

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

IRRIGATED NITROGEN AND POTASH TRIAL

Catalogue No: 114  
This Crop: Plant  
Site: Ottawa Section N.E.L.  
 Paddock Field  
Altitude: 200'  
Soil Series: Winderemere Clay  
Design: 3 x 3 Factorial  
Variety: N:Co.376  
Fertilizer: See treatments  
Water Regime: Irrigated trial  
 23.28" applied.

Soil Analysis: (Beater)

p.p.m.				
pH	P	K	Ca	Mg
7.6	21	60	7301	381

Age: 14 Months (8/63 - 10/64)

Rainfall this  
Crop: 35.76"

Object: To test fertilizer responses under irrigation.

<u>Treatments:</u>	Amm. Nitrate	Nil	Lbs./acre	All Plots	
				Supers	600 lbs./acre
	31% N	250	" "	8.3% P	
	N. Potash	500	" "		
	50K	NIL	Lbs./acre		
		200	" "		
		400	" "		

Results:

lb. Ammon. Nitrate/ac.	lb. N /ac.	Suc. %	T.C.A.	T.C.A.M.	T.S.A.	lbs. S.A.M.	Purity
0	0	15.01	43.1	3.08	6.47	924	92.6
250	77.5	15.05	46.4	3.31	6.95	992	92.4
500	155	14.82	48.9	3.49	7.24	1034	92.7

S.E. =  $\pm$  6.67  
 C.V. = 14.4%

Comment: No significant response to N.  
 No significant N x K interaction.

26th November, 1966.

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IRRIGATED NITROGEN AND POTASH TRIAL

Catalogue No: 114  
This Crop: 1st Ratoon  
Site: Ottawa Section, Natal  
 Estates, Paddock Field.  
Altitude: 200'  
Soil Series: Windermere clay  
Design: 3 x 3 factorial  
Variety: N:Co.376  
Fertilizer:  
Water regime: Irrigated 29.0" app.

Soil Analysis: (Beater)

	ppm			
pH.	P.	K.	Ca.	Mg.
7.6	21	60	7301	381

Age: 12 months (10/64 - 11/65)  
Rainfall this crop: 28.87"

Object:

To test fertilizer responses under irrigation.

<u>Treatment:</u>	L.A.N.	300 lbs/acre	<u>All Plots</u>
	20.5%	600 " "	Supers 600 lbs/acre
		900 " "	8.3% P
	M. Potash	Nil " "	
	50% K	200 " "	
		400 " "	

Results:

lb. L.A.N. /ac	lb. N /ac	Sucrose %	T.C.A.	T.C.A.M.	T.S.A.	lbs, S.A.M.
300	61.5	12.72	50.2	4.18	6.41	1068
600	123.0	12.57	56.3	4.69	7.05	1175
900	184.5	12.44	55.7	4.64	6.93	1155

S.E. = ± 5.89

C.V. = 10.9 %

Comments:

No significant response to N.

No significant N x K interaction.

## SOUTH AFRICAN SUGAR INDUSTRY

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IRRIGATED NITROGEN AND POTASH TRIAL

<u>Catalogue No:</u> 114	<u>Soil Analysis:</u> (Beater)
<u>This Crop:</u> Plant	
<u>Site:</u> Ottawa Section N.E.L. Paddock Field.	p.p.m.
<u>Altitude:</u> 200'	pH    P    K    Ca    Mg
<u>Soil Series:</u> Windermere Clay	7.6   21   60   7301   381
<u>Design:</u> 3 x 3 Factorial	<u>Age:</u> 14 months (8/63 - 10/64)
<u>Variety:</u> N:Co.376	
<u>Fertilizer:</u> See treatments	<u>Rainfall this</u>
<u>Water Regime:</u> Irrigated trial 23.28" applied	<u>Crop:</u> 35.76"

Object: To test fertilizer responses under irrigation.

<u>Treatments:</u>	Amm. Nitrate	Nil	lbs./acre	<u>All Plots</u>
	31% N	250	" "	Supers 600 lbs./acre
	N. Potash	500	" "	8.3% P
	50% K	Nil	" "	
		200	" "	
		400	" "	

lb. Muriate of Potash/ac.	lb. K /ac.	Suc. %	T.C.A.	T.C.A.M.	T.S.A.	lb. S.A.M.	Purity
0	0	15.05	41.2	2.94	6.19	884	92.6
200	100	14.89	48.5	3.46	7.21	1030	92.6
400	200	14.93	48.7	3.48	7.27	1038	92.4

S.E. =  $\pm$  6.67

C.V. = 14.4%

Comment: There was a significant response to 200 lb. Muriate of Potash per acre compared with control. The N x K interaction was not significant.

26th November, 1966.

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SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Nitrogen & Potash Trial

<p>Catalogue No: 114  <u>This crop:</u> 2nd Ratoon  <u>Site:</u> Paddock - Ottawa - N. Estates  <u>Altitude:</u> 200'  <u>Soil series:</u> Windermere  <u>Design:</u> 3 x 3 factorial  <u>Variety:</u> N:Co.376  <u>Fertilizer:</u> See treatments  <u>Water regime:</u> Irrigated.</p>	<p><u>Soil analysis:</u>  <div style="text-align: center;">ppm</div> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>pH</td> <td>P</td> <td>K</td> <td>Ca</td> <td>Mg</td> </tr> <tr> <td>7.6</td> <td>21</td> <td>60</td> <td>7301</td> <td>381</td> </tr> </table> <u>Age:</u> 15 months (10/11/65 - 6/2/67)  <u>Rainfall:</u> 39.37"  <u>Irrigation:</u> 19.00"</p>	pH	P	K	Ca	Mg	7.6	21	60	7301	381
pH	P	K	Ca	Mg							
7.6	21	60	7301	381							

Object:  
 To test fertilizer responses under irrigation.

Treatments:

N1 - 64 lb/ac	K1 - 0 lb/ac all plots
N2 - 129 "	K2 - 100 " 25 P
N3 - 192 "	K3 - 200 "

Results:

	K1	K2	K3	Mean	K1	K2	K3	Mean	K1	K2	K3	Mean
N1	47.5	52.5	57.6	52.6	13.55	13.95	14.03	13.86	6.41	7.33	8.07	7.28
N2	44.3	62.5	60.0	55.6	13.88	13.76	13.98	13.89	6.16	8.59	8.39	7.72
N3	47.5	58.3	59.3	55.1	13.56	13.65	13.70	13.65	6.46	7.91	8.12	7.50
Mean	46.5	57.8	59.0		13.68	13.80	13.92		6.35	7.95	8.20	
S.E. Body of table				3.20				0.218				0.413
S.E. NE'K means				1.85				0.126				0.238
L.S.D. NE'K means												
(0.05)				5.5				0.38				0.71
(0.01)				7.6				0.52				0.98
C.V. %				10.2				2.7				9.5

1. Significant response to K for T.C.A. and T.S.A. No significant evidence of any effect on N or any effect of treatment on S. % C.
2. Response to K is not significant beyond the K2 level:

T.C.A.	T.S.A.
K2 - K1 11.3 )	1.60 )
K3 - K2 1.2 ) S.E. = 2.6	0.25 ) S.E. = 0.34

14th March, 1968.

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IRRIGATED NITROGEN AND POTASH TRIAL

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 Estates, Paddock Field.  
Altitude: 200'  
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Design: 3 x 3 factorial  
Variety: N:Co.376  
Fertilizer:  
Water Regime: Irrig. 29.0" app.

Soil Analysis: (Beater)

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	P.	K.	Ca.	Mg.
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Age: 12 months (10/64 - 11/65)  
Rainfall this crop: 28.87"

Object:

To test fertilizer responses under irrigation.

<u>Treatments:</u>	L.A.N.	300 lbs/acre	<u>All Plots:</u>
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		900 " "	8.3% P
	M. Potash	Nil " "	
	50% K	200 " "	
		400 " "	

Results:

lb. Muriate of Potash/ac	lb. K /ac.	Sucrose %	T.C.A.	T.C.A.M.	T.S.A.	lb. S.A.M.
0	0	12.60	47.2	3.93	5.95	992
200	100	12.49	58.4	4.87	7.31	1218
400	200	12.64	56.5	4.71	7.14	1190

S.E. = ± 5.89

C.V. = 10.9 %

Comments:

There was a significant response to 200 lb. Muriate of Potash compared with control. There was no N x K interaction.

25th November, 1966.