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SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

TIMING OF NITROGEN TRIAL

Catalogue No.: 45
This Crop: Plant (6/7/67 =
Harvest Date)
Site: Eden Plot F23 South
Section. Illovo
Altitude: ± 500 ft.
Soil Type: Grey sand (Fernwood)
Design: Randomised Block
Variety: 382
Fertilizer: See Treatments for
N & P
All plots received
300 lbs. of
Muriate, 2 months
after planting.

Soil Analysis:
Age: 15 months
Rainfall: 42.89 inches
Water Regime: Dryland.

Object: To establish the advantages, if any, of nitrogen applied in the furrow at planting especially in a late planting on sand, and to investigate the potential of splitting nitrogen top-dressing on such late plantings especially under prevailing soil conditions.

- Treatments:
1. Saaifos (800 lbs) in furrow and 1 application of 200 lbs. Urea 2 months after Planting.
 2. Saaifos (800 lbs) in furrow and 2 applications of Urea (a) 100 lbs. 2 months after planting and (b) 100 lbs. in spring (± September).
 3. Supers (800 lbs) + 250 Urea as in (1) above.
 4. Supers (800 lbs) + 150 Urea 2 months after planting and 100 lbs. Urea in Spring (± September).
 5. Filter Press (10 tons in furrow) + Urea as in (3) above.
 6. Filter Press (10 tons in furrow) + Urea as in (4) above.
 7. Filter Press (10 tons in furrow) + L.A.N. (100 lbs) in furrow + Urea top-dressing as in (1) above.
 8. Filter Press (10 tons in furrow) + 100 lbs. L.A.N. in furrow + Urea top-dressing as in (2) above.

Results:

Treatment No.
F.C.A.
Sucrose %
Purity %

6 58.89 7.79 72.94	7 76.28 7.94 70.39	8 67.68 9.67 77.90	3 60.47 9.79 77.45	4 53.95 8.84 70.66
4 56.81 7.22 70.96	2 66.70 7.97 72.43	1 64.92 7.65 70.47	4 64.42 8.65 73.86	2 59.68 5.86 57.73
7 50.29 8.05 72.27	1 66.70 7.50 69.68	7 65.51 9.55 76.03	2 50.79 8.41 70.47	3 58.10 9.05 73.57
5 51.97 8.15 73.76	4 73.22 7.48 69.08	4 63.04 8.69 74.26	5 53.36 9.68 77.30	8 48.61 10.75 80.62
2 51.38 7.89 70.44	3 56.91 8.70 75.05	5 64.32 8.87 75.34	6 56.91 8.96 74.11	5* 66.40 8.98 73.11
*8 52.57 9.01 75.54	8 62.94 9.70 77.43	*3 64.72 8.39 74.02	6 56.71 7.86 72.44	6* 50.00 9.14 73.06
1 57.90 8.70 74.81	*5 53.45 8.70 75.05	6 57.11 9.69 77.62	7 52.86 9.82 76.80	7 57.90 8.97 74.52
3 51.58 9.39 78.74	*6 46.73 9.99 78.15	2 53.85 9.16 75.53	1 58.40 9.16 75.89	1 70.25 9.99 78.02

Table of Means:

Treat No.	T.C.A.	Sucrose %	Purity %	T.S.A.	Lbs SAM	Rating
1	63.63	8.60	73.77	5.47	729	*2
2	56.48	7.86	69.32	4.43	591	8
3	58.30	9.06	75.77	5.29	704	4
4	62.29	8.18	71.76	5.09	679	6
5	57.90	8.88	74.91	5.14	685	5
6	53.89	8.89	74.84	4.79	638	7
7	60.57	8.87	74.80	5.37	716	3
8	57.74	9.62	77.12	5.55	740	1

* Plots marked with an asterisk have a large proportion of round boulders present.

Notes: Due to large variations between plots of the same treatment there appears to be no significant trend in the results except that the presence of N in the furrow might have been beneficial and that there appears to be no need to split Nitrogen top-dressings under the conditions prevailing for the experiment.

In view of the above it might be suggested that the most important aspect of the experiment is that a plant crop of N:Co.382 on grey sand produced between 50 and 60 T.C.A. in 15 months, dryland. This could be due to various factors.

1. The season through which it grew was a relatively good one especially as the area received good rains within a week of planting.
2. The area planted had been fallow for some years.
3. However, it is suggested that a very significant factor influencing the crop was the complete lack of weeds. The experiment was weeded approximately once **every** 3 - 4 weeks for the first 6 months after germination and then once again at the age of \pm 10 months. When the experiment was harvested the complete lack of any weeds under the crop canopy was very obvious.

It is disappointing to note the poor sucrose figures for the crop although this is understandable when the variety and its age are considered. The sucrose position would probably have been considerably improved had the harvesting of the experiment been delayed until September or October.

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SPLIT NITROGEN APPLICATIONS

Catalogue No : 45	Soil Analysis : None recorded
This crop : 1st Ratoon	Age : 15 months
Site : Eden Plot	Harvested : 1. 11. 68
Altitude : + 500 ft	Rainfall : 52.27"
Soil Type : Grey sand (Fernwood)	
Design : Randomised Block	
Varieties : 382	
Fertilizer : See treatments	
Water regime : Dry land	

OBJECT : To test the advantages, if any, of split applications of nitrogen fertilizer on sandy soil as top-dressing after planting with supers or Maila or Saaifos.

- TREATMENTS:
1. Saaifos (800 lb/acre) in furrow at planting. 1st Ratoon topdressed with 300 Urea and 300 Muriate 6 weeks after harvest.
 2. Saaifos (800 lb/acre) in furrow at planting. 1st Ratoon topdressed with 150 lb Urea and 300 Muriate 6 weeks after harvest and topdressed again with 150 lb Urea 3 weeks later.
 3. Supers (800 lb/acre) in furrow at planting. 1st Ratoon top dressing as in (1) above.
 4. Supers at planting as above. 1st Ratoon topdressing as in (2) above.
 5. Maila (10 tons in Furrow at Planting) 1st Ratoon topdressing as in (1) above.
 6. Maila as above and 1st Ratoon topdressing as (2) above.
 7. Maila as above plus 100 lb L.A.N. in furrow for planting. 1st Ratoon topdressing as in (1) above.
 8. Maila and L.A.N. as above for planting. 1st Ratoon topdressing as in (2) above

The furrow fertilization at planting is supplied as additional information when assessing the results of the 1st Ratoon crop.

GERMINATION TRIAL (CONTD.)

(4)

Varieties	Aretan in lbs.			
	0	$\frac{1}{4}$ lb.	$\frac{1}{2}$ lb.	1 lb.
N:Co.376	71	76	69	60
N:Co.382	51	50	54	52

(5)

Varieties	Dioldrex in Pints.			
	0	$\frac{1}{4}$ pt.	$\frac{1}{2}$ pt.	1 pt.
N:Co.376	81	62	83	61
N:Co.382	56	51	51	55

RESULTS:

Treat No.	6	7	8	3	4	
T.C.A.	64.52	90.11	77.86	71.14	68.18	
Suc.%	11.19	12.02	12.21	13.06	11.03	
Pur.%	86.24	90.17	89.17	90.61	91.63	
T.S.A.	7.21	10.83	9.51	9.29	7.52	
Treat No.	4	2	1	4	2	
T.C.A.	68.18	74.11	56.91	70.35	67.68	
Suc.%	11.12	10.82	12.37	10.68	9.88	
Pur.%	85.68	85.30	90.80	84.27	81.77	
T.S.A.	7.58	8.02	7.04	7.51	6.69	
Treat No.	7	1	7	2	3	
T.C.A.	59.68	62.15	57.70	54.94	57.80	
Suc.%	12.03	12.57	12.83	10.70	10.68	
Pur.%	88.32	90.84	90.88	83.91	84.46	
T.S.A.	7.18	7.81	7.40	5.88	6.17	
Treat No.	5	4	4	5	8	
T.C.A.	54.74	77.26	82.01	64.62	39.33	
Suc.%	12.94	11.91	11.66	10.39	10.27	
Pur.%	91.13	88.35	87.42	91.62	83.05	
T.S.A.	7.08	9.20	9.56	6.71	4.04	
Treat No.	2	3	5	8	5	
T.C.A.	50.39	52.96	60.67	62.64	66.30	
Suc.%	12.43	12.11	12.25	10.56	11.28	
Pur.%	88.88	89.43	90.38	83.25	86.23	
T.S.A.	6.26	6.41	7.43	6.61	7.48	
Treat No.	8	8	3	6	6	
T.C.A.	39.52	55.53	65.12	48.32	51.47	
Suc.%	12.22	12.03	11.22	11.24	11.72	
Pur.%	90.71	88.32	86.51	85.68	91.40	
T.S.A.	4.83	6.68	7.31	5.43	6.03	
Treat No.	1	5	6	7	7	
T.C.A.	63.43	45.94	56.52	46.93	52.07	
Suc.%	12.03	11.90	12.17	11.90	11.94	
Pur.%	89.74	86.86	91.25	88.72	88.15	
T.S.A.	7.63	5.47	6.88	5.58	6.23	
Treat No.	3	5	2	1	1	
T.C.A.	49.40	49.40	51.18	55.43	64.42	
Suc.%	12.13	11.35	11.93	12.51	11.75	
Pur.%	90.98	86.50	88.99	89.77	86.59	
T.S.A.	5.99	5.61	6.11	6.93	7.57	
Table of Means	T.C.A.	Suc.%	T.S.A.	Pur.%	Rating	
1	60.47	12.25	7.41	89.55	3	
2	59.66	11.15	6.65	85.77	6	
3	59.28	11.84	7.02	88.40	4	
4	73.20	11.28	8.26	87.51	1	
5	58.40	11.75	6.86	89.24	5	
6	54.05	11.53	6.23	88.21	8	
7	61.30	12.14	7.44	89.25	2	
8	54.98	11.46	6.30	86.90	7	
	60.17	11.67	7.02	88.10		