

**SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION**

Code: HM240/83/R1
Cat.No: 1430

Title: PHYTOTOXICITY TRIAL: RATOON CANE, PONGOLA

1. Particulars of the project:

<p>This crop : 1st ratoon</p> <p>Site : Pongola</p> <p>Region : Northern area</p> <p>Soil system : Komatipoort</p> <p>Soil form/series: Hutton/Shorrocks</p> <p>Design : Random blocks</p> <p>Variety : NCo 376</p> <p>Fertilizer : N P K</p> <p>Topdressing (kg/ha) 153 - 153</p>	<p>Soil analysis: Date: 9/11/83</p> <p style="padding-left: 40px;">pH 6,21 CLAY % ±30</p> <p style="text-align: center;">ppm</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black; width: 15%;">P</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black; width: 15%;">K</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black; width: 15%;">Ca</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black; width: 15%;">Mg</td> </tr> <tr> <td style="text-align: center;">36</td> <td style="text-align: center;">174</td> <td style="text-align: center;">951</td> <td style="text-align: center;">>220</td> </tr> </table> <p>Age : 10,7 months</p> <p>Dates : 15/9/83 - 7/8/84</p> <p>Rainfall : 1 175 mm LTM: 592 mm</p> <p>Irrigation: 549 mm</p> <p>Total 1 724 mm</p>	P	K	Ca	Mg	36	174	951	>220
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36	174	951	>220						

2. Objectives:

To test herbicide mixtures for their phytotoxic effect on ratoon cane at Pongola.

3. Treatments:

Chemicals	Rate ai or ae/ha (kg or ℓ)	Rate prod/ha (kg or ℓ)
1. Control (unsprayed)	-	-
2. Diuron + Sencor	1,6 + 1,4	2 + 2
3. Diuron + Actril DS	2,0 + 0,875	2,5 + 1,25
4. Dual + Gardomil + paraquat	1,26 + 3 + 0,3	1,75 + 6 + 1,5
5. Bladex Plus + paraquat	4,5 + 0,2	9 + 1
6. Diuron + Velpar	1,6 + 0,675	2 + 0,75
7. Bimate + S	3,75	5
8. Dual + ametryn + S	1,98 + 2,0	2,75 + 4

Table 2: Yield results and crop characteristics at harvest

Treatments	Rate prod/ha (kg or l)	Yield			Crop measurements	
		Cane t/ha	Suc % cane	Suc t/ha	Stalk length (m)	Stalk popln. (1000/ha)
Control (unsprayed)	-	151,0	12,63	19,0	2,99	158
Diuron + Sencor	2 + 2	148,9	12,26	18,2	2,98	148
Diuron + Actril DS	2,5 + 1,25	144,8	12,53	18,1	2,97	148
Dual + Gardomil + paraquat	1,75 + 6 + 1,5	135,7	12,16	16,5	2,90	146
Bladex Plus + paraquat	9 + 1	139,0	12,10	16,8	2,94	139
Diuron + Velpar	2 + 0,75	150,4	12,41	18,6	2,99	142
Bimate + S	5	148,8	12,26	18,2	2,99	141
Dual + ametryn + S	2,75 + 4	149,1	12,31	18,3	2,98	142
CV %		6,0	3,5	5,6	1,7	8,7
LSD (0,05)		10,25	0,5066	1,178	0,0627	14,9
LSD (0,01)		13,75	0,6797	1,581	0,0809	19,99

6. Comments:

- **Leaf scorch:** Only paraquat treatments caused severe leaf scorch effects.
- **Crop measurements:** All treatments affected stalk elongation at an early age. Paraquat treatments were worst, Actril DS treatment less severe, and the long term weed control mixtures still less severe (with no differences between them).
- **Yield:** A similar pattern was apparent in terms of cane yields and sucrose yields. Only paraquat treatments caused statistically significant yield reductions.

PETT/HDN
12/9/84