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SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

2 x 2 x 2 NPK FACTORIAL

Catalogue No: 52  
This Crop: P, 1R, 2R, 3R  
Site: Red Hill, Mwavine  
Altitude: 300'  
Soil series: Sand  
Design: 2 x 2 x 2 NPK 3 reps.  
Variety: N:Co.376  
Fertilizer: See below  
Water regime: Dryland

Soil analysis:

			ppm			
pH	OM%	Clay%	P	K	Ca	Mg
P 5.7	.65	-	20.9	702	5721	50
1R 5.3	.78	-	21	74	5462	58
2R 5.4	.73	-	22	78	5261	68
3R 5.3	1.16	-	20	85	245	82

Age: P 22 mths Feb 60 - Dec 61/  
 1R 18 mths Dec 61 - June 63  
 2R 12 mths Jun 63 - June 64  
 3R 15 mths Jun 64 - Oct 65

Rainfall: P 82.84", 1R 52.81"  
 2R 34.73", 3R 45.82"

Object:

To compare two levels of N in a plant crop and three ratoons

Fertilizer:

Plant	1st Ratoon	2nd Ratoon
(Amm. Nit.) N <sub>1</sub> 99 lb N	(Urea) N <sub>1</sub> 103 lb N N <sub>2</sub> 207 "	(L.A.N.) N <sub>1</sub> 80 lb N N <sub>2</sub> 180 "
(S. Phos.) P <sub>1</sub> 33.2 "	(S. Phos.) P <sub>1</sub> - P <sub>2</sub> 24.9 lb P	(S. Phos.) P <sub>1</sub> - P <sub>2</sub> 33.2 lb P
(M. of P.) K <sub>1</sub> 100 lb K K <sub>2</sub> 200 "	(M. of P.) K <sub>1</sub> 100 lb K K <sub>2</sub> 200 "	(M. of P.) K <sub>1</sub> 100 lb K K <sub>2</sub> 200 "

Treatment: 1b N/acre

Plant	1st Rat.	2nd Rat.
No Nil	N <sub>1</sub> 103	N <sub>1</sub> 80
N <sub>1</sub> 99	N <sub>2</sub> 207	N <sub>2</sub> 180

Results:

	Treatment	T.C.A.	Suc. %	T.S.A.
Plant	No	73.3	13.85	10.16
	N <sub>1</sub>	73.2	14.12	10.34
1st Ratoon	N <sub>1</sub>	50.3	14.30	7.20
	N <sub>2</sub>	47.1	13.50	6.36
2nd Ratoon	N <sub>1</sub>	45.3	12.83	5.83
	N <sub>2</sub>	39.9	12.13	4.83
3rd Ratoon	N <sub>1</sub>	23.0	13.35	3.09
	N <sub>2</sub>	21.1	12.31	2.59

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	pH	OM%	Clay%	ppm			
				P	K	Ca	Mg
P	5.7	.65	-	209	702	5721	50
1R	5.3	.78	-	21	74	5462	58
2R	5.4	.73	-	22	78	5261	68
3R	5.3	1.16	-	20	85	245	82
<u>Age:</u>	P	22 mths		Feb 60 - Dec 61			
	1R	18 "		Dec 61 - June 63			
	2R	12 "		June 63 - June 64			
	3R	15 "		June 64 - Oct 65			
<u>Rainfall:</u>	P	82.84"		1R 52.81", 2R 34.73"			
				3R 45.82"			

Object:

To compare two levels of K in a plant crop and three ratoons

Fertilizer:

Plant	1st Ratoon	2nd Ratoon
(Amm. Nit.) N1 99 lb N	(Urea) N1 103 lb N N2 207 "	(L.A.N.) N1 80 lb N N2 180 "
(S. Phos.) P1 33.2 " P	(S. Phos.) P1 - P2 24.9 " P	(S. Phos.) P1 - P2 33.2 " P
(M. of P.) K1 100 " K K2 200 "	(M. of P.) K1 100 " K K2 200 "	(M. of P.) K1 100 " K K2 200 "

Treatments:

Plant	1st Ratoon	2nd Ratoon
K1 100	K1 100	K1 100
K2 200	K2 200	K2 200

Results:

	Treatment	T.S.A.	Suc. %	T.S.A.
Plant	K1	72.1	13.69	9.87
	K2	74.5	14.27	10.63
1st Ratoon	K1	46.8	13.74	6.45
	K2	50.6	14.07	7.12
2nd Ratoon	K1	42.4	12.03	5.09
	K2	42.8	12.94	5.57
3rd Ratoon	K1	21.9	12.93	2.83
	K2	22.2	12.73	2.84