SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: Fl Sup 2/82/Sw Sim

Cat : 1318

TITLE: Flower Control In Variety NCo 376

1. Particulars of Trial

This crop	: 2nd ratoon
Site	: Simunye field 606. Panel 11
Region	: Northern Irrigated (Swaziland)
Soil System	: Komatipoort
Soil Set	: 'R'
Design	: Randomised blocks
Plot Size	: 2 rows x 6 m (net)
No of Replications	: 10
Variety	: NCo 376
Date & Age at spraying	: 2/3/1982 7,5 mnths
Sampling	: 6,14 & 23 weeks after spraying
Date & Age at harvest	: 11/8/1982 13 months
Irrigation	: Full requirements

Spray method:

Spray King Overhead Boom, using two TK 1,5 nozzles

Pressure: 150 Kpa

Volume: 56 /ha

Weather at spraying: Calm

Condition of cane at Spraying:

Average height to tvd 190 cm

Sampling Technique: 6 Stalks taken at random from each net row (even spacing between samples)

2. Objectives:

To determine the effect of two rates of Ethrel applied at the period of flower initiation, on flowering and sucrose yields.

3. Treatments

3.1 Control

3.2 Ethrel at 0,75 /ha

3.3 Ethrel at 1,50 /ha

4. Results:

4.1 Crop growth measurements at 0,.5, 6, 5 , & 14 weeks after spraying

Dates & weeks after spray	Stalk height cm 6/3 0,5	17/4 6,5	18/6 14	Population x 10^{-3} 17/4 6,5
Treatments:				
Control	186	234	255	123
Ethrel @ 0,75 ℓ/ha	189	243	260	123
Ethrel @ 1,5 ℓ/ha	194	247	266	129
Mean	190	241	260	125

4.2 Sample results

(a) Juice Purity %

Dates weeks after spray	13/4 6	7/6 14	9/8 23
Treatments			
Control	65,10	79,52	84,70
Ethrel @ 0,75 ℓ/ha	65,96	81,27	85,50
Ethrel @ 1,50 ℓ/ha	66,24	80,75	86,60
Mean	65,77	80,51	85,27

(b) Stalk mass (gm/stalk)

Dates & weeks after spray	13/4 6	7/6 14
Treatments		
Control	1 091	1 225
Ethrel@ 0,75 ℓ/ha	1 092	1 247
Ethrel@ 0,75 ℓ/ha	1 157	1 257
Mean	1 113	1 243
C V %	8	7
LSD (P=0,05)	83,5	81,7
(P=0,01)	114,2	111,8

(c) Ers % cane

Dates and weeks after Spray	13/4 6	7/6 14	9/8 23
Treatments			
Control	4,62	8,54	10,60
Ethrel @ 0,75 ℓ/ha	5,08	8,64	11,20
Ethrel @ 0,75 ℓ/ha	5.04	8,73	10,90
Mean	4,91	8,65	10,90
C V %	15,7	8,9	6,0
LSD (P=0,05)	0,72	0,73	0,62
(P=0,01)	0,99	0,99	0,85

4.3 Results at harvest (13 months old)

Treatment	Cane t/ha	Ers % cane	Ers t/ha
Control	139	10,6	14,8
Ethrel @ 0,75 ℓ/ha	144	11,2	16,2
Ethrel @ 0,75 ℓ/ha	145	10,9	15,9
Mean	143	10,9	15,6
C V %	7,5	6,0	9,4
LSD (P=0,05)	10,1	0,6	1,4
(P=0,01)	13,8	0,8	1,9

5. Comments:

5.1 Flowering: the control plots produced an average of 1,1 flowers per plot, and no flowers appeared in the sprayed cane.

5.2 Stalk heights: cane growth was slightly increased in the sprayed plots at 6,5 and 14 weeks after spraying.

5.3 Populations: at 6,5 weeks after spraying the plots treated with 1,5 ℓ Ethrel/ha had the highest stalk population but it is doubtful

that it is a treatment effect.

5.4 Ripening: both levels of Ethrel produced a small ripening effect.

5.5 At harvest cane yields were high throughout and uneffected by treatments. However, cane quality was improved by Ethrel (P=0,05 @ the 0,75 ℓ/ha level) and this in turn improved the tons of recoverable sugar (P=0,05 @ the 0,75 ℓ/ha level.

5.6 Because of the virtual lack of flowering the objective of the trial was not realised.

NBL/IS

27 December 1982