

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code : HW 295/85/R2
Cat. No. : 1536

Title : Phytotoxicity trial on ratoon cane

1. Particulars of project

This crop : Ratoon cane
Site : Shakaskraal
Region : N. Coast Coastal
Soil System : Umzinto/Coast Lowlands
Soil form/series : Longlands/Waldene
Design : Random blocks
Variety : NCo376
Fertilizer/Ameliorants N P K
 184 37 184

Soil analysis : Date : 18.9.85
pH O.M.% Clay % Silt% TSand%
5.6 2.3 15 14 71

ppm				
P	K	Ca	Mg	Zn
26	36	421	108	1.2

Age: 13,2 months Dates : 20.8.85-25.9.86
Rainfall: 859 mm L.T.M. : 990 mm
Irrigation: 77 mm
Total 936 mm

Weather condition at spraying

Date : 25.10.85
General : Hot and clear
Rainfall: On day of spray (mm) : 0
 No. days to 1st rain : 3
 No. mm at 1st rain : 4,8
Sunshine hours : 7,2
Dew : Nil
Wind : Medium
Temperature (°C) 8 am : 24,7
 2 pm : 26,9
Relative humidity (%) 8 am : 70
 2 pm : 63

2. Objectives

Standard phytotoxicity programme

3. Treatments

3.1 Rates

<u>Treatments</u>	<u>Rate in l or kg product ha⁻¹</u>
1. Control (unsprayed)	-
2. Lasso (38,4) + diuron (80)	6+3
3. Lasso + diuron + paraquat (20)	6+3+1
4. Mon 097 (96,0) + diuron + paraquat	3+3+1

Note : All treatments - directed interrow.

4. Experimental

Plots were 8 m x 6 rows x 1,4 m gross and 6 m x 4 rows x 1,4 m net in size. There were 4 replications per treatment.

Condition and application details

Time of spray : 09:40 - 10:30
 Applicator : CP₃
 Nozzle : APM Green floodjet
 Output : 330 ℓ/ha
 Pressure : 1,5 Bar
 Method : Directed interrow
 Leaf Canopy height : 40 cm
 No. leaves/shoot : 6-8
 Soil surface : Dry

5 Results

Table 1 Crop measurements taken 2,5; 4,8 and 8,0 months after spraying

Treatments	Rate in ℓ or kg Product ha ⁻¹	Stalk length (cm)			Stalk Population (1000/ha)		
		T+2,5	T+4,8	T+8,0	T+2,5	T+4,8	T+8,0
1 Control (unsprayed)	-	63	120	150	152	131	129
2 Lasso+diuron	6+3	69	111	146	156	118	115
3 Lasso+diuron+paraquat	6+3+1	61	119	149	164	125	131
4 Mon 097+diuron+paraquat	3+3+1	55	109	141	164	126	127

Comments

No treatment appeared to have an effect on stalk length and population 8,0 months after spraying.

Table 2 Eldana survey done at harvest showing cane damage to individual treatments

Treatments	Rate in ℓ or kg Product ha ⁻¹	Stalk			Joints		
		No.	Damaged	% Damaged	Total	Bored	% Bored
1 Control (unsprayed)	-	50	16,3	32,5	14,9	0,78	5,29
2 Lasso+diuron	6+3	50	19,8	39,5	14,7	1,01	6,84
3 Lasso+diuron+paraquat	6+3+1	50	15,5	31,0	14,8	0,69	4,72
4 Mon 097+diuron+paraquat	3+3+1	50	16,3	32,5	14,4	0,68	4,78

Comments

No clear evidence of differences.

Table 3 Yield data at harvest

Treatments	Rate in ℓ or kg Product ha ⁻¹	Yield			Crop Measurements	
		Cane t/ha	Sucrose % Cane	Sucrose t/ha	Stalk length (cm)	Stalk Population (1000/ha)
1 Control (unsprayed)	-	63,0	12,87	8,2	157	135
2 Lasso+diuron	6+3	56,5	13,00	7,3	149	134
3 Lasso+diuron+paraquat	6+3+1	64,1	12,57	8,1	159	140
4 Mon 097+diuron+paraquat	3+3+1	56,2	12,56	7,1	148	135
C.V.%		7,5	7,6	12,1	3,9	4,3
SE D		3,18	0,68	0,65	4,25	4,19
LSD (0,05)		7,19	1,54	1,48	9,63	9,48
LSD (0,01)		10,35	2,22	2,12	13,85	13,64

Yield

a) Cane t/ha

No treatment showed statistically significant effects. However, Lasso+diuron and Mon 097+diuron+paraquat treatments resulted in lower cane yields than control.

b) Sucrose t/ha

No treatment showed statistically significant effects. However, as with cane yield, plots treated with Lasso+diuron and Mon 097+diuron+paraquat had lower yields of tons sucrose/ha.

Crop measurements

No clear evidence of differences.

Conclusions

There is no statistical evidence that any of these treatments reduce yield.