

**SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION**

Code : HW226/R2/81
Cat.No.: 1338

Title: POST-EMERGENCE PHYTOTOXICITY TRIAL

1. Particulars of the project:

This crop	: Ratoon cane (3rd)	Soil analysis:	Date: 7.10.81
Site	: Pongola Field Stn	pH	Clay %
Region	: Northern area	6,7	> 30
Soil system	: Komatipoort		ppm
Soil form/series:	Hutton/Shorrocks	P	K
Design	: Randomised block	18	143
Variety	: NCo 376	809	> 220
Fertilizer/ Ameliorants	: N P K		
Topdressing	138 21 -		
		Age: 12,1 months	Dates: 1.10.81- 5.10.82
			LTM : 658 mm
		Rainfall : 439 mm	
		Irrigation: 793 mm	
		Total	1232 mm

2. Objectives:

Standard phytotoxicity programme.

3. Treatments:

See results.

Note on Treatments:

Treatments were applied either directly over the cane rows when spray coverage of leaves was approximately 80% or directed across the interrows when spray coverage was approximately 45%.

4. Experiment details:

Plot size (gross) : 6 rows x 8 m x 1,4 m = 67,2 m²

(net) : 4 rows x 6 m x 1,4 m = 33,6 m²

Spraying date : 12.11.81

Cane growth stage : Leaf height 47 cm

Application : CP₃ Knapsack
TK₅ Spraying Systems floodjet
Output 317 ℓ/ha

Weather conditions: General : Warm and overcast

Temperature 8 am: 20,9°C
2 pm: 27,7°C

Relative humidity 8 am: 74%
2 pm: 46%

Rainfall-day of spray : 7,0 mm

Days to first rain : 0

Amount of first rain : 7,0 mm

Sunshine hours : 5,1

5. Results:

- Virtually no symptoms of leaf scorch were apparent from any treatment eight days after spraying.
- Crop measurements taken 2, 5 and 8 months after spraying are presented in Table 1.
- Yield data at harvest are presented in Table 2.

TABLE 1

Crop measurements taken 2, 5 and 8 months after spraying

Treatments	Rate in kg or ℓ prod/ha	Stalk height (m)			Popn. counts 10 ⁻³ /ha		
		2	5	8	2	5	8
Control (unsprayed)	-	0,93	2,52	2,66	295	245	149
Diuron + Sencor	4 + 4	0,76	2,41	2,65	288	225	154
Diuron + 2,4-D + S	5 + 4	0,76	2,39	2,54	286	231	148
Fortrol/ametryne + S (directed)	5	0,77	2,35	2,62	286	225	144
Fortrol/ametryne + S	5	0,76	2,39	2,61	289	224	146
Fortrol/ametryne + S	10	0,74	2,46	2,62	287	220	151
Diuron+Sencor+Actril DS (directed)	2 + 2 + 1	0,78	2,37	2,57	294	231	155
Diuron+Velpar+Actril DS (directed)	2 + 0,625 + 1	0,78	2,32	2,54	291	235	152

TABLE 2

Yield data at harvest

Treatments	Rate in kg or ℓ prod/ha	Yield				Crop measurements	
		Cane t/ha	Ers t/ha	Suc t/ha	Ers % cane	Stalk ht. (m)	PopuIn. (1000/ha)
Control (unsprayed)	-	127	15,6	18,1	12,2	2,62	171
Diuron + Sencor	4 + 4	137	16,6	19,4	12,1	2,74	164
Diuron + 2,4-D + S	5 + 4	127	15,7	18,2	12,4	2,62	168
Fortrol/amestryne + S (directed)	5	128	15,4	18,1	12,1	2,62	163
Fortrol/amestryne + S	5	135	16,5	19,1	12,2	2,68	169
Fortrol/amestryne + S	10	129	15,5	18,1	12,1	2,62	167
Diuron+Sencor+Actril DS (directed)	2 + 2 + 1	130	16,0	18,5	12,3	2,59	167
Diuron+Velpar+Actril DS (directed)	2 + 0,625 + 1	125	15,1	17,5	12,1	2,58	163
CV %		5,4	6,0	5,8	3,0	3,5	7,5
LSD (0,05)		8,221	1,110	1,247	0,435	0,1071	14,64
LSD (0,01)		11,03	1,489	1,673	0,584	0,1437	19,64

6. Comments on results:

• Crop measurements

All treatments caused a reduction in stalk height at an early age. At 8 months after treatment only diuron + 2,4-D + S, diuron + Sencor + Actril DS and diuron + Velpar + Actril DS still showed stalk height reductions.

• Yield data

Differences did not attain a level of statistical significance in respect of any parameters.

7. Conclusions:

In spite of early reductions in stalk length no effects on yield were apparent from these treatments.

No difference was apparent between directed and over the row treatment.

Effects may have been reduced due to rain on the day of spraying washing some chemical off the foliage.

PETT/HDN
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