

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code: FL.SUP.3/81/SW.TAB.

Cat. : 1256

TITLE: FLOWER CONTROL IN VARIETY N52/219

1. Particulars of Trial

<u>This crop</u> : 5th ratoon	<u>Spray Method:</u>
<u>Site</u> : Tambankulu field S	Spray-King overhead boom, using 3 TK 1,5 nozzles
<u>Region</u> : Swaziland (Northern Irrigated)	<u>Pressure:</u> 130 kPa
<u>Soil System</u> : Komatipoort	<u>Volume:</u> 50 l/ha
<u>Soil Set</u> : 'R'	<u>Weather at Spraying:</u>
<u>Design</u> : Randomised blocks	Calm 28°C
<u>Plot Size</u> : 15 m x 2 lines (nett)	<u>Condition of Cane at Spraying:</u>
<u>Variety</u> : N52/219	Height of cane (TVD) 230 cm
<u>Date & Age at Spraying</u> : 3rd March 1981 - 5 months	<u>Sampling Technique:</u>
<u>Sampling</u> : 10, 17, 25 weeks after spraying	6 stalks taken at random from the nett rows of plot (even spacing between samples)
<u>Date & Age at Harvest</u> : 2nd September - 12 months	
<u>Irrigation</u> : 1 025 mm	
<u>Rainfall</u> : 547 mm	
<u>Total</u> : 1 572 mm	

2. Objectives:

To determine the effect of Diquat and Ethrel on flowering and sucrose yields when applied to the crop at the period of flower initiation.

3. Treatments:

- 3.1 Control
- 3.2 Ethrel at 1,0 l product/ha
- 3.3 Diquat at 1,5 l product/ha

4. Results:

4.1 Crop growth measurements at 6 & 9 weeks after spraying (excessive lodging prevented further readings being taken)

Dates and weeks after spray	Stalk heights cm		Population x10 ⁻³	
	15/4 6	8/5 9	15/4 6	8/5 9
<u>Treatments:</u>				
Control	249	270	129	133
Ethrel	250	256	127	114
Diquat	250	258	107	123
Mean	250	261	121	123

4.2 Sample results

(a) Juice purity %

Dates and weeks after spray	13/5 10	30/6 17	25/8 25
<u>Treatments:</u>			
Control	76,07	83,23	86,7
Ethrel	79,93	85,27	88,2
Diquat	75,52	84,06	87,5
Mean	77,17	84,19	87,5

(b) Stalk mass (g/stalk)

Date and weeks after spray	13/5 10	30/6 17	25/8 25
<u>Treatments:</u>			
Control	1 162	1 185	1 306
Ethrel	1 202	1 315	1 273
Diquat	1 235	1 272	1 285
Mean	1 200	1 257	1 288
CV%	12,5	7,9	5,7
LSD (P=0,05)	259	171	127
(P=0,01)	394	260	194

(c) Ers % cane

Dates and weeks after spray	13/5 10	30/6 17	25/8 25
<u>Treatments:</u>			
Control	8,35	10,24	12,77
Ethrel	9,56	10,95	13,06
Diquat	7,86	10,29	12,55
Mean	8,59	10,49	12,79
CV%	5,0	4,2	3,8
LSD (P=0,05)	0,73	0,77	0,84
(P=0,01)	1,12	1,17	1,29

4,3 Results at harvest (12 months old)

Treatment	Cane t/ha	Ers % cane	Ers t/ha
Control	105	12,8	13,4
Ethrel	94	13,1	12,3
Diquat	100	12,6	12,5
CV%	8,1	3,8	9,8
LSD (P=0,05)	13,94	0,84	2,17
(P=0,01)	21,19	1,29	3,30

5. Comments:

- 5.1 Flowering: Very few flowers appeared in the treated plots while the controls showed a 7% flowering overall which was more than recorded in all the remaining flower suppression trials conducted in Swaziland this year.
- 5.2 Stalk heights: A slight retardation in cane growth due to Ethrel and Diquat treatments was recorded at 9 weeks after spraying.
- 5.3 Populations: The Ethrel treated cane tended to have a higher mortality than did the Diquat sprayed cane and the control.
- 5.4 Ripening: Ethrel produced a ripening effect but not Diquat.
- 5.5 At harvest the tons cane/ha, the ers % cane and the ers t/ha showed no significant differences between treatments and the control.