

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code : R84/81/R1

Cat.No.: 1258

TITLE: RIPENER X LODGED CANE - PONGOLA

1. Particulars of the crop:

<u>This crop</u>	: 1st ratoon	<u>Spray method:</u>
<u>Site</u>	: Blks 1-28 : Pongola field Stn	CP3 overhead boom with two TK1,0 nozzles
<u>Region</u>	: Northern irrigated	<u>Pressure:</u> 200 kPa
<u>Soil system form/series</u>	: Komatipoort Hutton/Makatini	<u>Volume/ha:</u> 70 ℓ
<u>Design</u>	: Randomised block	<u>Weather at spraying:</u>
<u>Plot size</u>	: 12 m x 1,3 m x 4 rows	Fine, warm and calm
<u>Variety</u>	: NCo 376	<u>Condition of cane at spraying:</u>
<u>Date & age at spraying</u>	: 1/10/81 : 11,0 months	Well grown and green c 11 green leaves
<u>Date & age at harvest</u>	: 17/11/81 : 12,5 months	Av juice purity %: 85
<u>Sampling dates</u>	: 10/9/81 1/10/81 17/11/81	<u>Sampling technique:</u>
<u>Irrigation</u>	: October 74 mm November 61 mm	4 stalks taken at random from each of 4 points (2 m apart) in net row of each plot. Sampling points advanced by 1 m at each sampling. At harvest 16 stalks drawn at random from stacks in each plot
<u>Rainfall</u>	: 74 mm	
<u>Total</u>	: 209 mm	

2. Objectives:

1. To determine the response of lodged cane to Polado.
2. To determine the effect lodging may have on yield and quality of NCo 376.

3. Treatments:

1. Upright cane - not sprayed
2. Lodged cane - not sprayed
3. Upright cane - sprayed - Polado @ 550 g product/ha
4. Lodged cane - sprayed - Polado @ 550 g product/ha

Comments on Treatments:

- Cane was lodged by physically pushing stools over after saturating irrigation. Very few stalks were damaged in the process.
- Lodged cane was sprayed by extending the boom over each plot and walking in the interrow of the adjacent plot. This made it particularly difficult to maintain a constant walking speed with the result that rates of up to 800 g product per hectare were inadvertently applied.
- Similar rates were then applied to the upright cane.
- Leaf-cover of lodged plots ranged between 15 and 35%.

Irrigation:

- One day prior to lodging the trial received 74 mm irrigation, after which it received only one irrigation of 61 mm during November before drying off for harvesting.

4. Results:

4.1 Results from samples taken

Dates and weeks from lodging* and spraying	Stalk mass (g/stalk)			Purity %			Pol % cane		
	10/9 (0)*	1/10 0(3)	17/11 6(9)	10/9 (0)	1/10 0(3)	17/11 6(9)	10/9 (0)	1/10 0(3)	17/11 6(9)
<u>Treatments:</u>									
Upright-unsprayed	943	943	1080	85	92	87	12,2	12,2	13,7
Lodged -unsprayed	965	965	992	85	87	86	12,4	12,3	12,4
Upright- sprayed	1011	1020	1005	86	89	87	12,8	13,1	14,9
Lodged - sprayed	980	972	984	86	87	86	13,0	12,7	12,8
Mean	975	975	1015	85	89	86	12,6	12,6	13,4
CV %	10,1	8,8	7,5	1,5	4,6	2,5	4,7	3,6	5,4
LSD (P=0,01)	167	121	129	2,2	7,0	3,6	1,0	0,8	1,2

* Figure in brackets indicates weeks from lodging

Stalk lengths(cm) from samples taken 3 and 6 weeks after spraying

<u>Treatment</u>	<u>3 weeks</u>	<u>6 weeks</u>
Upright-unsprayed	228	282
Lodged -unsprayed	231	256
Upright-sprayed	237	275
Lodged -sprayed	231	245
Mean	232	264

4.2 Results at harvest

Treatments	Cane t/ha	Pol % cane	Suc t/ha
Upright-unsprayed	134	13,7	18,4
Lodged -unsprayed	131	<u>12,4</u>	16,2
Upright-sprayed	130	<u>14,9</u>	19,4
Lodged -sprayed	129	12,8	16,4
Mean	131	13,4	17,6
CV %	8,9	5,4	10,4
LSD (P=0,01)	19,7	1,2	3,1

5. Comments:

- 5.1 The quality of the lodged cane at 9 weeks was significantly lower than unlodged cane. This resulted in an appreciable (ns) loss (2,2 t/ha) of sucrose at harvest.
- 5.2 Despite the significant increase in quality of treated upright cane at 6 weeks the sucrose yields were not significantly higher owing to the lower (ns) cane yields of the treated cane.
- 5.3 The response of lodged cane to Polado was negligible.

RAD/HDN
25/1/82