

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: BT14/80/R2

Proj. No.: 2351

Cat. No.: 1149

Title: Trashing versus burning and raking or leaving burnt tops scattered.

1. Particulars of the project

<u>This crop</u>	: 2nd ratoon	<u>Soil analysis:</u>	Date: 30/5/80				
<u>Site</u>	: Crookes Bros. Est. Renishaw(Isonti)	<u>pH</u>	<u>O.M.%</u>	<u>Clay %</u>	<u>P.D.I.</u>		
<u>Region</u>	: Coastal Hinterland	5,41	2,01	23	-		
<u>Soil system</u>	: Umzinto-coast lowlands						
<u>Soil form/series</u>	: Swartland/Rosehill	<u>P</u>	<u>K</u>	<u>Ca</u>	<u>Mg</u>	<u>Zn</u>	<u>Al</u>
<u>Design</u>	: Randomised block	13	96	556	209	3,6	3
<u>Variety</u>	: x 6 replications						
<u>Variety</u>	: NCo 376	<u>Age:</u>	15,6m	<u>Dates:</u>	21/5/80-8/9/81		
<u>Fertilizer/</u>	<u>N</u>	<u>P</u>	<u>K</u>	<u>Rainfall:</u>	1 128 mm	<u>L.T.M.:</u>	1 167 mm
<u>Ameliorants</u>	: 133	27	133	<u>Irrigation:</u>	Nil	(Renishaw)	
	(Split application)			<u>Altitude:</u>	140 m		

- 2) OBJECTIVES: To evaluate the effects of a trash blanket compared with burning and raking off the tops or leaving the burnt tops scattered.
- 3) TREATMENT: T - Trash blanket  
Bt - Burnt and tops left scattered  
BTO - Burnt and tops raked off

Notes on treatments:

- 1) The cane in the 'burnt' plots was cut green and the trash burnt on the ground, nine days later.
- 2) Very few burnt tops were left after burning because cane was very dry.
- 3) The average slope at the site is 25% and soil depth is about 760 mm.

YIELD AND CROP CHARACTERISTICS AT HARVEST

1109 5/11

Treatments	t/ha cane	Suc % cane	t/ha sucrose	ERS % cane	Stalk counts x 10 <sup>-3</sup> /ha	Stalk length (cm)
T - Trash blanket	91	14,0	12,7	12,5	107	215
Bto - Burnt tops raked off	97	13,7	13,3	12,2	123	217
Bt - Burnt tops scattered	95	13,9	13,2	12,5	119	211
MEAN	94	13,9	13,1	12,4	117	215
C.V. %	9,3	3,3	9,8	4,0	4,4	8,2
S.E. of treatment means	3,59	0,18	0,52	0,20	2,07	7,2
L.S.D. (0,05)	11,31	0,59	1,64	0,64	6,52	22,71

COMMENTS ON RESULTS

- 1) Although the rainfall was 96% of LTM, the crop started in winter with below average rainfall for the first four months. The mean yield of 8,3 tc/ha/100 mm and 6,02 tc/ha/m is above average.
- 2) There is a slight reduction in cane yield (N.S.) due to the trash blanket which is reflected in a markedly reduced stalk population in the early crop stages (see Fig. 2).

Stalk population differences decreased as the crop matured but persisted through to harvest at levels which are statistically significant. (P = 0,05).

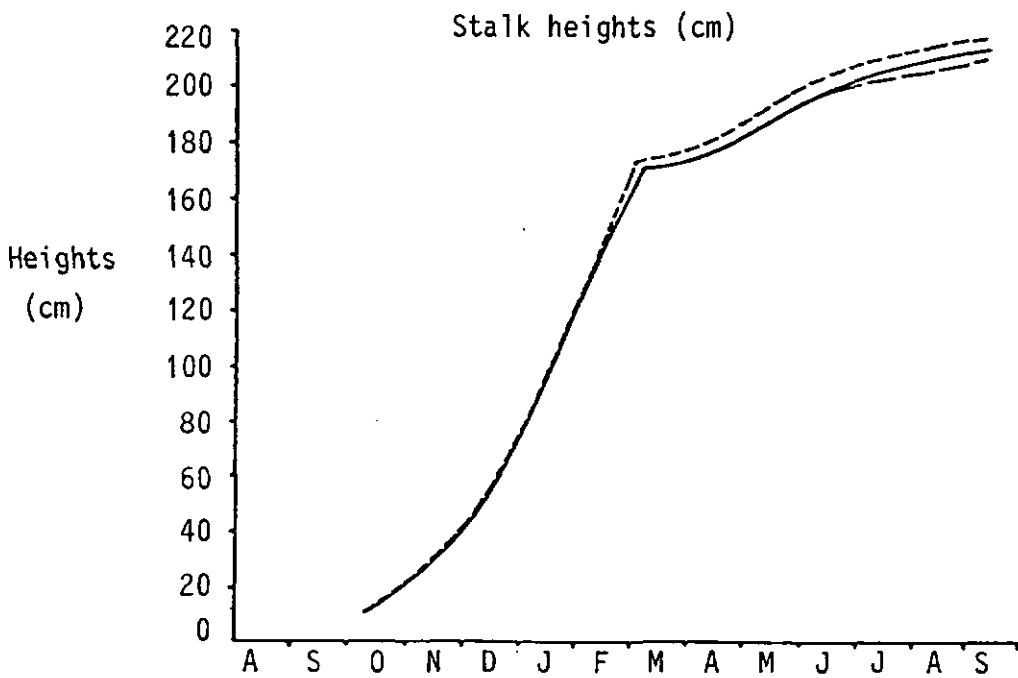
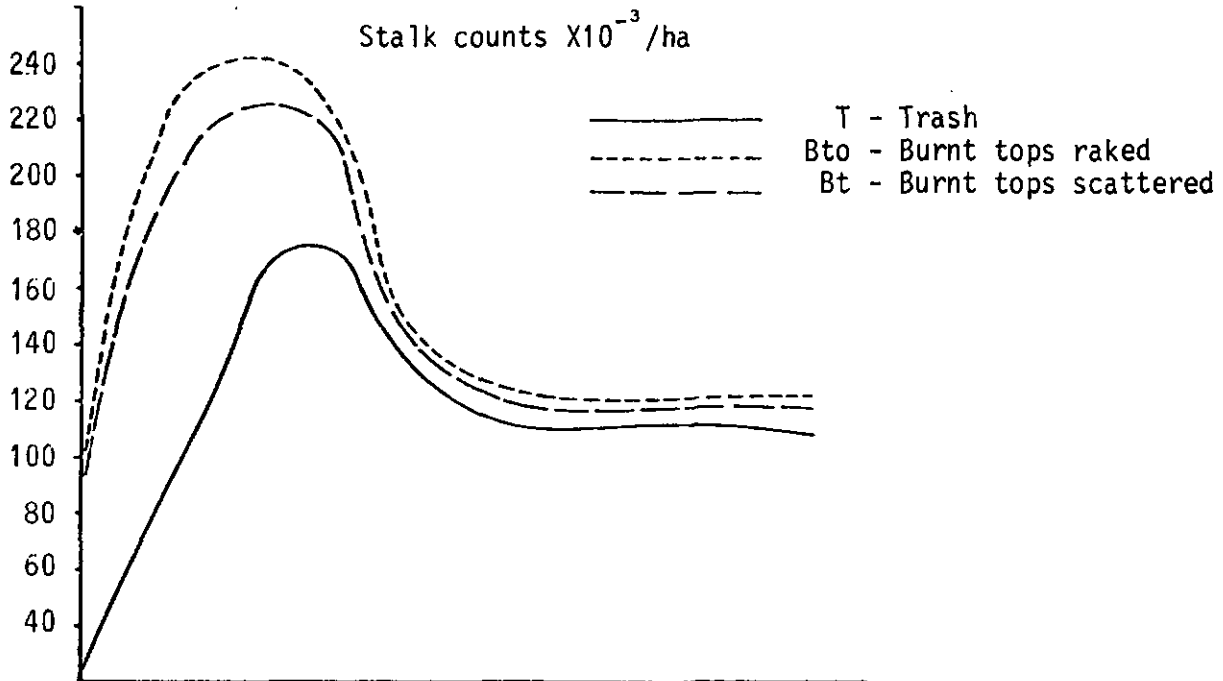
The slight depression in cane yield due to trashing is thought to be due to the winter start and the colder S.E. aspect of the trial site.

- 3) The very droughted condition of the previous crop resulted in most of the tops being burned off during harvest. The difference in ground cover between the Bt and Bto treatments was thus very slight and is reflected in the very similar cane yields obtained.
- 4) The trial will continue into the third ratoon.

RMCI/SN  
30/11/81

Rainfall (mm)  
(21/05/80-8/09/81)

Rainfall (mm)



SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: BT14/80/R3

Cat. No.: 1149

TITLE: Trashing versus burning

1. Particulars of trial

This crop : 3rd Ratoon  
Site : Crookes Bros Estate  
 Renishaw (Isonti)  
Region : Coastal Hinterland  
Soil system : Umzinto - Coastal  
Soil form/series: Swartland/Rosehill  
Design : Randomised block  
 x 6 replications  
Variety : NCo 376  
Fertilizer / : N    P    K  
ameliorants 144   29   144  
 (Single application)

Soil analysis: Date: 16.11.1982  
pH    O.M.%    Clay %    P.D.I.  
 5,4       -       > 30       -  
 ppm  
 P    K    Ca    Mg    Zn    Al  
 12   75   577   207   3,1   4  
Age: 14,3 m    Dates: 8.09.1981-16.11.82  
Rainfall: 966 mm    LTM: 1 234 mm  
Irrigation: Nil        (Renishaw)

Aspect : South east

Soil description: Dark grey sandy clay loam topsoil which merges into a dark moderately structured subsoil which in turn overlies weathering granite rock at a depth of about 0,9 m.

Rainfall (mm)

Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	JuI	Aug	Sep	Oct	Nov	Total
1981/82	76	65	96	98	160	25	103	83	29	13	12	2	55	107	36	966
LTM	(60) 48	104	121	118	124	106	126	77	61	32	37	45	66	104	(121) 65	1 234

2. Objectives

To evaluate the effects of a trash blanket compared with no trash.

3. Treatments

3.1 Trash blanket

3.2 No trash - trash and tops raked off.

Notes on treatments

As it was intended to continue with the burning/trashing treatments in this crop, the previous crop was cut green and it was planned to burn the appropriate plots

a few days later. However problems with burning on site (conditions wet and too windy and the close proximity of mature cane) finally resulted in the trash and tops being raked off the plots by hand.

#### 4. Yield and crop characteristics at harvest

11.4.9  
G112

Treatments	Cane t/ha	Sucrose % cane	Sucrose t/ha	Ers t/ha	Stalk counts $\times 10^{-3}/ha$	Stalk length (cm)
Trash blanket	69	13,9	9,7	8,8	105	188
No trash	71	13,6	9,6	8,8	117	184
Mean	70	13,7	9,7	8,8	113	185
C V %	10,5	5,0	13,0	13,6	4,8	5,2
S E of treatment means	3,0	0,3	0,5	0,5	2,2	3,9
L S D (0,05)	9,5	0,9	1,6	1,5	7,0	12,4
(0,01)	13,5	1,3	2,3	2,2	9,9	17,6

#### 5. Comments on results

5.1 Rainfall was 75% of the LTM and the mean yield was 4,9 tc/ha/m and 7,24 tc/ha/100 mm of rainfall.

5.2 The crop started in spring and rainfall was relatively good for the first five months. This is thought to have contributed to the lack of response to a trash blanket. The SE aspect may also be contributory as this is the second ratoon in which no response has been obtained to a trash blanket.

5.3 The trial has been terminated.

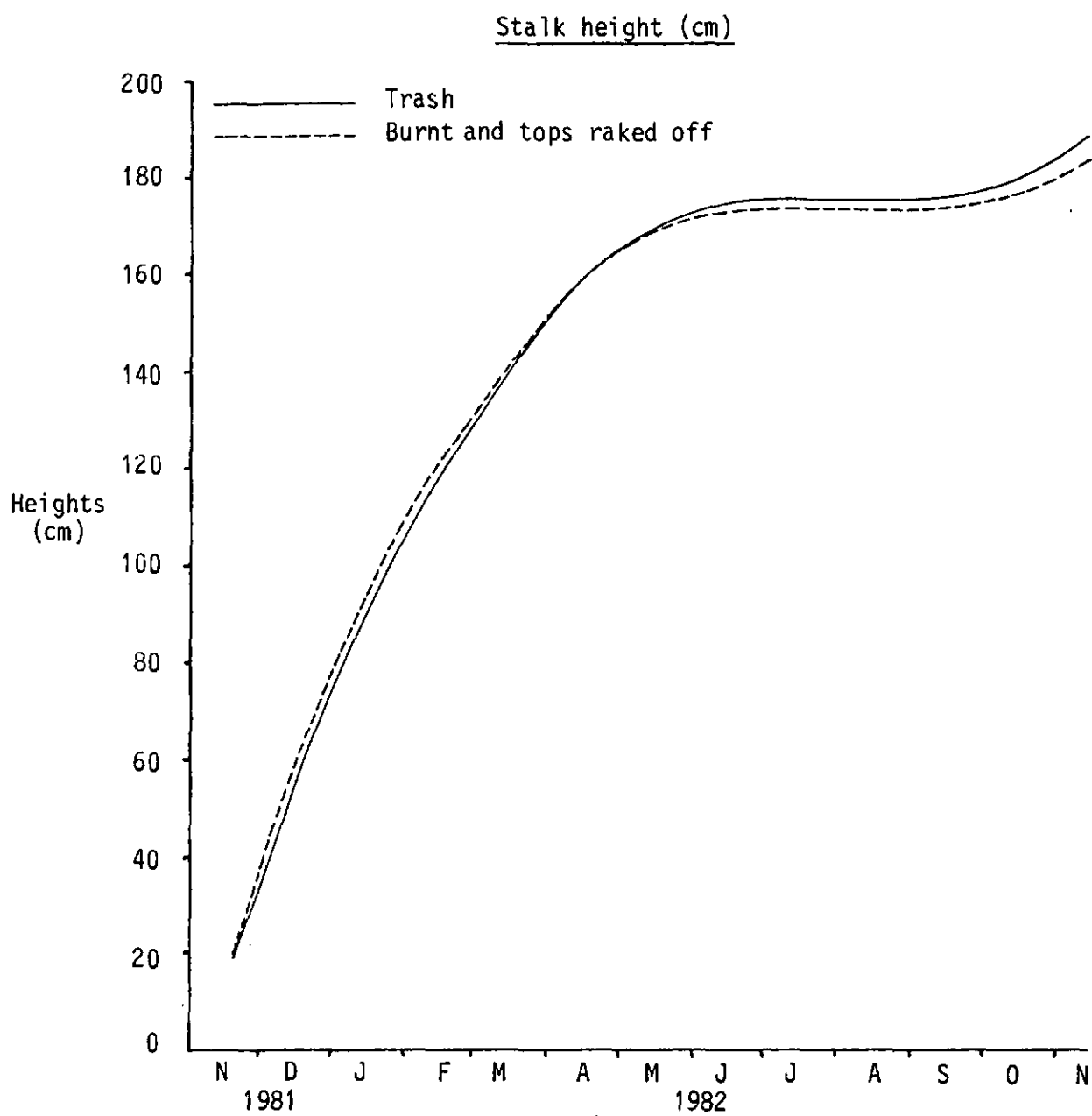
#### 6. Summary of the results of the two crops harvested (second and third ratoons)

The second ratoon started in winter in dry conditions but with an average long term rainfall. The third ratoon started in spring and received below average rainfall.

##### 6.1 Results Yields expressed in tons cane and tons sucrose/ha/annum

Treatment	Trash blanket		Burnt tops raked off		Burnt tops scattered	
	tc/ha	ts/ha	tc/ha	ts/ha	tc/ha	ts/ha
Second ratoon	70	9,8	75	10,2	73	10,2
Third ratoon	58	8,1	60	8,1	-	-
Mean	64	9,0	68	9,2	-	-

BT 14/79/R3 Renishaw



BT 14/79/R Renishaw

