

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code : RVT 17/81

Cat. No: 1352

TITLE: Released variety of trial - UMFOLOZI

1. Particulars of the project

This Crop : Plant

Site : Hitchins Bros

Soil series : Dundee

Design : Incomplete latin square

Fertilizer : N P K Zn
Kg/ha

Water Regime: Rainfed

Soil analysis: Date: 23/9/81

pH Clay%
6,7 10

ppm

P K Ca Mg
71 120 954 220

Age: 11,4 months
20/11/81 to 3/11/82

2. Objectives

To evaluate the released varieties that are resistant to smut for use in the Umfolozi flats, specifically the moderate sandy loams.

3. Varieties

Standard : NCo 376

Smut resistant: N52/219, J59/3 N11, N14, N15

Unreleased : 69E991

Rainfall (mm) Riverview

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1981/82	102	15	87	43	124	92	43	1	8	4	21	70
LTM	78	93	125	141	96	71	77	18	29	34	65	80

Total rainfall= 613 mm

Long term mean= 907 mm

4. Results

Yield component		Variety	69E 991	N11	N15	NCo 376	N14	N52/ 219	J59/3	Mean	LSD 5%	CV %
<u>Stalk quality data</u>												
21/09/1982) 10,0 months)	Pol %		13,3	14,7	15,7	12,3	13,4	13,8	14,9	14,0	0,9	4,8
	Ers %		11,6	13,3	14,3	10,6	11,8	12,3	13,7	12,5	0,9	5,5
	Purity		86,0	90,4	91,5	85,8	88,1	88,9	91,3	88,9	1,2	1,0
Harvest) 11,4 months)	Pol %		13,9	14,6	15,2	12,9	12,8	14,1	13,7	13,9	1,0	5,7
	Ers %		12,5	13,3	13,9	11,5	11,5	12,6	12,4	12,5	1,1	6,8
	Purity		90,8	92,4	92,6	90,4	90,8	89,3	91,2	91,0	1,7	1,4
<u>Stalk quantity data at harvest</u>												
Population	('000/ha)		101	102	82	120	115	77	93	99	4,5	3,5
Height (m)	Untopped(m)		2,54	2,03	2,02	2,00	1,98	2,04	1,88	2,07	0,11	4,3
	Topped(m)		2,16	1,75	1,66	1,64	1,60	1,68	1,65	1,74	0,12	5,4
Lodging score	1=upright, 9=lodged		2,0	1,0	1,0	1,0	1,0	1,20	2,0	1,3		
<u>Yield data</u>												
Yield t/ha	Cane		121	100	90	109	106	94	92	102	9,0	6,8
	Sucrose		15,1	13,4	12,6	12,5	12,1	11,8	11,4	12,7	1,4	8,3
Yield as a % of NCo 376)	Cane		111	92	82	100	97	86	84	94	8	
	Sucrose		120	107	101	100	97	94	91	102	11	
Yield per) month (t/ha)	Cane		10,6	8,8	7,9	9,6	9,3	8,2	8,1	8,9		
	Sucrose		1,32	1,18	1,10	1,10	1,06	1,04	1,00	1,11		
Yield per) 100 mm rain)	Cane		19,7	16,3	14,7	17,8	17,3	15,3	15,0	16,6		
	Sucrose		2,46	2,18	2,06	2,04	1,98	1,92	1,86	2,07		
<u>3rd leaf nutrient content at 2,6 months 10/02/1982</u>												
	N % DM		2,29	2,34	2,32	2,63	2,42	2,37	2,38	2,39		
	P % DM		0,28	0,27	0,26	0,30	0,26	0,24	0,30	0,27		
	K % DM		1,40	1,47	1,36	1,18	1,13	1,36	1,76	1,38		

Comments

Rainfall for the duration of this crop was exceptionally low. The crop nevertheless showed little sign of stress and produced good yields. The abnormally high yield per unit of rainfall received indicates that this crop had access to water stored deep in the soil profile. Smut levels in this crop were low.

Stalk elongation

69E991 elongated more rapidly than the other varieties throughout the growth period and was some 1 000 mm taller than the other varieties at harvest. N52/219 and N15 were similar, elongating rapidly at first but losing their height advantage during the second flush of growth. N11 and N14 elongated at the same rate as NCo 376 and J59/3 was typically short throughout.

Stalk populations

Stalk populations in all varieties were below normal.

Sucrose content

The changes in sucrose content between the two sampling occasions were considerable. N15 and J59/3 suffered a loss of more than one percent unit of sucrose between September and November while NCo 376 and 69E991 gained just less than one unit.

Cane and Sucrose yield

The superiority of 69E991 in terms of both cane and sucrose yield was highly significant.

This variety normally yields well in the plant crop but tends to lose vigour in ratoon crops.

N11 also produced significantly more sucrose per hectare than the other varieties which did not differ significantly with regard to sucrose yield. If the trial had been harvested when the first sucrose sample was taken, J59/3 may have outyielded NCo 376, N14 and N52/219.

NGI-B/IS
4 July 1983

RIT 17/81 UMF DLOZI

