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SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

2 x 2 x 2 NPK FACTORIAL

Catalogue No.: 51  
This crop: Plant: 1 Ratoon:  
 2 Ratoon.  
Site: Carters Hill, Sputu  
Altitude: 400'  
Soil series: Dwyka  
Design: 2 x 2 x 2 NPK 3 reps.  
Variety N:Co.376  
Fertilizer See Below  
Water regime: Dryland

Soil Analysis:

	pH	OM%	Clay%	
1R	5.19	2.76	-	
2R	5.21	3.32	-	
p.p.m.				
	P	K	Ca	Mg
1R	18	135	2083	1560
2R	9	147	1418	273

Age: 24 mths. June '59 - June '61  
 1R-25 " June '61 - July '63  
 2R-23 " July '63 - June '65

Rainfall: P=76.51" 1R=70.06" 2R=56.45"

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

Fertilizer:

Plant	1st Ratoon	2nd Ratoon
Amm. Nit. N <sub>1</sub> 148 lbs N/ac	Urea N <sub>1</sub> 103 lbs N/ac N <sub>2</sub> 207 "	Lan. N <sub>1</sub> 90 lbs N/ac N <sub>2</sub> 180 "
Supers P <sub>1</sub> 24.9 lbs P P <sub>2</sub> 49.8 "	Supers P <sub>1</sub> 24.9 lbs P P <sub>2</sub> 49.8 "	Supers P <sub>1</sub> 24.9 lbs P P <sub>2</sub> 49.8 "
Mur. of Pot. K <sub>1</sub> 100 lbs K K <sub>2</sub> 200 "	Mur. of Pot. K <sub>1</sub> 100 lbs K K <sub>2</sub> 200 "	Mur. of Pot. K <sub>1</sub> 100 lbs K K <sub>2</sub> 200 "

Treatments:

	<u>lb N/acre</u>	
<u>Plant</u>	<u>1st Ratoon</u>	<u>2nd Ratoon</u>
N <sub>0</sub> : 0	N <sub>1</sub> : 103	N <sub>1</sub> : 90
N <sub>1</sub> : 148	N <sub>2</sub> : 207	N <sub>2</sub> : 180

Results:

	Treatment	T.C.A.	Suc. %	T.S.A.
Plant	N <sub>0</sub>	76.2	13.12	10.00
	N <sub>1</sub>	72.3	13.18	9.53
1st Ratoon	N <sub>1</sub>	52.4	13.36	7.01
	N <sub>2</sub>	51.3	13.03	6.69
2nd Ratoon	N <sub>1</sub>	34.5	13.19	4.55
	N <sub>2</sub>	30.5	12.63	3.86

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2R	5.21	3.32	-	
p.p.m.				
	P	K	Ca	Mg
1R	18	135	2083	1560
2R	9	147	1418	273
<u>Age:</u>	24 mths. June '59 - June '61.			
1R.	25	"	June '61 - July '63.	
2R	23	"	July '63 - June '65.	
<u>Rainfall:</u>	P=76.51" 1R=70.06" 2R=56.45"			

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

Fertilizer:

Amm. Nit.	N <sub>1</sub> 148 lbs N/ac	Urea	N <sub>1</sub> 103 lbs N/ac	Lan.	N <sub>1</sub> 90 lbs N/ac
			N <sub>2</sub> 207 "		N <sub>2</sub> 180 "
Supers	P <sub>1</sub> 24.9 lbs. P	Supers	P <sub>1</sub> 24.9 lbs P	Supers	P <sub>1</sub> 24.9 lbs P
	P <sub>2</sub> 49.8 "		P <sub>2</sub> 49.8 "		P <sub>2</sub> 49.8 "
Mur. of Pot.	K <sub>1</sub> 100 lbs K	Mur. of Pot.	K <sub>1</sub> 100 lbs. K	Mur. of Pot.	K <sub>1</sub> 100 lbs K
	K <sub>2</sub> 200 "		K <sub>2</sub> 200 "		K <sub>2</sub> 200 "

Treatments:

lb. 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:

	Treatment	T.C.A.	% Suc.	T.S.A.
Plant	K <sub>1</sub>	76.42	13.14	10.01
	K <sub>2</sub>	72.4	13.16	9.52
1st R.	K <sub>1</sub>	53.9	13.34	7.19
	K <sub>2</sub>	49.8	13.05	6.51
2nd R.	K <sub>1</sub>	33.1	13.01	4.31
	K <sub>2</sub>	31.9	12.81	4.10