

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

VARIETY TRIAL

<u>Catalogue No:</u> 65	<u>Soil Analysis:</u>						
<u>This crop</u> : Plant	p.p.m.						
<u>Site</u> : Peatties Lake, Cramond	<u>O.M%</u>	<u>pH</u>	<u>P.</u>	<u>K.</u>	<u>Ca.</u>	<u>Mg.</u>	<u>Na.</u>
<u>Altitude</u> :	3.78	5.40	7.2	140	760	182	280
<u>Soil</u> :	<u>Seed Source:</u>						
<u>Design</u> : Randomised Block	Illovo Sugar Estates - Local sections						
<u>Varieties</u> : (See Treatment)	Age: Planted 15.9.65						
<u>Fertilization:</u>	N	P	K	Harvested 22.7.66 10 months			
1200 lbs/ac. amm. super	30.0	96.0	-				
500 lbs/ac. 1.0.1(29)	72.5		72.5				
Total cost/ac. R25.70	102.5	96.0	72.5	Frost: May, 1966.			
<u>Water regime:</u> Spray irrigated							

- Object: (1) To test the feasibility of growing cane in valleys under irrigation but prone to severe frosts.
- (2) If feasible, to select a variety.

Treatments: N.Co. 293, 376, 382, 310
 N. 50/211, 51/539, 51/168, 53/216
 C.B. 36/14, 38/22

RESULTS:

(a) Yield

<u>Variety</u>	<u>T.C.A.</u>	<u>T.C.A.M.</u>	
N51/168	20.8	2.08	
N53/216	20.4	2.04	
NCo 376	20.2	2.02	S.E. Variety mean 1.59 T.C.A.
CB36/14	20.1	2.01	L.S.D. (5%) 4.6 T.C.A.
NCo 293	19.6	1.96	(1%) 6.2 T.C.A.
CB38/22	16.6	1.66	C.V. 18%
NCo 382	15.6	1.56	
NCo 310	15.1	1.51	
N51/539	14.6	1.46	
N50/211	13.5	1.35	

(b) Leaf Analysis:

Date of top dressing 25.2.66
 Leaf analysis 26.3.66

<u>Variety</u>	<u>%N.</u>	<u>%P.</u>	<u>%K.</u>	<u>%Mg.</u>	<u>%Ca.</u>	<u>%Na.</u>
N51/168	1.83	0.23	0.96	0.38	0.43	0.022
N53/216	2.01	0.25	1.04	0.35	0.38	0.019
NCo 376	2.01	0.25	1.06	0.45	0.43	0.024
CB36/14	1.86	0.22	1.17	0.38	0.52	0.020
NCo 293	1.93	0.26	1.13	0.42	0.49	0.022
CB38/22	1.83	0.23	1.04	0.37	0.38	0.022
NCo 382	1.96	0.25	1.04	0.45	0.52	0.024
NCo 310	1.91	0.24	1.15	0.38	0.43	0.024
N51/539	1.92	0.22	1.08	0.45	0.49	0.020
N50/211	2.12	0.24	0.86	0.54	0.49	0.020

(c) Sucrose %

Sucrose percent cane was not estimated but hand refractometer readings were taken on cane juice extracted by a small mill.

<u>Variety</u>	<u>Brix%</u>
N51/168	14.0
N53/216	16.0
NCo 376	15.0
CB36/14	15.0
NCo 293	15.0
CB38/22	16.0
NCo 382	15.0
NCo 310	17.0
N51/539	16.0
N50/211	14.0

DISCUSSION:

Yield:

The experiment was subjected to uncontrolled severe weed infestation, however, the first 6 varieties all yielded tons cane per unit time in excess of the Midlands mean of 1.65 T.C.A.M. for the year ending April 1965.

(Du Toit & Murdoch 1966)

The feasibility of growing cane in frost prone valleys, with irrigation, is not as remote as was first imagined but further ratoons should be taken before this practice can be recommended. The effect of frosted cane to the mill will also have to be investigated.

Leaf analysis and Sucrose %

Varieties N51/168 and N50/211 have yielded low brix readings which is in accordance with the data quoted to the S.A.S.I.A.A. in September 1965.

However, it is interesting to note that both these varieties also have the lowest K % on leaf analysis (i.e. 0.96 and 0.86 respectively) although all plots received 72.5 lbs K per acre which is in excess of standard S.A.S.A. Experiment Station recommendations (Wilson 1960)

REFERENCES:

- Du Toit J.L. and Murdoch M.G. (1966) Summary of Agricultural data
Sugar Cane Crop 1965. Proc.
S.A. Sugar Tech. Assoc. 40th Congress
pp. 293 - 298
- Wilson J. (1960) Guide to the use of fertilizers
S.A.S.A. Expt. Stat. Bulletin 13.