

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

2 X 2 X 2 NPK FACTORIAL

Catalogue No.: 20.
This crop: Plant, 1 Ratoon, 2 Ratoon.
Site: 100 Naidoo Frosterley
Altitude: 400'
Soil series: Dwyka
Design: 2 x 2 x 2 NPK 1 Rep.
Variety: N:Co.376.
Fertilizer: See below.
Water regime: Dryland.

Soil Analysis:

	pH	OM%	Clay %	p.p.m.			
				P	K	Ca	Mg
P	5.76	2.15	-	22	70	5601	1537
1R	5.82	2.48	-	19	70	5454	1204
2R	5.71	3.25	-	10	96	5155	304

Age: P = 28 mths. March 60 - July 62.
 1R = 18 mths. July 62 - Dec. 63.
 2R = 18 mths. Dec. 63 - May 65.

Rainfall: P = 89.07"
 1R = 59.83"
 2R = 53.01"

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

Fertilizer:

Plant		1st Ratoon		2nd Ratoon	
Urea	N ₁ 103 lbs. N	Urea	N ₁ 133 lbs. N	LAN	N ₁ 100 lb. N
Super P.	P ₁ 33 " P		N ₂ 207 " N		N ₂ 200 " N
Mur. of Pot.	K ₁ 100 " K	Super P.	P ₁ -	Super P.	P ₁ 41.5 " P
	K ₂ 200 " K		P ₂ 330 " P		P ₂ 33 " P
		Mur. of Pot.	K ₁ 100 " K	Mur. of Pot.	K ₁ 50 " K
			K ₂ 200 " K		K ₂ 100 " K

Treatments:

lb. K/acre.

Plant	1st Ratoon	2nd Ratoon
K ₁ 100	K ₁ 100	K ₁ 50
K ₂ 200	K ₂ 200	K ₂ 100

Results:

	Treatment	T.C.A.	% Suc.	T.S.A.
Plant	K ₁	60.6	15.18	9.20
	K ₂	59.9	15.33	9.18
1 Ratoon	K ₁	36.9	15.06	5.56
	K ₂	39.9	15.00	5.99
2 Ratoon	K ₁	26.5	15.15	4.02
	K ₂	29.7	14.45	4.29

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Mur. of Pot.	K ₁ 100 " K	Super P.	P ₁ -	Super P.	P ₁ 41.5 " P
	K ₂ 200 " K		P ₂ 330 " P		P ₂ 33 " P
		Mur. of Pot.	K ₁ 100 " K	Mur. of Pot.	K ₁ 50 " K
			K ₂ 200 " K		K ₂ 100 " K

lb. N/acre

Treatments:

Plant	1st Ratoon	2nd Ratoon
N ₀ Nil	N ₁ 133	N ₁ 100
N ₁ 103	N ₂ 207	N ₂ 200

Results:

	Treatment	T.C.A.	% Suc.	T.S.A.
Plant	N ₀	51.1	15.19	7.76
	N ₁	69.4	15.33	10.64
1st Ratoon	N ₁	35.4	14.87	5.26
	N ₂	41.4	15.19	6.29
2nd Ratoon	N ₀	27.3	14.81	4.04
	N ₁	28.9	14.79	4.27