

**SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION**

Cat No: 1601
Project No: 3379
Code No: HW 317/86

Title: Verge Weed Control.

Particulars of project:	Soil analysis	Date:
Site : La Mercy Field Stn Field 33D	pH (water) 5,30	Clay (%) 11
Region : North Coast Coastal	OM (%) 0,6	
Soil system : Umzinto	ppm	
Dates : 16/10/86-14/11/87	P 11	K 86
LTM Rainfall mm :	Ca 72	Mg 28

Design:

Design : Randomised Blocks
Replication : 5
Whole plot size : 8m x 2,5m = 20m²
Guard rows : 1m unsprayed around each plot

Treatments:

Treatments	Rates (l or kg) product/ha	Time of application
Fusilade	0,5	Post emergence
Fusilade	0,75	Post emergence
Fusilade	1,0	Post emergence
Fusilade + Actril	0,75 + 1,0	Post emergence
Diuron + paraquat	2 + 1	Post emergence
Velpar	2,0	Post emergence
Roundup	0,5	Post emergence

Chemical formulations used

Product	Formulation	Active ingredient
Paraquat	200 g/l soln	Paraquat
Fusilade Super	125 g/l ec	Fluazifop-butyl
Actril DS	600/100 g/l ec	2,4-D/ioxynil
Diuron	800 g/kg SC	Diuron
Velpar	240 g/l soln	Hexazinone
Roundup	359 g/l soln	Glyphosate

Application details

Treatment dates : 16/10/1986
 Time of application : 08h00 - 09h05
 Applicator : Gas knapsack
 Nozzle : APM Green
 Pressure : 200 kpa
 Output : 32 ml/m²

Weather conditions at time of spraying

Treatment dates : 16/10/86
 General : Cloudy and cool
 Dew : Nil
 Soil surface : Wet
 Wind : Nil
 Sunshine hours : 10,9
 Temperature (°C) 08h00 : 20,4
 14h00 : 26,0
 Relative humidity (%) 08h00 : 71
 14h00 : 61
 Rainfall: On day of spray (mm) : 17,7
 No. days to 1st rain : 1
 At 1st rain (mm) : 16,2
 In 1st 14 days (mm) : 61,2

Results:

Table 1: Visual ratings of percent Eragrostis spp. control at T + 28 days.

Treatment	Rate kg or l prod ha ⁻¹	Replication				
		1	2	3	4	5
Fusilade S	0,5	0	5	5	5	10
Fusilade S	0,75	5	15	15	15	15
Fusilade S	1,0	10	-	30	10	10
Fusilade S + Actril	0,75 + 1,0	5	20	5	10	20
Diuron + paraquat	2 + 1	40	30	30	20	40
Velpar	2,0	50	45	80	30	25
Roundup	0,5	50	15	-	30	30

Comments on Table 1:

No treatments achieved satisfactory kill. However Velpar at 2,0 l/ha, diuron + paraquat at 2 + 1,0 l/ha and Roundup at 0,5 l/ha gave 30-50 % kill. Fusilade S by itself and in combination did not control Eragrostis.

Table 2: Visual ratings of percent Sporobulus spp. control at T + 28 days

Treatment	Rate kg or l prod ha ⁻¹	Replication				
		1	2	3	4	5
Fusilade S	0,5	-	-	-	-	5
Fusilade S	0,75	-	-	-	30	20
Fusilade S	1,0	-	20	-	-	30
Fusilade S + Actril	0,75 + 1,0	-	-	-	-	20
Diuron + paraquat	2 + 1	40	-	-	-	20
Velpar	2,0	-	-	-	30	50
Roundup	0,5	-	-	10	-	-

Comments on table 2:

The distribution of Sporobulus was poor. No treatments provided good control. Velpar at 2,0 l/ha provided the best control followed by diuron + paraquat at 2 + 1 l/ha.

Table 3: Visual ratings of percent Digitaria spp. control at T + 28 days

Treatment	Rate kg or l prod ha ⁻¹	Replication				
		1	2	3	4	5
Fusilade S	0,5	50	40	20	15	15
Fusilade S	0,75	40	50	30	30	30
Fusilade S	1,0	30	40	70	20	20
Fusilade S + Actril	0,75 + 1,0	40	60	50	80	40
Diuron + paraquat	2 + 1	65	90	90	100	90
Velpar	2,0	100	95	90	80	40
Roundup	0,5	70	60	15	90	80

Comments on table 3:

Diuron + paraquat at 2 + 1 l/ha and Velpar at 2,0 l/ha provided good control of Digitaria. Roundup at 0,5/ha gave moderate control. The Fusilade S treatments achieved about 40% control.

Table 4: Visual ratings of percent Dactyloctenium spp. control at T + 28 days

Treatment	Rate kg or l prod ha ⁻¹	Replication				
		1	2	3	4	5
Fusilade S	0,5	-	10	-	-	10
Fusilade S	0,75	-	-	15	-	-
Fusilade S	1,0	-	15	-	-	-
Fusilade S + Actril	0,75 + 1,0	-	10	-	-	-
Diuron + paraquat	2 + 1	-	-	-	-	-
Velpar	2,0	-	-	-	40	-
Roundup	0,5	-	20	-	15	15

Comments on table 4:

Treatments tended to have poor control of Dactyloctenium. The results are not conclusive because of poor distribution. However Velpar at 2 l/ha and Roundup at 0,5 l/ha may control this grass.

Table 5: Visual ratings of percent Alternanthera spp. control at T + 28 days

Treatment	Rate kg or l prod ha ⁻¹	Replication				
		1	2	3	4	5
Fusilade S	0,5	0	5	-	0	-
Fusilade S	0,75	5	30	5	5	15
Fusilade S	1,0	0	10	5	5	10
Fusilade S + Actril	0,75 + 1,0	-	-	80	-	-
Diuron + paraquat	2 + 1	15	10	40	15	60
Velpar	2,0	50	-	60	-	-
Roundup	0,5	20	5	10	10	15

Comments on table 5

In the only plot for which the effects of Fusilade S + Actril at 0,75 + 1,0 l/ha could be rated it was found that Alternanthera was well controlled. Velpar at 2,0 l/ha gave moderate control. Fusilade on its own gave poor control.

Conclusions

Velpar at 2,0 l/ha gave the best overall control of weeds in a verge situation. Fusilade S on its own was not very successful as a herbiciden for verge weed control although in combination with Actril at 0,75 + 1,0 l/ha it had the potential to give reasonable weed control if the predominant weeds are broadleaf.

Diuron + paraquat at 2 + 1 l/ha gave moderate overall control of weeds, particularly grasses.

In future verge weed control trials should be assessed over a longer time period in order to monitor the length of weed suppression obtained.

MWW/MG

2 December, 1987