

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

2 x 2 x 2 NPK FACTORIAL

Catalogue No.: 54  
This crop: Plant, 1 Ratoon,  
 2 Ratoon  
Site: Polkinghorne, Inyaninga  
Altitude: 300'  
Soil series: Dolerite  
Design: 2 x 2 x 2 NPK. 3 reps.  
Variety: N:Co.310  
Fertilizer: See below  
Water regime: Dryland

Soil Analysis:

	pH	OM%	Clay%	p.p.m.			
				P	K	Ca	Mg
P	5.61	4.5	-	22	85.7	4295	2004
1R	5.31	4.24	-	19	85.7	4252	1916
2R	5.70	6.34	-	43	99	3581	2180

Age: P - 20 mths. May '59 - Sept. '61  
 1R - 21 " Sept. '61 - June '63  
 2R - 13 " June '63 - July '64

Rainfall: P = 98.91" 1R = 64.57"  
 2R = 69.43"

Object: To compare two levels of K in a plant crop and two ratoons.

Fertilizer:

Plant		1st Ratoon		2nd Ratoon	
N <sub>0</sub>	-	N <sub>1</sub> (Urea)	103 lbs N	N <sub>1</sub> Lan.	80 lbs N
N <sub>1</sub> (Amm. Nit.)	148 lbs N	N <sub>2</sub> "	207 "	N <sub>2</sub> "	180 "
P <sub>1</sub> (Superphos.)	24.9lbs P	P <sub>1</sub> (Superphos.)	24.9 lbs P	P <sub>1</sub> (Superphos.)	24.9 lbs P
P <sub>2</sub> "	49.8 "	P <sub>2</sub> "	49.8 "	P <sub>2</sub> "	29.8 "
K <sub>1</sub> (Mur. of Pot.)	100 lbs K	K <sub>1</sub> (Mur. of Pot.)	100 lbs K	K <sub>1</sub> (Mur. of Pot.)	100 lbs K
K <sub>2</sub> "	200 "	K <sub>2</sub> "	200 "	K <sub>2</sub> "	200 "

Treatments:

	lbs K/acre		
Plant	1st Ratoon	2nd Ratoon	
K <sub>1</sub> :100	K <sub>1</sub> :100	K <sub>1</sub> :100	
K <sub>2</sub> :200	K <sub>2</sub> :200	K <sub>2</sub> :200	

Results:

Treatments	T.C.A.	% Suc.	T.S.A.
K <sub>1</sub>	57.2	14.39	8.23
K <sub>2</sub>	60.2	14.38	8.66
K <sub>1</sub>	38.5	14.82	5.71
K <sub>2</sub>	39.0	14.96	5.84
K <sub>1</sub>	28.8	15.63	4.41
K <sub>2</sub>	35.0	15.73	4.81

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2R	5.70	6.34	-	43	99	3581	2180

Age: P - 28 mths. May '59 - Sept. '61  
 1R - 21 " Sept. '61 - June '63  
 2R - 13 " June '63 - July '64

Rainfall: P = 98.91" 1R = 64.57"  
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Object: To compare two levels of N in a plant crop and two ratoons.

Fertilizer:

Plant		1st Ratoon		2nd Ratoon	
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N <sub>1</sub> (Amm. Nit.)	148 lbs N	N <sub>2</sub> "	207 "	N <sub>2</sub> "	180 "
P <sub>1</sub> (Superphos.)	24.9 lbs P	P <sub>1</sub> (Superphos.)	24.9 lbs P	P <sub>1</sub> (Superphos.)	24.9 lbs P
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K <sub>2</sub> "	200 "	K <sub>2</sub> "	200 "	K <sub>2</sub> "	200 "

Treatments:

	lb N/acre		
Plant	1st Ratoon	2nd Ratoon	
N <sub>0</sub> -	N <sub>1</sub> :103	N <sub>1</sub> : 80	
N <sub>1</sub> :148	N <sub>2</sub> :207	N <sub>2</sub> :180	

Results:

	Treatments	T.C.A.	% Suc.	T.S.A.
P	N <sub>0</sub>	59.0	14.34	8.45
	N <sub>1</sub>	58.5	14.42	8.44
1 R	N <sub>1</sub>	38.8	15.11	5.87
	N <sub>2</sub>	36.8	14.67	5.68
2 R	N <sub>1</sub>	26.2	15.47	4.05
	N <sub>2</sub>	32.5	15.89	5.17