

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code : A/Deterioration/84

Cat. No.: 1422

TITLE: Cane deterioration using Formula 'Rite'1. OBJECTIVE:

To determine whether Formulation 'Rite' reduces the rate of quality deterioration and desiccation of harvested green cane.

2. PARTICULARS OF PROJECT:

Site : Experiment Station Mount Edgecombe
 Region : North Coast Coastal
 Commencing date : 23/3/84
 Termination date : 4/4/84
 Crop : 3rd ratoon
 Variety : NCo 376
 Formula Rite : A product supplied by Mr J Nightingale of Amatikulu through Mr D Hall of Chemrite.

3. TREATMENTS:

- Control untreated
- Stalk base ends (butts) dipped in Formula Rite
- Whole stalks dipped in Formula Rite

Notes on Treatments

Forty eight uniform bundles, each of 12 stalks of well trashed green cane were selected on 23/3/84 the day the cane was harvested. Each bundle was numbered and weighed. Formulation Rite was then applied to treatments two and three. The bundles were left in small stacks in the open.

On each of the four sampling dates four bundles (4 replications) were taken from each of the 3 piles of treated cane. The bundles were weighed and then milled for analysis.

APPLICATION OF FORMULA RITE

Stalk ends: the base ends of the relevant bundles of cane were dipped for a few seconds to a depth of about 100 mm in Formula Rite on the day the cane was harvested.

Whole stalk: the whole stalk was completely emersed for a few seconds in Formula Rite on the same day.

PROCEDURE FOR DETERMINING TREATMENT EFFECTS

All bundles were weighed on day 0 and twelve bundles were analysed on that day. Thereafter four bundles each of control, base ends treated and whole stalk treated were analysed as shown below.

Day	0	23/4/84
Day	4	27/3/84
Day	7	30/3/84
Day	12	4/4/84

RESULTS

Treatment mean	Stalk mass as % of Day 0	Mass of sucrose % 100 gm of stalk	Mass of ers per 100 gm of stalk	Sucrose % cane	Purity
Day 0	100,0	10,44	8,84	10,44	85,3
Day 4 Control	95,2	10,21	8,63	10,74	84,7
Stalk butts	95,4	10,50	9,01	11,01	86,3
Whole stalk	96,0	10,91	9,45	11,36	87,4
Day 7 Control	94,3	9,90	8,20	10,49	83,4
Stalk butts	94,5	10,14	8,45	10,72	83,5
Whole stalk	94,6	10,13	8,52	10,71	84,5
Day 12 Control	91,6	9,25	7,32	10,10	78,1
Stalk butts	90,8	9,18	7,26	10,11	78,1
Whole stalk	91,3	10,03	8,39	10,98	83,0
C.V. %	0,6	4,8	6,5	4,6	2,1
S.E. Treatment	0,297	0,242	0,275	0,246	0,895
LSD 0,05	0,856	0,697	0,792	0,706	2,574
0,01	1,149	0,935	1,063	0,948	3,454

COMMENTS ON RESULTS:

Formula Rite had no effect on the rate of stalk desiccation. There was a marked difference in stalk mass between days, but there was no difference between treatments.

Formula Rite was moderately effective in reducing the rate of quality deterioration only where stalks were completely emersed. This is illustrated in the graphs of sucrose mass and purity.

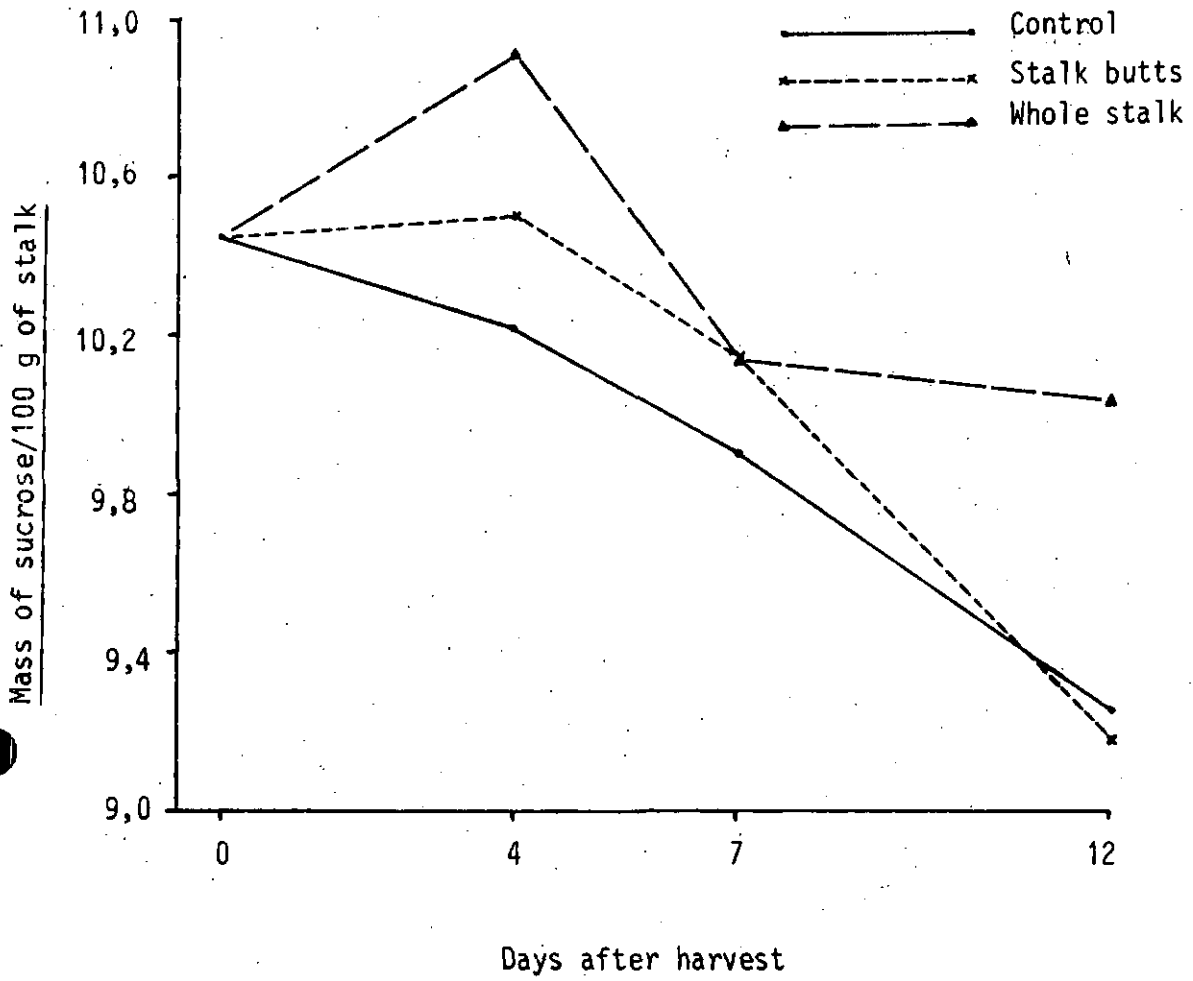
Cane quality as sucrose % cane declined in the untreated cane at a constant rate of 0,1 units per day or 1% per day.

Formula Rite is a modified formulation of Formula Go. Results obtained to date with Formula Go have been conflicting and this is probably due to the changes in the formulation.

The results obtained in this experiment from emersing whole stalks in Formula Rite are promising. However, the practicability of the treatment is very dubious.

MFAL/IS
17 May 1984

Mass of sucrose per 100 g of stalk



Purity

