

SOUTH AFRICAN SUGAR INDUSTRY

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AGRONOMISTS' ASSOCIATION

N.P.K. FACTORIAL EXPERIMENT

Catalogue No: 161  
 This crop: Plant, 1R, 2R  
 Site: K. Eggers, Wartburg.  
 Altitude: + 2,500 ft.  
 Soil series: T.M.S.  
 Design: 4 x 2 x 3  
 Variety: Co.331  
 Fertilizer:  
 Water regime: Dryland

Soil Analysis:

pH	OM%	Clay%	ppm			
			P	K	Ca	Mg
4.91	2.76		114	550	-	-
Age: P : 24½ months						
1R : 24 months						
2R : 25 months						
Rainfall: Not recorded						
Irrigation: -						

Object:

To test responses to different levels of N.P.K.

Treatments:

Plant crop: N1 = 60 lbs. P1 = 0 lbs. K1 = 0 lbs.  
 N2 = 120 " P2 = 200 lbs. K2 = 100 lbs.  
 N3 = 180 lbs. K3 = 200 lbs.  
 N4 = 240 lbs. N.B.: 60 lbs. of N and all P<sub>2</sub>O<sub>5</sub> in furrow.

Balance of fertilizer as top-dressing:

<u>1st Top-dressing</u>		<u>2nd Top-dressing</u>
N1	Nil	Nil
N2	60 lbs/ac.	"
N3	" " "	60 lbs/ac.
N4	120 " "	60 " "
P1	Nil	Nil
P2	"	"
K0	"	"
K1	100 lbs/ac. K <sub>2</sub> O	"
K2	200 lbs/ac. "	"

Ratoons: N1 = 100 lbs. N. P1 = Nil K1 = Nil  
 N2 = 200 " " P2 = 200 lbs P<sub>2</sub>O<sub>5</sub> K2 = 150 lbs. K<sub>2</sub>O  
 N3 = 300 " " K3 = 300 lbs. "

Results:

		T.C.A.	Suc. %	T.S.A.	Purity	Fibre %
Plant	K1	67.93	12.99	8.83	84.2	11.99
	K2	69.52	13.28	9.24	85.2	11.42
	K3	70.80	13.13	9.25	85.0	11.69
	Mean	69.42	13.13	9.11	8.48	11.70
1st Ratoon	K1	53.92	13.57	7.18	87.2	13.08
	K2	51.82	14.03	7.27	88.8	12.24
	K3	52.64	13.70	7.21	88.3	13.14
	Mean	52.79	13.77	7.22	88.1	12.82
2nd Ratoon	K1	38.80	12.23	4.745	75.65	13.62
	K2	38.80	12.62	4.897	79.73	14.00
	K3	38.52	12.44	4.792	78.33	14.39
	Mean	38.71	12.43	48.11	77.90	14.00

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N.P.K. FACTORIAL EXPERIMENT

Catalogue No.: 161  
 This Crop: Plant, 1R, 2R.  
 Site: K. Eggers, Wartburg.  
 Altitude: - 2500 ft.  
 Soil Series: T.M.S.  
 Design: 4 x 2 x 3  
 Variety: Co.331  
 Fertilizer:  
 Water regime: Dryland.

Soil Analysis:

		p.p.m.			
pH	OM%	Clay %	P	K	Ca Mg
4.91	2.76		114	550	
Age:	P :	24½ months	(10/56 - 10/58)		
	1R :	24 months	(10/58 - 10/60)		
	2R :	25 months	(10/60 - 11/62)		
<u>Rainfall:</u> Not recorded					
<u>Irrigation:</u> -					

Object: To test responses to different levels of N.P.K.

Treatments:

Plant crop N1 = 60 lbs.      P1 = 0 lbs.      K1 = 0 lbs.  
 N2 = 120 lbs.      P2 = 200 lbs.      K2 = 100 lbs.  
 N3 = 180 lbs.                           K3 = 200 lbs.  
 N4 = 240 lbs.      N.B.: 60 lbs. of N and all P<sub>2</sub>O<sub>5</sub> in furrow.

Balance of fertilizer as top-dressing:

<u>1st Top Dressing</u>		<u>2nd Top-Dressing</u>
N1	Nil	Nil
N2	60 lbs/ac.	"
N3	" " "	60 lbs/ac.
N4	120 " "	60 " "
P1	Nil	Nil
P2	Nil	"
K0	Nil	"
K1	100 lbs/ac K <sub>2</sub> O	"
K2	200 lbs/ac K <sub>2</sub> O <sub>2</sub>	"

Ratoons: N1 = 100 lbs. N.      P1 = Nil      K1 = Nil  
 N2 = 200 " "      P2 = 200 lbs P<sub>2</sub>O<sub>5</sub>      K2 = 150 lbs. K<sub>2</sub>O  
 N3 = 300 " "                           K3 = 300 " "  
 N4 = 400 " "

Results:

Nitrogen: Plant

	T.C.A.	Suc. %	T.S.A.	Purity	Fibre %
N1	70.18	12.16	8.49	82.9	11.38
N2	69.37	13.54	9.39	85.7	11.61
N3	69.64	13.40	9.34	85.4	12.55
N4	68.48	13.43	9.20	85.1	11.61
Mean	69.42	13.13	9.11	84.8	11.79