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Recommended Citation

Allen, J M. (1976), *1975 Weed control investigations in high rainfall areas*. Department of Primary Industries and Regional Development, Western Australia, Perth. Report.

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1975

SUMMARY OF 1975 WEED CONTROL
INVESTIGATIONS IN HIGH RAINFALL AREAS.

1. Docks
2. Capeweed

J.M. Allen
February 1976

DOCK CONTROL - DICAMBA IN PASTURES

73AL38

Locality - Stoney, Mt Many Peaks
Dock Species - R. Pulcher
Treatments - 1973 Dicamba 1 li/ha, July treatments 1,2,3,4.
 1974 - Treatments 2,3,4,6,7,8 dry cultivated,
 March sprayed with Dicamba 1.5 li/ha May.
 Clover sown in June treatments 2,6.
 1975 - Eastern half, plots 10,14,16 cultivated March.
 Dicamba 1.5 li/ha to treatments 3,4,7,8 April.
 No clover sown.

Results - 1. Plant counts 20 x 0.05 m² per plot in spring.

Mean of 2 replications

Dock Plants m⁻²

1973	Treatments		Established plants		Seedlings	
	1974	1975	1974	1975	1974	1975
Dicamba	Nil	Nil	58	43	37	0
Dicamba	Dicamba/clover	Nil	2	10	6	0
Dicamba	Dicamba/rye	Dicamba	2	2	2	4
Dicamba	Dicamba/rye	Dicamba	3	2	5	13
Nil	Nil	Nil	127	83	34	7
Nil	Dicamba/clover	Nil	26	20	7	1
Nil	Dicamba/rye	Dicamba	13	2	13	5
Nil	Dicamba/rye	Dicamba	21	3	7	20

2. Seed reserves - Soil samples 10 x 50cm⁻² to 5cm depth per plot
 7.10.75 2 replications.

Dock seeds m⁻²

<u>Treatment</u>	<u>Sound</u>	<u>Rotten</u>
Nil	1,260	200
Dicamba 1973,1974,1975	80	300

NB

Approximately half of the seeds were enclosed in the fruiting valve.

Comment

1. Spring treatment in 1973 reduced the docks and the effect is still evident in 1975.
2. One autumn application of dicamba gave reasonable but not complete control.
3. There was good regeneration of clover on all 1975 nil plots.
4. Seed reserves have been markedly reduced, but not eliminated by 3 years of dicamba.

DOCK CONTROL - DICAMBA IN PASTURES

73BU9

Locality - Wrights, Margaret River
Dock Species - R. Pulcher
Treatments - 1973, August, Dicamba 1.5 li/ha treatments 1,2,3,4.
 1974, Treatments 2,3,4,6,7,8 dry cultivated March and sprayed with Dicamba 1.5 li/ha May. Clover sown treatments 2,6 June.
 1975, Western half of plots, treatments 3,4,7,8 rotary hoe March. Dicamba 1.5 li/ha to treatments 3,4,7,8 clover sown June, treatments 3,7.
Results - Plant counts 20 x 0.05 m² per plot in spring.

Mean of 3 replications

Dock plants m⁻²

1973	Treatments		Established plants		Seedlings	
	1974	1975	1974	1975	1974	1975
Dicamba	Nil	Nil	31	36	19	0
Dicamba	Dicamba/clover	Nil	1	12	4	0
Dicamba	Dicamba/rye	Dicamba/clover	2	3	5	1
Dicamba	Dicamba/rye	Dicamba	2	2	2	1
Nil	Nil	Nil	49	36	10	0
Nil	Dicamba/clover	Nil	7	13	22	0
Nil	Dicamba/rye	Dicamba/clover	4	4	7	0
Nil	Dicamba/rye	Dicamba	3	6	4	0

Comment

1. Spring treatment had no long term benefit.
2. One autumn application of dicamba gave reasonable but not complete control.
3. Reasonable clover regeneration on all 1975 nil plots. No evidence of success with attempts to resow clover.

DOCK CONTROL - DICAMBA IN PASTURES

73AR9

Locality - Mead estate, Baldivis.
Dock Species - R. pulcher.
Treatments - 1973 - Dicamba 1.5 li/ha, July treatments 1,2,3,4.
 1974 - Treatments 2,3,4,6,7,8 dry cultivated, March, and sprayed with Dicamba 1.5 li/ha May
 Clover sown May, treatments 2,6.
 1975 - Northern half of plots, treatments 3,4,7,8 cultivated March.
 Clover sown treatments 3,7 April.
 Dicamba spot sprayed, treatments 3,4,7,8.
Results Plant counts 20 x 0.05 m² per plot in spring.

Mean of 2 replications

Dock plants m⁻²

1973	Treatments		Established plants		Seedlings	
	1974	1975	1974	1975	1974	1975
Dicamba	Nil	Nil	35	15	34	5
Dicamba	Dicamba/clover	Nil	9	2	1	2
Dicamba	Dicamba/rye	*Dicamba/clover	8	1	0	3
Dicamba	Dicamba/rye	*Dicamba	7	0	0	6
Nil	Nil	Nil	17	20	25	16
Nil	Dicamba/clover	Nil	8	1	1	14
Nil	Dicamba/rye	*Dicamba/clover	8	1	1	13
Nil	Dicamba/rye	*Dicamba	9	1	2	3

* Spot spraying

Comments

1. Paddock is continuously undergrazed and docks are slowly declining in number and size. Suspect low fertiliser applications.
2. Dicamba is giving good control.
3. Clover regeneration has been poor.

FIDDLE DOCK CONTROL GLYPHOSATE EVALUATION

APPLICATION, NOVEMBER 1974

ASSESSMENT, MAY, JUNE 1975

PERCENTAGE CONTROL ESTABLISHED DOCK PLANTS

TREATMENT HERBICIDE LI/HA	74HA7		74AL26			74BY7		74BU14		74DE13	
	GRAZING	HAY	GRAZING	HAY	SILAGE	GRAZING	SILAGE	GRAZING	HAY	HAY	SILAGE
Glyphosate 0.75	77	0	69	15	12	15	46	15	16	0	0
Glyphosate 1.50	82	52	83	37	64	44	46	49	21	0	1
Glyphosate 3.00	93	53	67	6	60	39	16	15	49	12	0
Glyphosate 4.00	99	40	90	36	80	72	50	48	21	18	20
Dicamba 3.00	41	38	51	43	50	27	40	0	51	0	44
Untreated, Docks m ⁻²	29	40	90	85	64	97	50	103	59	23	29

COMMENT

Results are variable and until the reasons for the variability are understood glyphosate cannot be recommended for use.

DOCK CONTROL - PASTURE RENOVATION

75HA2

Locality - G. Maddison, Coolup.
Dock Species - R. pulcher.
Treatments - + Rotary hoe to 10cm 7.3.75
Dicamba cross strip (early) 7.4.75
Pasture treatments (ryegrass, oats clover) sown
14.4.75
Dicamba cross strips after grazing 4.7.75.
Assessment - Dock plant count 10 x 0.1 m² per plot *
29.9.72, 3 replications.
Results - Established dock plants per m²

	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	38	47
Dicamba 0.7 li/ha	9	18
Dicamba 1.4 li/ha	7	6
Dicamba 1.4 li/ha (early)	23	25

Dock seedlings per m²

	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	53	31
Dicamba 0.7 li/ha	71	117
Dicamba 1.4 li/ha	60	141
Dicamba 1.4 li/ha (early)	107	133

* Uncultivated and cultivated but not oversown treatments only.

Comments

1. Competition from existing ryegrass at Yarloop prevented the establishment of sown species except that oats made good early growth.
2. There was no visible effect on dock attributable to pasture species.
3. Dicamba at 0.7 and 1.4 li/ha gave reasonable but not complete control of docks. The area was fenced off to allow the oats and pasture to come away and it was not possible to have the pasture eaten down adequately prior to spraying.

4. Banex spraying soon after the break killed most broadleaved plants and as a result a larger number of dock seedlings became established.
5. Summer cultivation had a marked visible effect on the number of established dock plants early in the season, however the difference was not visible in the spring.

DOCK CONTROL - PASTURE RENOVATION

75AL6

Locality - P. Jones, Narikup
Dock Species - R. pulcher
Treatments - + cultivated March.
Pasture treatments (ryegrass, oats, clover) sown
9.4.75.
Grazed off dicamba cross strips,
applied 1 week later. June.
Assessment - Plant counts 0.1m² x 5 per plot *
3 replications
Results - Established dock plants per m²

	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	15	37
Dicamba 0.7 li/ha	11	15
Dicamba 1.4 li/ha	4	17

Dock Seedlings per m²

	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	19	6
Dicamba 0.7 li/ha	10	11
Dicamba 1.4 li/ha	5	3

* Uncultivated and cultivated but not oversown treatments only.

COMMENT

1. Competition from the existing pasture prevented the establishment of sown species except that oats made good early growth.
2. There was no visible effect on docks attributable to pasture species.
3. Dicamba at 0.7li gave only fair control of docks while 1.4 li gave good control where the docks had been fragmented by cultivation.
4. Cultivation in the summer resulted in a measurable (approximately 50%) reduction in established dock plants.

DOCK CONTROL - PASTURE RENOVATION

75BU2

Locality - W. Albury, Yelverton.
Dock Species - R. pulcher.
Treatments - + Cultivated with scallop disc 6.3.75
 Dicamba cross strip (early) 7.4.75
 Pasture treatments (ryegrass, oats, clover) sown 21.4.75
 Dicamba cross strips after grazing 24.6.75
Assessment - Plant counts 10 x 0.1m² per plot* 23.9.75
 3 replications.
Results - Established dock plants per m²

	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	2	3
Dicamba 0.7 li/ha	1	4
Dicamba 1.4 li/ha	2	3
Dicamba 1.4 li/ha (early)	2	3

<u>Dock Seedlings per m²</u>	<u>Cultivated</u>	<u>Uncultivated</u>
Nil	5	5
Dicamba 0.7 li/ha	7	3
Dicamba 1.4 li/ha	11	5
Dicamba 1.4 li/ha (early)	45	20

* Uncultivated and cultivated but not oversown treatments only.

COMMENT

1. Competition from existing ryegrass and yarloop prevented the establishment of sown species except that oats made good early growth.
2. There was no visible effect on docks attributable to pasture species.
3. There was a natural decline of docks on the site compared with the 1974 infestation.
4. Banex spraying soon after the break killed out the broadleaved species, including capeweed and there was an increase in seedling dock numbers.
5. With the low dock level it was not possible to assess the value of summer cultivation.

INVESTIGATION OF SAMPLING TECHNIQUES IN DOCK INFESTED PASTURE.

- Locality - G. Maddison, Coolup
Dock Species - R. pulcher
Pasture - Even moderate dock infestation in Yarloop pasture.
Sampling - 1. 31.7.75 50 x 1m² quadrats ungrazed from April.
2. After grazing 4.9.75 20 x 1m² quadrats.
3. 28.10.75 20 x 1m² (silage cut).

All samples were taken from randomly selected quadrats in a 400m² block.

Results Dry matter kg/ha⁻¹

COMPONENT	WINTER GROWTH	RESIDUAL AFTER GRAZING	SPRING GROWTH
Dock	439 ± 31	132 ± 16	1159 ± 116
Clover (Yarloop)	393 ± 25	435 ± 43	1157 ± 104
Capeweed	378 ± 34	83 ± 30	-
Grass	-	-	722 ± 139
Other	375 ± 35	44 ± 16	123 ± 33
Total	1585 ± 49	694 ± 56	3165 ± 165

Correlation with mean of 3 visual assessors of winter growth;
Rating 0 - 10

- Correlation coefficient, Dock 0.58
Capeweed 0.37
Clover 0.37
Total 0.54

Comment

1. The site was selected as an even infestation of dock, yet the dock component in winter ranged from 2.6 to 98.2 grams dry weight per square metre.
2. The correlation between visual ratings and actual dry matter levels was poor.
3. Grazing after the July cut was not intense. The cattle reduced the non legume components (including docks) but did not reduce the level of yarloop.

EFFECT OF REGLONE ON PASTURE QUANTITY AND QUALITY
(CAPEWEED DOMINANT PASTURE)

Locality B. Coffey, Serpentine.

Treatments

A. Applied 16-5-75

Nil
Reglone 500 ml/ha
Reglone 700 ml/ha

B. Applied 4-6-75

Nil
Reglone 500 ml/ha
Reglone 700 ml/ha

Assessments 1. Winter Dry Matter Production
Sample 4 x 1m² per plot, 25-7-75.

Dry Matter kg/ha

Treatment	Treated 16-5-75				Treated 4-6-75			
	Cape weed	Clover	Grass	Total	Cape weed	Clover	Grass	Total
Nil	1072	143	293	1508	957	195	204	1356
500 ml/ha	199	237	431	867	128	141	322	591
700 ml/ha	249	105	386	740	147	91	280	518
LSD P<.05	530	NS	NS	440	339	NS	NS	345

2. Residue after winter grazing.
Sample 1m² per plot 2 replications
August 1975.

Dry Matter kg/ha

Treatment	Treated 16-5-75				Treated 4-6-75			
	Cape weed	Clover	Grass	Total	Cape weed	Clover	Grass	Total
Nil	127	3	7	137	143	8	7	158
700 ml/ha	10	15	60	85	3	106	57	166

3. Spring Dry Matter Production (Hay)
Sample 0.4m x 5m per plot
30-10-75

Sample area grazed up to end of August

Dry Matter kg/ha

Treatment	Treated 16-5-75				Treated 4-6-75			
	Cape weed	Legume	Grass	Total	Cape weed	Legume	Grass	Total
Nil	558	1430	848	3064	566	1414	667	2781
500 ml/ha	78	1105	1860	3141	132	1521	2248	3942
700 ml/ha	231	1560	1345	3242	216	1200	2322	3772

N.B.

Legume component = Lotus sp. & T. subterranean.

Comment

1. Further assessments to be undertaken are -
 - (i) N and digestible nutrient levels of the various components;
 - (ii) pasture composition in winter 1976.
2. Reglone reduced the capeweed and thus total production in the winter.
3. Spraying at the cotyledon stage or at the 2 to 3 true leaf stage resulted in a similar level of retardation of the subclover.
4. There was a response in grass production and not in legume production to the removal of capeweed.

CONCLUSION

Reglone spraying was not justified at this site judging by the results obtained to date.

The treatments need to be repeated at another site, in another season to substantiate this finding before recommendations are made.