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## Field trials 1978

P A. Rutherford

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DEPARTMENT OF AGRICULTURE  
WESTERN AUSTRALIA

Summary of Experimental Results

Field Trials 1978

Contents

1. Silverleaf Nightshade (*Solanum elaeagnifolium*)
2. Apple of Sodom (*Solanum sodomaeum*)
3. Inkweed (*Phytolacca octandra*)

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76Na11: Rates of three herbicides on Silverleaf Nightshade

Property: J. Sands & Son, Yealering

Site: Annual grasses and Erodium species on edge of salt-affected flats

Plot size: 3m x 3m

Dates: Treatments applied: 2/ 3/76  
 Liveshoot counts taken: 2/ 3/76 : 17/12/76  
 5/12/77 : 20/12/78

Volume of water: 2000 l/ha

No.	Treatment	Rate /ha	Liveshoot Count*		% Control	L.S Count		% Control	L.S Count	% Control
			2/3/76	12/12/76		5/12/77	20/12/78			
1	Nil	-	17.0	17.0	-	8.0	-	3.3	-	
2	Roundup	3 l	33.3	16.3	51.1	14.7	55.9	15.3	54.1	
3	Roundup	6 l	20.3	18.0	9.9	13.7	32.5	11.3	44.3	
4	Roundup	12 l	24.3	12.7	47.7	5.7	76.5	8.3	65.8	
5	Dowco 290	3 l	20.7	12.3	40.6	12.3	40.6	13.3	35.7	
6	Dowco 290	6 l	26.0	6.0	76.9	10.3	60.9	14.7	43.5	
7	Dowco 290	12 l	32.3	1.0	96.9	6.7	79.3	12.7	60.7	
8	Hyvar X	5.5 kg	27.7	23.0	17.0	2.0	92.8	7.7	72.2	
9	Hyvar X	11 kg	16.7	11.0	34.0	0	100.0	0	100.0	
10	Hyvar X	22 kg	17.0	7.0	58.8	0	100.0	0	100.0	

\* Mean of 3 replications

Comments

After nearly 3 years, Hyvar X is still significantly better than the other two herbicides. However, the plots are still bare of annual vegetation, which makes Hyvar X inappropriate to use in many situations.

76Na12: Herbicide Screening trial on Silverleaf Nightshade

Property: J. Sands & Son, Yealering

Site: Annual grasses and Erodium species on edge of salt flats.

Plot size: 3m x 3m

Dates: Treatments applied 2/ 3/76  
 Liveshoot counts 2/ 3/76  
 17/12/76  
 5/12/77  
 20/12/78

Volume of Water: 2000 l/ha

No.	Herbicide	Rate	Liveshoot Count*		% Control	L.S Count*		% control	L.S Count	% control
			2/3/76	17/12/76		5/11/77	20/12/78			
1	Nil		35.0	23.0		15.3		12.3	-	
2	Tordon 255	11 l/ha	33.3	4.0	88.0	8.3	75.1	14.6	56.2	
3	Tordon 255	22 l/ha	22.3	0	100.0	0.3	98.7	8.7	61.0	
4	Tordon 105	22 l/ha	18.3	0	100.0	0	100.0	9.7	47.0	
5	Tordon 105	44 l/ha	23.3	0	100.0	0	100.0	3.3	85.8	
6	Kuron	6 l/ha	21.7	7.7	64.5	5.3	75.6	12.7	41.5	
7	Kuron	12 l/ha	29.7	9.7	67.3	16.0	46.1	14.7	50.5	
8	Banex	11 l/ha	34.7	20.0	42.4	25.7	25.9	25.7	25.9	
9	Banex	22 l/ha	36.7	25.3	31.1	20.7	43.6	14.0	61.9	
10	Residone	11 l/ha	35.7	21.0	41.2	2.7	92.4	0.3	99.2	
11	Residone	22 l/ha	12.0	3.3	72.5	0.3	97.5	1.7	85.8	
12	Asulox	7 kg/ha	27.3	2.7	90.1	4.0	85.3	9.0	67.0	
13	Asulox	14 kg/ha	22.7	12.0	47.1	10.3	54.6	9.3	59.0	
14	2,4,5-T	2 l/ha	35.7	19.7	44.8	19.7	44.8	15.7	56.0	
15	2,4,5-T	6 l/ha	28.7	14.0	51.2	13.6	52.6	13.3	53.7	

\* Mean of 3 replications

Comments

1. After nearly 3 years, the effect of the Tordon herbicides has decreased significantly.
2. The effect of the soil residual herbicide Residone has increased, as has Banex and 2,4,5-T.
3. The nil count is also low, reflecting poor seasonal conditions, which may have influenced the % control figures for the rest of the trial.

77Na22: Herbicide Screening trial on Silverleaf Nightshade  
Property: J. Sands & Son, Yealering  
Site: Annual grasses and Erodium species on edge of salt flats  
Plot Size: 3m x 3m  
Dates: Treatments applied 14/2/77  
 Liveshoot counts 14/2/77; 5/12/77; 20/12/78  
Volume of Water: 2000 l/ha

No.	Herbicide	Rate	Liveshoot Counts*		% Control	L.S Count	% Control
			14/2/77	5/12/77		20/12/78	
1	Nil	-	17.3	21.7	-	24.3	-
2	Tordon 50-D	5 l/ha	10.3	2.7	73.8	7.3	29.1
3	Tordon 50-D	10 l/ha	19.7	0.3	98.5	11.7	40.6
4	Tordon 50-D	20 l/ha	17.0	0	100.0	0.3	98.2
5	Triclopyr	5 l/ha	12.7	8.7	31.5	11.0	13.4
6	Triclopyr	10 l/ha	20.7	14.7	29.0	12.3	48.1
7	Triclopyr	20 l/ha	19.0	8.7	54.2	9.3	51.1
8	Tordon 5-20	5 l/ha	16.7	2.7	83.8	7.0	58.1
9	Tordon 5-20	10 l/ha	27.7	1.3	95.3	17.7	36.1
10	Tordon 5-20	20 l/ha	13.0	0	100.0	4.0	53.8
11	Krenite	5 l/ha	15.0	15.3	2.0	14.0	0
12	Krenite	10 l/ha	18.7	15.3	18.2	17.0	9.1
13	Krenite	15 l/ha	15.6	13.3	14.7	13.7	12.7
14	Velpar	5 kg/ha	15.6	8.3	46.8	0	100.0
15	Velpar	10 kg/ha	17.0	6.3	52.9	2.6	84.7
16	Velpar	15 kg/ha	20.7	10.0	51.7	0	100.0
17	Trysben 200	18.5 kg/ha	18.0	15.7	12.8	12.3	31.6
18	Trysben 200	37.0 kg/ha	18.7	2.6	86.1	0	100.0
19	Trysben 200	74.0 kg/ha	21.0	0.7	96.7	1.3	93.8
20	Spike	3 kg/ha	18.7	9.7	48.1	0.3	98.4
21	Spike	6 kg/ha	15.3	6.3	58.8	0	100.0
22	Spike	9 kg/ha	10.7	5.3	50.5	0	100.0
23	Roundup	3 l/ha	17.0	17.3	1.8	16.7	1.8
24	Roundup	6 l/ha	21.0	18.7	11.0	12.7	39.5
25	Roundup	12 l/ha	11.0	12.0	9.1	8.0	27.3
26	Asulox	5 l/ha	20.3	20.0	1.5	15.7	22.7
27	Asulox	10 l/ha	12.7	12.0	5.5	9.3	26.8
28	Asulox	15 l/ha	20.7	17.3	16.4	16.3	21.3
29	Tordon 105	5 l/ha	9.7	4.7	51.5	3.6	69.9
30	Tordon 105	10 l/ha	16.0	1.0	93.8	12.0	25.0
31	Tordon 105	20 l/ha	14.3	0	100.0	1.3	90.9

\* Mean of 3 replications

Comments

1. The effects of the Tordon herbicides in declining after almost 2 years.
2. As predicted, Velpar and Spike are giving excellent results now, after 2 years of rainfall to leach them into the root zone.
3. Trysben 200 is still giving excellent control but is not available now in W.A.
4. All the other herbicides are unacceptably poor.

77Na23: Rates x Times of Application of Tordon 50-D on Silverleaf Nightshade

Property: J. Sands & Son, Yealering

Site: Annual grasses and Erodium species on edge of salt flats

Plot size: 3m x 3m

Dates: Treatments applied: See table below  
 Liveshoot counts : 15/ 2/77  
 20/ 3/78  
 20/12/78

No.	Rate Tordon l/ha	T.O.A.	Percent* Control at 20/3/78	Percent* Control at 20/12/78
1	Nil	Feb.	- 46.2	- 53.1
2	5	1977	46.1	53.9
3	10	16/2/77	58.4	64.7
4	15		81.9	79.9
5	20		99.8	98.5
6	Nil	April	- 1.1	53.3
7	5	19/4/77	- 4.7	- 30.6
8	10		38.9	55.4
9	15		99.3	87.1
10	20		100.00	98.7
11	Nil	June	- 14.5	- 8.4
12	5	22/6/77	29.7	21.6
13	10		61.4	73.4
14	15		96.2	92.4
15	20		100.0	100.0
16	Nil	Aug.	- 4.7	3.3
17	5	17/8/77	36.3	45.5
18	10		83.5	83.3
19	15		94.5	93.8
20	20		99.3	99.3
21	Nil	Oct.	- 7.6	- 2.2
22	5		48.6	45.7
23	10	19/10/77	91.4	89.5
24	15		98.6	97.1
25	20		99.3	93.7
26	Nil	Dec.	12.1	4.8
27	5	1977	86.1	68.0
28	10	13/12/77	93.3	71.9
29	15		100.0	98.8
30	20		100.0	98.9

Comments

1. There is a definite response to the rate of application of Tordon 50-D at all times of application.
2. There also appears to be interaction between rates of application and times. At 5 and 10 kg/ha, the percentage control increases with the later applications. At 15 and 20 kg/ha this trend is probably not significant. This probably reflects the amount of rainfall which falls after application (of the lower rates, 5 and 10 kg/ha) at a time of the year when the s.l.n. cannot absorb any herbicide through the leaves (April-October).
3. The current recommendation is 20 l/ha sprayed in the summer (Dec - Feb). Savings could be achieved by applying 10 kg/ha in October or December or even 5 kg/ha in Dec. These low rates may have to be followed up in twelve months or less. The effectiveness of split versus single application has not been investigated yet.



78Bu17: Apple of Sodom Control with Velpar  
Property: G. Kevill, 5 km west of Margaret River  
Site: Grass dominant annual pasture heavily infested with Apple of Sodom bushes from 0.5 - 1.5 m high  
Plot size: 1 bush, in three size groups, small, medium and large  
Dates: Treatments applied: 20/4/78  
 Assessment made : 16/10/78  
Rates: Velpar was applied to the ground around the bush with a cattle drenching gun calibrated to deliver one 30 ml dose per shot. The dosages refer to the number of 30 ml shots applied per bush.  
Rating: 3 independent ratings of percent control over 2 reps.

Table of means of percent control

		Dosages					
		1	5	10	15	20	Means
Size of bush	Small (0.5 m)	-	79.0	90.5	85.0	99.9	88.6
	Medium (1 m)	16.9	45.9	76.7	80.8	93.7	62.8
	Large (1.5 m)	6.7	55.0	61.7	50.9	80.0	50.9
	Means	11.8	60.0	76.3	72.2	91.2	

Comments

1. The degree of control varies as much with the number of shots per bush, as with the size of the bush.
2. There appears to be an interaction between bush size and number of shots.
3. The minimum dosage required to give acceptable ( $\geq 90\%$ ) for each bush size is:-
  - Small bushes : 10 shots
  - Medium bushes : 20 shots
  - Large bushes : > 20 shots
4. This treatment is very cheap (less than 7 c per dose for chemical) and would have application to areas of Apple of Sodom infested land which are inaccessible to spray equipment.
5. The results on the bigger bushes is expected to improve with time as more rainfall may be required to leach the Velpar to the deeper root systems.

78Bu18: Herbicide Screening on Apple of Sodom  
Property: G. Kevill, 5 km west of Margaret River  
Site: Grass dominant annual pasture heavily infested with Apple of Sodom bushes from 0.5 - 1.5 m high  
Plot Size: 1 bush approximately 1 m high  
Dates: Treatments applied : 20/4/78  
 Assessments made : 16/10/78  
Rates: Each bush was treated with the same volume of spray  
 Mixture of various dilutions with water  
 Wetting agent was added to all treatments at 1:1000  
 Ratings: Percent-control 0 - 100%

No.	Treatment	Dilution rate	Rating % Control*
1	2,4,5-T amine	1:100	64.2
2	2,4,5-T amine	1:50	47.5
3	Tordon 105	1:100	46.7
4	Tordon 105	1:50	68.8
5	Tordon 50-D	1:100	56.5
6	Tordon 50-D	1:50	89.9
7	Tordon 5-20	1:100	45.0
8	Tordon 5-20	1:50	70.0
9	Flowable Vorox	1:1600	95.7
10	Flowable Vorox	1:800	95.7
11	Weedazol TL plus	1:100	99.7
12	Weedazol TL plus	1:50	99.9
13	Nil	-	0

\* Mean of 3 independant ratings over 2 reps

Comments

1. Weedazol TL plus and Vorox gave excellent control ratings.
2. The current recommendation is 2,4,5-T amine.
3. There was evidence that seedling emergence could be partially overcome with the use of Vorox and Tordons compared with the non-residual herbicides.

Title: Chemical Control of Inkweed  
Property: D. Fitzgibbon, East Porongorups  
Site: Paddock prone to waterlogging heavily infested with Inkweed  
Plot size: One bush per plot - two sizes of bush  
Dates: Treatments applied : 23/5/78  
 Assessments : 27/6/78 (a)  
 all carried out : 27/7/78 (b) means of 2 reps  
 by Albany District : 7/9/78 (c)  
 Office : 2/10/78 (d)  
 Visual Rating system: 1 = plants brown and dead  
 to 5 = plants unaffected

No.	Treatment	Large plant				Small plant			
		(a)	(b)*	(c)	(d)	(a)	(b)*	(c)	(d)
1	Control	5	5	3.5	3.5	5	5	4	3.5
2	2,4,5-T amine 1:150	4	2.5	2.5	1.5	4	2.5	2.5	1
3	2,4,5-T amine 1:1000	4	2.5	2.5	2.5	4	3	2	2
4	Weedazol TL Plus 1:100	4	4	3	1.5	4	2	2	1
5	Weedazol TL Plus 1:50	4	2.5	2.5	2	3.5	2.5	2	1
6	Roundup 1:150	2	1	1	1	1	1	1	1
7	Roundup 1:100	2	1	1	1	1	1	1	1
8	Tordon 50-D 1:150	3	2	2	1.5	3	2	1	1
9	Tordon 50-D 1:100	3	2	1.5	1	3	2	1	1
10	Distillate	2	1.5	1	1	2	1	1	1
11	Distillate + burn	1	1	1	1	1	1	1	1
12	Sprayseed 1:200	1	1	1	1	1	1	1	1
13	Sprayseed + burn	1	1	1	1	1	1	1	1
14	Banvel 200 1:200	4	2.5	2.5	2.5	3	2	1.5	1.5
15	Banvel 200 1:100	3	2	2.5	1.5	3	1.5	1.5	1.5
16	Velpar 5 doses	3	1.5	1	1	3	1.5	1	1

\*(b) Waterlogging evident in paddock, appeared to be affecting Inkweed outside the trial.

Comments

Many herbicides were effective in killing Inkweed after five months, particularly the smaller plants. However, the cheapest treatment is DISTILLATE, with or without burning. Burning after spraying killed the plant much quicker than spraying alone.

The previous recommendation was 2,4,5-T, which was not particularly effective in this trial.