

**Disclaimer:**

This document is based on the results from an individual trial and may contain experimental use patterns that are currently off-label. **This document does not provide any interpretation and should not be taken as an endorsement of any unregistered use pattern.**

Professional advice should be sought for specific recommendations to ensure access to the most up to date information and knowledge.

**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.**

## Alternatives to Paraquat in a Double Knock

Trial ID: **LB1810**                      Location: **Wychie**                      Trial Year: **2018**  
 Investigator: **Linda Bailey**

<b>Objective:</b>	To evaluate alternative second knock options for broadleaf weed control	
<b>Situation:</b>	Fallow	
<b>Application Code:</b>	<b>A</b>	<b>B</b>
<b>Application Date:</b>	<b>20/04/2018</b>	<b>27/04/2018</b>
<b>Application Timing:</b>	<b>Early Post-Emergent</b>	<b>7 Days after Appln. A</b>
<b>Application Volume:</b>	<b>50L/ha</b>	<b>100L/ha</b>
<b>Weed Stage:</b>	<b>8 Leaf Rosettes, ~20cm diameter (~90% of Population)</b>	
<b>Weed Range:</b>	<b>3 Leaf to Stem Elongation</b>	
<b>Weed population:</b>	<b>1.0 /m<sup>2</sup></b>	
<b>Keywords:</b>	<b>Common sowthistle, knockdown, fallow</b>	
<b>NB: Application A was 1.5L/ha Glyphosate 450 + 500ml/ha Amicide 625 + 0.1% Activator. Applied over entire trial area.</b>		

Pest Scientific Name Pest Name Description Assessment Date Assessment Type Assessment Unit Treatment-Evaluation Interval ARM Action Codes			<i>Sonchus oleraceus</i> Common Sowthistle			
			4/05/2018 BURNDOWN % 7 DAB AA	Total Surviving 24/05/2018 COUNT /m <sup>2</sup> 27 DAB T1	Re-growing 8/06/2018 COUNT /m <sup>2</sup> 42 DAB AA T2	Total Surviving 8/06/2018 COUNT /m <sup>2</sup> 42 DAB T3
Trt No.	Treatment	Product Rate				
1	No Second Knock	-	17g	0.2a	0.1a	0.1a
2	Gramoxone	800ml/ha	33f	0.1b	0.0b	0.1b
3	Gramoxone	1600ml/ha	87de	0.0c	0.0c	0.0c
4	Gramoxone	2000ml/ha	82e	0.0bc	0.0c	0.0c
5	Gramoxone	2400ml/ha	92cd	0.0c	0.0c	0.0c
6	Sharpen Hasten	9g/ha 1% v/v	94bcd	0.0c	0.0c	0.0c
7	Sharpen Hasten	17g/ha 1% v/v	95bc	0.0c	0.0c	0.0c
8	Sharpen Hasten	26g/ha 1% v/v	95bc	0.0c	0.0c	0.0c
9	Sharpen Hasten	34g/ha 1% v/v	99a	0.0bc	0.0c	0.0c
10	Gramoxone Sharpen	800ml/ha 9g/ha	42f	0.1b	0.1a	0.1b
11	Gramoxone Sharpen Hasten	800ml/ha 9g/ha 1% v/v	98ab	0.0c	0.0c	0.0c
12	Gramoxone Sharpen	1600ml/ha 9g/ha	97abc	0.0c	0.0c	0.0c
13	Gramoxone Sharpen Hasten	1600ml/ha 9g/ha 1% v/v	99a	0.0c	0.0c	0.0c
14	Experimental Adigor	1600ml/ha 1% v/v	95bc	0.0c	0.0c	0.0c
LSD P=			7.2t	0.07	0.36t	0.03
Treatment Prob.(F)=			0.0001	0.0001	0.0001	0.0001

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 = % Burndown/brown out

### ARM Action Codes

AA = Automatic arcsine square root % transformation

T1 = [C4]/20

T2 = Arcsine square root percent ([7])

T3 = [C8]/20

DAB = Days after Application B

### Objective:

To evaluate the efficacy of second knock applications on broadleaf weeds.

### Conclusions:

This trial was established to screen options for potential as second knock alternatives to paraquat to manage common sowthistle. Application was on a population of ~1/m<sup>2</sup> at an 8 leaf stage (~90% at 20 cm diameter). All weeds were sprayed 7 days earlier with Glyphosate 450 at 1.5 L/ha in mixture with Amicide Advance 0.5 L/ha plus 0.1% Activator.

The first knock application alone provided ~95% control when assessed at 7 weeks after application. All second knock treatments resulted in complete control other than Gramoxone 800 mL/ha alone or Gramoxone 800 mL/ha + Sharpen 9 g/ha when applied without Hasten. The addition of Hasten to the same rates of Gramoxone + Sharpen resulted in complete control.

In this situation, all rates of Sharpen + Hasten alone provided an effective alternative to paraquat for second knock application on common sowthistle. Mixtures of Sharpen at 9 g/ha + Hasten with Gramoxone at 800 – 1600 mL/ha also provided effective control.

Application Description		
	A	B
<b>Application Date:</b>	20/04/2018	27/04/2018
<b>Application Start Time:</b>	7:00 AM	10:10 AM
<b>Application Stop Time:</b>		11:30 AM
<b>Application Method:</b>	SPRAY	
<b>Application Timing:</b>	POST-EM	7 Days later
<b>Application Placement:</b>	FOLIAR	
<b>Applied By:</b>	G Matthews	L Bailey
<b>Air Temperature, Unit:</b>		25 C
<b>% Relative Humidity:</b>		56
<b>Wind Velocity, Unit:</b>		5 km/h
<b>Wind Direction:</b>		E
<b>Dew Presence (Y/N):</b>		No
<b>Soil Moisture:</b>		DRY
<b>% Cloud Cover:</b>		0
<b>Next Moisture Occurred On:</b>	7/05/2018	7/05/2018

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Location: Wychie

Trial Year: 2018

Pest Stage at Each Application			
	A	B	
Pest:	Common Sowthistle		
Stage Majority, Percent:		18	90%
Stage Minimum, Percent:		13	2%
Stage Maximum, Percent:		32	8%
Diameter, Unit:		20	cm
Density, Unit:		1	m <sup>2</sup>

Application Equipment		
	A	B
Application Equipment:	JD R4030	Quad Bike
Equipment Type:	SPTRMO	Boom
Operation Pressure, Unit:	350 kPa	350 kPa
Nozzle Type:	TTI	AIXR
Nozzle Size:	11002	110015
Nozzle Spacing, Unit:	25 cm	50 cm
Boom Length, Unit:	36 m	4 m
Boom Height, Unit:	50 cm	60 cm
Ground Speed, Unit:	20 km/h	7.1 km/h
Spray Volume, Unit:	50 L/ha	100 L/ha