

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: FL Sup. 1/83/Sw.Mhc

Cat. No.: 1326

TITLE: Flower Control on variety N11

1. Particulars of Trial

This crop : 3rd ratoon
Site : Mhlume block 302
Region : Northern irrigated (Swaziland)
Soil system : Komatipoort
Soil set : 'Z' (Zwide)
Design : Randomised blocks (4 reps)
Plot Size : 17 m x 4 rows
1,5 m spacing
Date & Age at spraying : 2/3/82 5 months
Date & Age at harvest : 7/10/82 12,1 months
Sampling : 6, 14, & 31 weeks after spraying
Irrigation : Flood 31 day cycle
Rainfall : 779 mm

Spray Method: Spray-King overhead boom using two TK1,5 nozzles
Pressure: 150 Kpa
Volume : 42 l water/ha
Weather at spraying: Still & sunny
7.30am ± 30°C
Condition of cane at spraying: + 1,3 m in height to TVD; 6 green leaves
Sampling Techniques: Six stalks taken at random from each row (even spacing between sampling)

2. Objectives

To determine the effect of two rates of ethrel sprayed at the time of flower initiation on flower emergence and sucrose yield.

3. Treatments

- 3.1 Control
- 3.2 0,75 l ethrel + 1 l Reverseal 9/ha
- 3.3 1,50 l ethrel + 1 l Reverseal 9/ha

4. Results

4.1 Crop grow measurements at 1, 6, 15 and 27 weeks after spraying.

Dates and weeks after spray Treatments	Stalk height (m)				Stalk popu. x10 ⁻³ /ha	
	11/3	15/4	21/6	16/9	15/4	16/9
	1	6	15	28	6	28
Control	1,44	1,96	2,07	2,24	116	115
Ethrel @ 0,75 l/ha	1,42	1,81	1,94	2,01	107	104
Ethrel @ 1,50 l/ha	1,39	1,83	1,96	2,02	117	120
Mean	1,42	1,87	1,99	2,09	113	113

4.2 Sample Results

4.2.1 Juice purity %

4.2.2 Ers % cane

Dates and weeks after spray Treatments	13/4	7/6	4/10	Dates and weeks after spray Treatments	13/4	7/6	4/10
	6	14	31		6	14	31
Control	65,9	81,0	90,6	Control	5,4	10,5	15,4
Ethrel @ 0,75 l/ha	68,7	86	90,5	Ethrel @ 0,75 l/ha	6,2	11,8	15,4
Ethrel @ 1,50 l/ha	70,2	85,2	89,8	Ethrel @ 1,50 l/ha	6,6	11,5	15,9
Mean	68,2	84,9	90,3	Mean	6,1	11,3	15,6
C.V. %	5,3	1,8	1,1	C.V. %	14,7	3,0	3,0
LSD (P = 0,05)	6,3	2,6	1,8	LSD (P = 0,05)	1,5	0,6	0,9
				(P = 0,01)	2,3	0,9	1,3

4.2.3 Stalk mass (g/stalk)

Dates and weeks after spraying Treatments	13/4	7/6	4/10
	6	14	31
Control	715	883	971
Ethrel @ 0,75 l/ha	785	871	951
Ethrel @ 1,50 l/ha	725	873	950
Mean	742	876	957
C.V. %	8,3	9,1	6,7
L.S.D. (P = 0,05)	106	137	117

4.3 Results at harvest (12,1 months - sprayed at 5 months)

Treatments	Cane t/ha	Ers % cane	Ers t/ha
Control	111	15,4	17,1
Ethrel @ 0,75 l/ha	94	15,4	14,5
Ethrel @ 1,50 l/ha	99	15,9	15,8
Mean	101	15,6	15,8
C.V %	5,1	3,0	6,3
L.S.D. (P = 0,05)	9,3	0,9	1,8
(P = 0,01)	14,7	1,3	2,8

5. Comments5.1 Flowering

Very few flowers appeared in the area of the trial. Some flowers were recorded in the control plots only but even there the highest flowering % was less than one.

5.2 Stalk heights

Heights recorded at six weeks after spraying showed that both ethrel treatments had suppressed growth. Later recordings taken at 15 and 28 weeks after spraying showed the stunting effect to have persisted.

5.3 Ripening

Both levels of ethrel produced a significant ($P = 0,05$) ripening effect up to 14 weeks after spraying (possibly longer) but no differences persisted through to the time of harvest.

5.4 Cane yield

Both levels of applied ethrel produced significant decreases in cane yield. Surprisingly the lower ethrel rate reduced yield more than did the higher rate ($P = 0,01$). The sucrose yield showed a similar yet less marked trend.