

RmcI/cvp
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**SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION**

Code No : EVT 5/86
Cat No : 1746

Title : Evaluation of released varieties on a shallow cartref soil on the north coast

1. Particulars of the project

This crop	: 2nd ratoon	Soil analysis				Date: 05/08/1989
Site	: Shakaskraal	pH	OM (%)	Clay (%)	PDI	
Region	: North Coast	6,2	N-cat 1	< 14		
Soil system	: Umzinto Coast lowlands	ppm				
Soil form/series:	Cartref/Cartref	P	K	Ca	Mg	Na Al
Design	: Randomised blocks	17	62	550	94	
Variety	: See treatments	Age (months) : 13,5 months				
Fertiliser/Ameliorants	: N P K Farm practice as per FAS	Dates : 5/7/89 - 30/8/90				
		Rainfall : 1133 mm				
		Irrigation : Nil				
		LTM : 1100 mm				

Rain (mm)	J	F	M	A	M	J	J	A	S	O	N	D
1989							31	26	40	86	309	123
1990	63	93	214	65	25	6	2	50				
LTM	143	138	113	61	58	22	29	49	93	98	112	106

2. Objectives

To evaluate recently released varieties on a Cartref soil on the north coast.

3. Treatments

Varieties : NCo376
N12
N13
N16
N17
N18

4. Results

Yield and crop characteristics at harvest (2nd ratoon - 13,8 month)

Yield Component	Variety	NCo 376	N12	N13	N16	N17	N18	Mean	LSD 5%	LSD 1%	CV %
	Stalk Data										
Population x 1000/ha		132	146	117	113	101	100	118			
Height (m)		1,68	1,94	1,65	1,87	1,90	1,73	1,79			
Eldana/100 stalks		3,6	3,2	2,4	5,6	2,4	1,2	3,1			
% Joints board		2,8	2,9	3,6	3,6	2,8	2,7	3,1			
Yield Data											
Purity		91,4	90,3	88,4	92,6	91,3	90,9	90,8	2,6	3,5	2,1
ERS % cane		13,1	13,2	12,0	13,8	13,5	12,8	13,1	0,9	1,3	5,4
Cane t/ha		101	91	85	86	78	79	87	17	23	14,5
Pol % cane		14,4	14,7	13,6	15,1	15,0	14,2	14,5	0,9	1,2	4,7
Suc t/ha		14,5	13,4	11,7	12,9	11,6	11,2	12,6	2,7	3,7	16,4

5. Summary of plant, 1st and 2nd ratoon yield data

P = 17,2 months - 11/12/86 - 18/05/88 - 2 506 mm - 147% of LTM
 1R = 13,6 months - 18/05/88 - 08/07/89 - 1 006 mm - 91% of LTM
 2R = 13,8 months - 05/07/89 - 30/08/90 - 1 133 mm - 103% of LTM

Variety	Suc t/ha/crop				Suc t/ha as a % of NCo376				Suc t/ha/month			Cane t/ha/annum		
	P	1R	2R	Accum Total	P	1R	2R	Mean	P	1R	2R	P	1R	2R
NCo376	15,8	11,0	14,5	41,3	100	100	100	100	0,92	0,81	1,05	90	74	88
N12	17,0	10,9	13,4	41,3	108	99	92	100	0,99	0,80	0,97	92	73	79
N13	15,8	8,8	11,7	36,3	100	80	81	87	0,92	0,65	0,85	89	66	74
N16	14,3	10,9	12,9	38,1	91	99	89	93	0,83	0,80	0,93	79	69	75
N17	15,5	8,6	11,6	35,7	98	78	80	85	0,90	0,63	0,84	90	57	69
N18	15,2	10,1	11,2	36,5	96	92	77	88	0,88	0,74	0,81	93	68	69
Mean	15,6	10,0	12,6	-	-	-	-	-	0,91	0,74	0,91	89	68	76

6. Comments on second ratoon results

6.1 General

Rainfall was 103% of the LTM and fairly evenly distributed throughout the crop cycle and in general yields improved in this ratoon.

6.2 Stalk data

6.2.1 Eldana borer infestation was low with a mean of 3.1 eldana per 100 stalks (E/100's) with the highest counts in N16 at 5,6 E/100's and the lowest in N18 at 1,8 E/100's.

6.2.2 No lodging occurred in this crop.

7. Comments on yield (plant, first and second ratoon)

7.1 The accumulated sucrose yields of the three crops of NCo376 and N12 are equal and superior to other varieties. The performance of N12 in comparison with NCo376 has decreased with successive ratoons. These have been harvested at a young age (1R = 13,6 months and 2R = 13,8 months) and this is known not to favour N12.

7.2 The sucrose yield of N16 was similar to that of NCo376 only in the second ratoon crop and on overall performance over three crops it has yielded 7% (3,2 t) less sucrose.

7.3 In comparison with NCo376 there were no significant differences in the plant crop yields of N13, N17 and N18 but their performance in subsequent ratoons has been substantially inferior and on overall performance over three crops the results are N13 (- 13%), N17 (- 15%) and N18 (- 12%).

7.4 The trial continues into the third ratoon.