

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

3 x 3 x 3 NPK TRIAL

Catalogue No: 16 (First cycle)
 This crop: P, 1R, 2R
 Site: Basket, Sputu
 Altitude: 400'
 Soil series: Cartref
 Design: 3 x 3 x 3 NPK 1 rep.
 Variety: N:Co.339
 Fertilizer: See below
 Water regime: Dryland.

Soil Analysis: No samples taken
 Age: P 22 mths Nov. 52 - Nov 54
 1R 21 " Nov. 54 - Aug. 56
 2R 22 " Aug. 56 - May 58 ✓
 Rainfall:
 P - 68.6"
 1R - 64.80"
 2R - 84.04"

Object:

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

Fertilizer: lbs/ac

Amm. Sulp. No	Nil	Super Phos. Po	Nil	M. of Potash	Ko	Nil
	N1 95		P1 43.5		K1	83
	N2 190		P2 87.1		K2	167

Treatments: Ko : Nil K1 : 83 K2 : 167

Results:

	Treatment	T.C.A.	Suc. %	T.S.A.
Plant	Ko	59.91	17.01	10.13
	K1	59.01	10.79	9.90
	K2	56.45	16.81	9.46
1st Ratoon	Ko	51.36	17.73	9.09
	K1	53.06	17.40	9.20
	K2	46.45	17.66	8.20
2nd Ratoon	Ko	46.24	15.29	7.01
	K1	49.46	15.05	7.44
	K2	47.23	15.42	7.26

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Rainfall: P 68.6", 1R 64.80"
 2R 84.04"

Object:

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

Fertilizer: lbs/ac

Amm. Sulp.	No Nil	Super Phos.	Po Nil	M. of Potash	Ko Nil
	N1 95		P1 43.5		K1 83
	N2 190		P2 87.1		K2 167

Treatments: lb. N/acre No : Nil N1 : 95 N2 : 190

Results:

	Treatment	T.C.A.	Suc. %	T.S.A.
Plant	No	50.56	17.30	8.73
	N1	62.34	16.89	10.50
	N2	62.47	16.42	10.28
1st Ratoon	No	43.85	17.57	7.68
	N1	51.18	17.75	9.06
	N2	55.84	17.46	9.75
2nd Ratoon	No	39.98	15.23	6.02
	N1	49.68	15.38	7.58
	N2	53.27	15.15	8.06

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AGRONOMISTS' ASSOCIATION

3 x 3 x 3 NPK FACTORIAL

Catalogue No: 16 Second cycle
 This crop: P, 1R, 2R, 3R, 4R
 Site: Basket, Sputu
 Altitude: 400'
 Soil series: Cartref
 Design: 3 x 3 x 3 NPK 1 rep.
 Variety: N:Co.339
 Fertilizer: See below
 Water regime: Dryland

Soil Analysis:

	pH	OM%	Clay%	ppm			
				P	K	Ca	Mg
P	5.04	.67	-	22	52	7810	-
1R	5.21	1.01	-	23	37	1180	-
2R	4.47	.59	-	13	58	928	260
3R	5.25	-	-	9	40	4271	73
4R	5.89	1.36	-	27	55	2567	76

Age: P=21 mths. Sept 58 - July 60✓
 1R 24 mths. July 60 - June 62✓
 2R 17 mths. June 62 - Nov. 63✓
 3R 19 mths. Nov. 63 - June 65✓
 4R 12 mths. June 65 - June 66✓

Rainfall: P=55.06", 1R=57.07"
 2R=50.35" 3R=51.25"
 4R=30.23"

Object:

To compare three levels of N in a plant crop and four ratoons (second cycle).

Fertilizer:

	No	N1	N2	Super Phos.		M. of Potash			
				Po	P1	P2	Ko	K1	K2
P Amm. Nit.	-	148	297	-	41.5	83	-	125	250
1R Urea	-	207	414	-	41.5	83	-	125	250
2R Urea	-	207	414	-	41.5	83	-	125	250
3R L.A.N.	-	100	200	-	33.2	66	-	50	100
4R Urea	-	78	156	-	8.3	16	-	50	100

Treatments: 1b N/acre

	Plant	1 Rat.	2 Rat.	3 Rat.	4 Rat
No	Nil	Nil	Nil	Nil	Nil
N1	148	207	207	100	78
N2	297	414	414	200	156

Results:

	Treatments	T.C.A.	Suc.%	T.S.A.
Plant	NO	38.0	14.05	5.35
	N1	45.1	14.10	6.36
	N2	44.9	14.11	6.33
1st Ratoon	No	33.9	14.44	4.89
	N1	42.5	14.46	6.14
	N2	46.4	14.55	6.75
2nd Ratoon	No	19.9	14.27	2.84
	N1	36.4	13.71	4.98
	N2	35.6	14.16	5.04
3rd Ratoon	No	20.8	15.18	3.15
	N1	27.6	15.16	4.19
	N2	29.3	14.96	4.37
4th Ratoon	No	13.3	12.62	1.68
	N1	20.7	12.73	2.63
	N2	18.4	12.81	2.34

SOUTH AFRICAN SUGAR INDUSTRY

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3 x 3 x 3 NPK FACTORIAL

Catalogue No: 16 (Second Cycle)
 This crop: P, 1R, 2R, 3R, 4R
 Site: Basket, Sputu
 Altitude: 400'
 Soil series: Cartref
 Design: 3 x 3 x 3 NPK 1 rep.
 Variety: N:Co.339
 Fertilizer: See below
 Water regime: Dryland

Soil Analysis:

	pH	OM%	Clay%	ppm			
				P	K	Ca	Mg
P	5.04	.67	-	22	52	7810	-
1R	5.21	1.01	-	23	37	1180	-
2R	4.47	.59	-	13	58	928	260
3R	5.25	-	-	9	40	4271	73
4R	5.89	1.36	-	27	55	2567	76
Age:	P 21 mths. Sept 58 - July 60						
	1R 24 " July 60 - June 62						
	2R 17 " June 62 - Nov. 63						
	3R 19 " Nov 63 - June 65						
	4R 12 " June 65 - June 66						
Rainfall:	P 55.06"		1R 57.07"				
	2R 50.35"		3R 51.25"				
	4R 30.23"						

Object:

To compare three levels of K in a plant crop and four ratoons (second cycle).

Fertilizer:

	No	N1	N2	Super Phos:			M. of Potash		
				Po	P1	P2	Ko	K1	K2
P Amm. Nit.	-	148	297	-	41.5	83	-	125	250
1R Urea	-	207	414	-	41.5	83	-	125	250
2R Urea	-	207	414	-	41.5	83	-	125	250
3R L.A.N.	-	100	200	-	33.2	66	-	50	100
4R Urea	-	78	156	-	8.3	16	-	50	100

Treatments:

	Plant.	1R.	2R.	3R.	4R.
Ko	Nil	Nil	Nil	Nil	Nil
K1	125	125	125	50	50
K2	250	250	250	100	100

Results:

	Treatment	T.C.A.	Suc. %	T.S.A.
Plant	Ko	44.1	14.10	6.22
	K1	45.6	14.13	6.43
	K2	38.3	14.06	5.38
1st Ratoon	Ko	40.1	14.45	5.79
	K1	44.2	14.52	6.43
	K2	38.5	14.48	5.56
2nd Ratoon	Ko	31.7	13.99	4.43
	K1	33.5	13.98	4.68
	K2	26.6	14.17	3.76
3rd Ratoon	Ko	26.4	14.99	3.96
	K1	27.6	15.21	4.19
	K2	23.6	13.04	3.55
4th Ratoon	Ko	17.1	12.71	2.16
	K1	20.3	12.64	2.57
	K3	15.0	12.81	1.93