

RmcI/cvp  
25 April 1991

**SOUTH AFRICAN SUGAR INDUSTRY  
AGRONOMISTS' ASSOCIATION**

Code No : EVT 1/83  
Cat No : 1480

**Title :** Estate variety trial at Sezela.

**1. Particulars of the project**

This crop	: Sixth ratoon (plant - sixth ratoon)	<b>Soil analysis</b>	Date: 10/08/1990					
Site	: Sezela	pH	OM (%)	Clay (%)	PDI			
Region	: South Coast	5,65	N-cat 3	30				
Soil system	: Umzinto Coast lowlands	<b>ppm</b>						
Soil form/series:	Mayo/Mayo	P	K	Ca	Mg	Na	Al	
Design	: Randomised blocks	20	116	>1650	> 350			
Variety	: See treatments	Age		: 12,4 months				
Fertiliser/ Ameliorants	: N P K Farm practice	Dates		: 25/7/89 - 7/8/90				
Soil description:	Dark grey/black blocky sandy clay loam merging into weathered rock	Rainfall		: 1238 mm				
		Irrigation		: Nil				
		LTM		: 1031 mm				

Rainfall (mm)

Month	J	A	S	O	N	D	J	F	M	A	M	J	J
1989/90	20	0	121	164	*428	46	49	62	296	30	9	13	0
LTM	30	50	97	100	132	114	103	117	118	58	63	19	30

\* (includes storm of 260 mm)

**2. Objectives**

To evaluate a number of released varieties on a granite derived soil typical of a significant proportion of the estate land.

**3. Treatments**

Varieties : (1) NCo376  
(2) N7  
(3) N11  
(4) N12  
(5) N13  
(6) N14  
(7) N16

4. Results - sixth ratoon at 12,4 months

Yield and crop characteristics at harvest

Variety	NCo 376	N7	N11	N12	N13	N14	N16	Mean	LSD 5%	LSD 1%	CV %
<b>Yield Components</b>											
<b>Stalk Data</b>											
Population x 1000/ha	107	110	97	121	103	91	102	104	7	10	5,7
Height (m)	1,76	1,76	1,73	1,70	1,84	1,76	1,87	1,78	0,98	1,32	4,6
Lodging (1=Nil 9=fully)	1,7	2,7	1,8	2,1	1,2	1,0	1,0	1,6			
Eldana/100 stalks	0	0	0	0	0	0	0	0			
<b>Yield Data</b>											
Purity	84,7	85,0	88,9	87,1	79,8	85,0	88,3	85,6	5,3	7,3	5,3
ERS % cane	10,7	10,6	12,4	10,9	9,3	10,8	11,1	10,8	1,5	2,0	11,5
Cane t/ha	61	53	56	62	62	62	67	61	6,4	8,7	8,9
Pol % cane	12,5	12,4	13,9	12,5	11,4	12,5	12,6	12,5	1,2	1,7	8,2
Suc t/ha	7,6	6,5	7,7	7,8	7,1	7,8	8,5	7,6	0,9	1,2	10,0

5. Summary of the cane and sucrose yields of the plant and sixth ratoon crops

<u>Crop</u>	<u>Age (months)</u>	<u>Period</u>
P	14,8	10/08/83 - 05/11/84
1R	12,9	05/11/84 - 02/12/85
2R	11,3	02/12/85 - 12/11/86
3R	11,3	12/11/86 - 20/10/87
4R	10,4	20/10/87 - 31/08/88
5R	10,8	31/08/88 - 26/07/89
6R	12,4	26/07/89 - 07/08/90
Mean	<u>12,0</u>	

	Crop	NCo 376	N7	N11	N12	N13	N14	N16	Mean
<b>Cane yield</b>									
Cane t/ha/crop	P	104	88	92	99	117	110	114	103
	1R	68	63	60	67	76	62	70	67
	2R	85	82	74	88	92	85	93	86
	3R	100	88	71	89	96	87	89	88
	4R	79	66	65	78	67	75	77	72
	5R	83	66	73	86	83	70	90	79
	6R	61	53	56	62	62	62	67	61
	Mean	83	72	70	81	85	79	86	(79)
Cane t/ha/annum	P	84	71	75	80	95	89	92	84
	1R	63	59	56	62	71	58	65	62
	2R	90	87	79	93	98	90	99	91
	3R	106	93	75	95	102	92	95	93
	4R	91	76	75	90	77	87	89	83
	5R	92	73	81	96	92	78	100	88
	6R	59	51	54	60	60	60	65	59
	Mean	84	73	71	82	85	79	86	(80)
<b>Sucrose yield</b>									
Sucrose t/ha/crop	P	14,9	12,9	14,6	15,1	17,0	16,5	16,8	15,4
	1R	9,2	7,6	8,1	8,5	9,5	7,6	9,4	8,6
	2R	10,2	9,5	9,9	10,6	11,3	9,4	11,7	10,4
	3R	12,3	11,2	9,2	11,2	12,2	10,8	11,4	11,2
	4R	10,2	9,1	9,0	10,6	8,5	10,5	9,9	9,7
	5R	10,1	8,3	9,8	11,1	9,2	8,3	11,2	9,7
	6R	7,6	6,5	7,7	7,8	7,1	7,8	8,5	7,6
	Accum Total	74,5	65,1	68,3	74,9	74,8	70,9	78,9	-
Sucrose t/ha/annum	P	12,0	10,4	11,8	12,2	13,7	13,3	13,5	12,4
	1R	8,6	7,1	7,5	7,9	8,8	7,1	8,7	8,0
	2R	10,8	10,1	10,5	11,3	12,0	10,0	12,4	11,0
	3R	13,1	11,9	9,8	11,9	13,0	11,5	12,1	11,9
	4R	11,8	10,5	10,4	12,2	9,8	12,1	11,4	11,2
	5R	11,2	9,2	10,9	12,3	10,2	9,2	12,4	10,8
	6R	7,4	6,3	7,5	7,5	6,9	7,5	8,2	7,4
	Mean	10,7	9,4	9,8	10,8	10,6	10,1	11,2	10,4
Sucrose t/ha as a % of NCo376	P	100	87	98	101	114	111	113	
	1R	100	83	88	92	103	83	102	
	2R	100	93	97	104	111	92	115	
	3R	100	91	75	91	99	88	93	
	4R	100	89	88	104	83	103	97	
	5R	100	82	97	110	91	82	111	
	6R	100	86	101	103	93	103	112	
	Mean	100	87	92	101	100	95	106	

## 6. Comments on results

### 6.1 Sixth ratoon crop

Recorded rainfall was above the long term mean but rainfall during the peak summer growing months was less than half that which was expected and yields in this crop were poor when compared with the previous ratoons. No eldana was recorded at harvest and lodging was minimal.

### 6.2 Comments on the plant and six ratoon crops

The trial site is located mid-slope on a SE facing aspect and the harvesting of the seven crops has been conducted annually

Varieties : on overall performance N16 accumulated an amount of 4,4 ts/ha/7 crops (6%) more than that of NCo376 which totalled a similar yield to that of N12 and N13. In comparison with NCo376 the performance of N12 improved in the past three ratoons despite being harvested young which is known not to favour this variety.

N11 has with the exception of the sixth ratoon consistently produced a sucrose yield less than that of NCo376 and the performance of N14 was variable. On overall sucrose yield performance, both varieties produced less than NCo376, N11 (-8%), N14 (-5%).

### 6.3 The trial continues into the seventh ratoon.