

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

UREA X AMMONIUM SULPHATE TRIAL

Catalogue No.: 22
 This crop: P 1R 2R
 Site: Hemsworth - Mwawine
 Altitude: 300'
 Soil series: Clansthal
 Design: Random Block
 Variety: N:Co.376
 Fertilizer: N P K
 P see - 100
 1R treat- 400 250
 2R ments - 200

Soil Analysis:

| | pH | OM% | Clay% |
|----|------|------|-------|
| P | 6.15 | 0.51 | - |
| 1R | 5.53 | 0.99 | - |
| 2R | 5.64 | 1.22 | - |

| p.p.m. | | | | |
|--------|----|----|------|-----|
| | P | K | Ca | Mg |
| P | 56 | 43 | - | 195 |
| 1R | 27 | 43 | 1650 | 301 |
| 2R | 92 | 52 | 318 | 76 |

Age: P 20 months Oct. 1960 - June 1962
 1R 19 months June 1962 - Jan. 1964
 2R 16 months Jan. 1964 - May 1965

Water regime: Dryland

Rainfall: P 70.00"
 1R 56.25"
 2R 41.11"

Object: To compare urea and ammonium sulphate, each at two levels, with a control without nitrogen.

Treatments:

| | P | 1R | 2R |
|---------|---------------------|-------------------|-------------------|
| Control | - No nitrogen | No nitrogen | No nitrogen |
| Urea | - 100 lb.N per acre | 100 lb.N per acre | 100 lb.N per acre |
| Urea | - 200 lb.N per acre | 200 lb.N per acre | 200 lb.N per acre |
| S/A | - 80 lb.N per acre | 100 lb.N per acre | 100 lb.N per acre |
| S/A | - 160 lb.N per acre | 200 lb.N per acre | 200 lb.N per acre |

Results:

Tons cane per acre

| | Plant | | | | 1st Ratoon | | | | 2nd Ratoon | | | |
|------|--------|----------|----------|------|------------|----------|----------|------|------------|----------|----------|------|
| | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean |
| S/A | - | 59.4 | 56.2 | 57.8 | - | 59.4 | 58.5 | 59.0 | - | 43.8 | 43.6 | 43.7 |
| Urea | - | 58.0 | 57.1 | 57.6 | - | 53.8 | 55.9 | 54.9 | - | 35.7 | 37.0 | 36.4 |
| Mean | 54.6 | 58.7 | 57.7 | - | 48.3 | 56.6 | 57.2 | - | 35.6 | 39.8 | 40.3 | - |

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Sucrose % cane

| | Plant | | | | 1st Ratoon | | | | 2nd Ratoon | | | |
|------|-----------|-------------|-------------|------|------------|-------------|-------------|------|------------|-------------|-------------|------|
| | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean |
| S/A | - | 13.9 | 13.9 | 13.9 | - | 14.5 | 14.3 | 14.4 | - | 12.8 | 11.9 | 12.4 |
| Urea | - | 14.3 | 14.2 | 14.3 | - | 14.7 | 14.5 | 14.6 | - | 13.9 | 13.1 | 13.5 |
| Mean | 13.9 | 14.1 | 14.1 | - | 14.0 | 14.6 | 14.4 | - | 13.0 | 13.4 | 12.5 | - |

Tons sucrose per acre

| | Plant | | | | 1st Ratoon | | | | 2nd Ratoon | | | |
|------|-----------|-------------|-------------|------|------------|-------------|-------------|------|------------|-------------|-------------|------|
| | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean | 0 lb.N | 100 lb.N | 200 lb.N | Mean |
| S/A | - | 8.28 | 8.07 | 8.18 | - | 8.64 | 8.36 | 8.50 | - | 5.62 | 5.19 | 5.41 |
| Urea | - | 8.06 | 8.09 | 8.08 | - | 7.92 | 8.09 | 8.00 | - | 4.94 | 4.85 | 4.90 |
| Mean | 7.59 | 8.17 | 8.08 | - | 6.78 | 8.28 | 8.23 | - | 4.61 | 5.28 | 5.02 | - |

Note: In plant stage, S/A treatments received only 80 and 160 lb. N instead of 100 and 200 lb. N/acre.