

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code No : HW 412/91
Cat No : 1764

Title : Post emergence control of mature Cynodon dactylon.

1. Particulars of the project

This crop	: Fallow	<u>Soil analysis</u>		<u>Date: 12/2/91</u>		
Site	: Hillhead	pH	OM (%)	Clay (%)	PDI	
Region	: North coast - coastal	8	-	6	-	
Soil system	: Berea	ppm				
Soil form/series	: Joubertina	P	K	Ca	Mg	Zn Al
Design	: Randomised block	52	44	1553	28	28 -
Variety	: N/A	Dates : 12/2/91 - 17/5/91				
Fertiliser/Ameliorants	: N/A	Rainfall : 399 mm				
		Irrigation: Nil				

2. Objectives

To test some new and currently used herbicides for their control of mature C. dactylon.

3. Treatments:

	Rate (ℓ or kg product/ha)
T 1 Roundup	6
T 2 Dalapon + Rev 10	10 + 1
T 3 MSMA + TCA	4 + 15
T 4 MSMA + TCA	8 + 30
T 5 ICIA 0051/diuron + MSMA	3,33 + 4
T 6 ICIA 0051/diuron + MSMA	6,66 + 8
T 7 ICIA 0179 + MSMA	1 + 4
T 8 ICIA 0179 + MSMA	2 + 8
T 9 ICIA 0179 + MSMA + TCA	1 + 4 + 15
T10 ICIA 0179 + MSMA + TCA	2 + 8 + 30

4. Design

Design : Randomised block
Replications : 3
Plot size : 2,5 x 8 m = 20 m²
Breaks : 1 m between plots

5. Chemical formulations used

Product	Formulation	Active ingredient
Roundup	359 g/l (sol)	glyphosate
Dalapon	850 g/kg (sp)	proprop
Rev 10	-	-
MSMA	720 g/l (sol)	mono-sodium methane arsenate
TCA	960 g/kg (sp)	sodium trichloroacetate
ICIA 0051/diuron	150/300 g/l	chlormesulone + diuron
ICIA 0179	500 g/l	-

6. Application details

Treatment date : 12/2/1991
Time of application : 7.00 am - 8.10 am
Applicator : CP3
Nozzle : APM (green)
Method : Full cover
Output : 41,25 m³/sec
Output : 33 m³/m²

7. Weather conditions at spraying

Treatment date : 12/2/1991
General : Clear and hot
Dew : Nil
Soil surface : Dry
Wind : Very slight
Sunshine hours : 9,2
Temperature (°C)
 08h00 : 25,5
 14h00 : 27,8
Relative humidity (%)
 08h00 : 75
 14h00 : 65
Rainfall, (mm)
On day of spray : Nil
No days to first rain : 3
At first rain : 105,7
In first 14 days : 163,1
For duration of trial : 399

8. Results

Table 1 : Treatment effects on mature Cynodon dactylon when sprayed in February, expressed as percentage kill

Treatment	Rate (ℓ or kg product/ha)	Days after spraying				
		16	29	51	70	94
T 1 Roundup	6	96	96	92	93	93
T 2 Dalapon + Rev 10	10 + 1	30	25	55	53	42
T 3 MSMA + TCA	4 + 15	27	8	5	2	0
T 4 MSMA + TCA	8 + 30	30	8	3	1	0
T 5 ICIA 0051/diuron + MSMA	3,33 + 4	17	0	2	2	0
T 6 ICIA 0051/diuron + MSMA	6,66 + 8	37	2	1	0	0
T 7 ICIA 0179 + MSMA	1 + 4	52	12	3	2	0
T 8 ICIA 0179 + MSMA	2 + 8	90	33	4	0	0
T 9 ICIA 0179 + MSMA + TCA	1 + 4 + 15	85	35	6	3	0
T10 ICIA 0179 + MSMA + TCA	2 + 8 + 30	96	82	32	13	11

9. Comments

C. dactylon at this site was at an advanced stage of growth and flowering at the time of spraying. The site had previously been disced in an attempt to promote an even growth distribution throughout the trial.

Roundup

Roundup at 6 ℓ /ha provided exceptionally good control of mature C. dactylon when applied at this time of year. Minimal regrowth had occurred three months after spraying.

Dalapon + Rev 10

This mixture caused significant suppression of growth, but at no stage was the control acceptable.

MSMA + TCA

The effect on this grass from these products was very slight with no improvement at double rates.

ICIA 0051/diuron + MSMA

Both rates of this mixture resulted in minimal control. Regrowth was rapid as no control was recorded four weeks after spraying.

ICIA 0179 + MSMA

The higher rate of this mixture resulted in good control shortly after spraying, but unfortunately this effect was only temporary.

ICIA 0179 + MSMA + TCA

The inclusion of TCA in this mixture improved both the level and period of control on this grass. However regrowth was rapid and efficacy had all but disappeared by ten weeks after spraying the high rate.

10. Conclusion

As the entire site had been disced prior to spraying an assessment of the operations influence on chemical efficacy was not done. The results have shown that of the products tested, the only acceptable long-term chemical control of Cynodon dactylon was achieved using 6ℓ/ha of Roundup.