvine suppression.

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Application Description		
	A	B
Application Date:	11/12/2018	22/12/2018
Application Start Time:	9:30 AM	9:00 AM
Application Stop Time:	1:30 PM	9:15 AM
Application Method:	SPRAY	
Application Timing:	LATE POST-EM	
Application Placement:	FOLIAR	
Applied By:	L Bailey	
Air Temperature, Unit:	29 C	28 C
% Relative Humidity:	43	68
Wind Velocity, Unit:	10 km/h	10 km/h
Wind Direction:	NE	E
Dew Presence (Y/N):	No	No
Soil Moisture:	DRY	SLIWET
% Cloud Cover:	40	70
Next Moisture Occurred On:	14/12/2018	22/12/2018

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	7.2 km/h
Spray Volume, Unit:	100 L/ha	100 L/ha
Mix Size, Unit:	5 L	10 L