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SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Nitrogen Carrier Trial

Catalogue No: 178
This Crop: Plant
Site: Doornkop Sugar Co., Waterbosch
 Section, CI(X)
Altitude: 1,300 ft.
Soil series: Cartref
Design: 5 x 5 Latin Square
Variety: N:Co.382
Fertilizer: 120 N, 130 P, 120 K.
Water Regime: Dryland

Soil Analysis:

<u>pH</u>	<u>OM %</u>	<u>Clay%</u>	
5.7	1.3		
<u>ppm</u>			
P	K	Ca	Mg
74	356	1344	326
<u>Age:</u> P-19 months		3/63 - 11/64	
<u>Rainfall:</u>		49.7 ins.	

Object:

To compare the efficiencies of four nitrogen fertilizers among themselves and with "no nitrogen" control.

Treatments:

1. No nitrogen	2. Urea
3. Limestone ammonium nitrate	4. Ammonium nitrate
5. Ammonium sulphate.	

Results:

Treatment	T.C.A.	Suc.%	T.S.A.
1. No nitrogen	29.6	15.60	4.63
2. Urea	40.7	15.75	6.41
3. Limestone ammonium nitrate	34.9	15.69	5.47
4. Ammonium nitrate	37.0	15.23	5.64
5. Ammonium sulphate	41.4	15.61	6.46
Mean	36.7	15.58	5.72
S.E. of treatment mean	1.30	0.215	0.220
L.S.D. (0.05)	4.0	0.66	0.67
(0.01)	5.5	0.92	0.94
C.V. %	7.9	3.1	8.6

Comments:

There is significant evidence that all treated plots have outyielded Control, both for Tons Cane per acre and Tons Sucrose per acre.

Evidence is also significant that N Carrier treatments differ amongst themselves. For Tons Sucrose per acre, Urea and Ammonium sulphate yield significantly higher than Ammonium nitrate and Limestone ammonium nitrate.

The same applies for Tons Cane per acre, except that the advantage of Urea over Ammonium nitrate is just short of the value required for significance (P = 0.05).

There is no significant evidence of any effect of treatments on sucrose per cent cane.

13th May, 1966.

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Nitrogen carrier trial.

Catalogue No: 178
This Crop: 1R
Site: Doornkop Sugar Co. Water-
bosch Section.
Altitude: 1300 ft.
Soil series: Cartref
Design: 5 x 5 Latin square
Fertilizer:
120N, 17P, 149K
Water regime: Dryland

Soil Analysis:

No Data available

Age: P : 19 mths. (3/63 - 11/64)
1R : 19 mths. (11/64 - 5/66)
Rainfall: 54.36"

Object:

To compare the efficiencies of four nitrogen fertilizers among themselves and with "no nitrogen" control.

- Treatments:
1. No nitrogen
 2. Urea
 3. L.A.N.
 4. Ammonium Nitrate
 5. Ammonium Sulphate

Results:

	T.C.A.	S. % C.	T.S.A.
1. Control	35.4	15.64	5.54
2. Urea	50.7	15.86	8.03
3. Limestone amm. nitrate	42.0	15.61	6.55
4. Ammonium nitrate	44.1	15.60	6.87
5. Ammonium sulphate	52.0	15.48	8.07
Mean	44.9	15.64	7.01
S.E. treatment mean	2.29	0.174	0.327
L.S.D. (0.05)	7.0	0.53	1.00
(0.01)	9.8	0.74	1.39
C.V. %	11.4	2.5	10.4

Comments:

1. There is significant evidence that treated plots have outyielded control both for T.C.A. and T.S.A. Only in the case of T.C.A. for the limestone ammonium nitrate treatment is the advantage short of the P = 0.05 significance value.

2. Evidence is also significant that N-Carrier treatments differ amongst themselves. For T.S.A., urea and ammonium sulphate yield significantly higher than ammonium nitrate and limestone ammonium nitrate, and the same applies for T.C.A. except that the advantage of urea over ammonium nitrate is short of the $P = 0.05$ significance value.
3. There is no significant evidence of any effect of treatments on Sucrose % cane.

8th June, 1966.