

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Code: Rip 1 ETVL/87/R4

Cat No: 1623

TITLE: Ripping in ratoon cane grown in Shortlands form soils.

1. PARTICULARS OF PROJECT:

This crop : 4th ratoon  
Site : TSB Mhlati Block 3  
Region : Northern irrigated  
Soil system : Komatipoort  
Soil form : Shortlands  
Soil depth : 650mm  
Design : Randomised blocks 6 reps  
Plot Size : 4 rows x 20m x 1,5m spacing  
Variety : N14  
Fertilizer/ :    N            P            K  
Ameliorants:  
3/12/86 kg $ha^{-1}$    100        10        60  
12/1/87            80        10        48  
                  180        20        108

Soil analysis: Date: 23/9/85

(for Rip2ETVL/85)

<u>pH</u>	<u>O.M. %</u>	<u>Clay %</u>	<u>P.D.I.</u>
7,5		52	
ppm			

Age: 12,5mths Dates: 27/11/86 -

11/12/87

Rainfall: 632,5mm L.T.M.: 618 mm

Irrigation: 48mm on 7 day  
cycle

2. OBJECTIVES:

1. To determine the effects of compaction on cane yields.
2. To determine the effects of deep ripping (500mm) the interrows on the yields of a ratoon crop subjected to compaction.

3. TREATMENTS:

1. Compacted interrows - ripped to 500mm
2. Compacted interrows - not ripped
3. Not compacted interrows - ripped to 500mm
4. Not compacted interrows - not ripped

Notes on treatments: 1. The previous crop had been ripped within 5 days of harvesting the previous crop when soil moisture was relatively high.

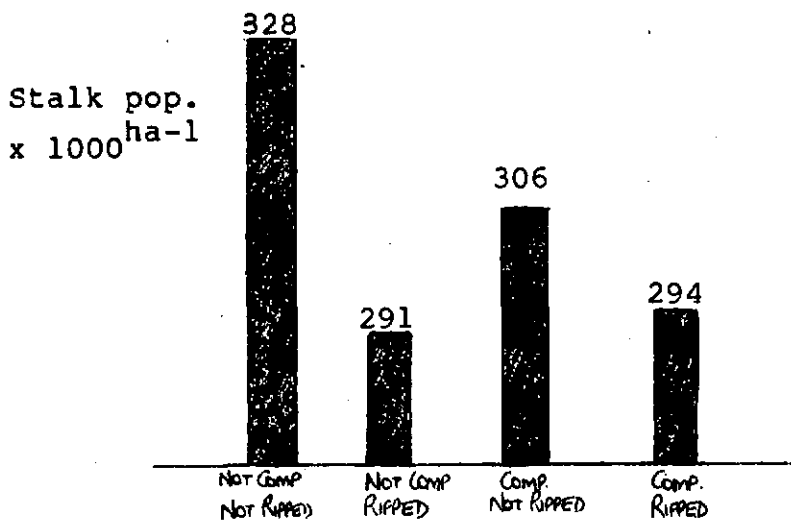
2. A total of 53,5mm of rain fell during the two weeks prior to harvesting. During the loading operations a further 9mm made infield conditions soggy and deep ruts were left by trucks with a total mass of about 50t.

3. Plots were ripped 14 days after harvesting using a Twin-tine ripper drawn by a Mercedes Benz tractor. The ripping depth was about 450mm.

4. RESULTS:

Growth measurements at 3 months of age

Treatments	Stalk height (cm)	Stalk population 1000 <sup>-ha</sup>	Stalk length(cm) x pop x 1000 <sup>-ha</sup>
Comp/ripped	105	294	30870
Comp/not ripped	116	306	35496
Not comp/ripped	103	291	29973
Not comp/not ripped	104	328	34112
MEANS Compacted	110,5	300	33150
Not compacted	103,5	309,5	31878
Ripped	104	292,5	30420
Not ripped	110	317	34870



COMMENTS:

- \* Spells of rain accompanied by strong winds lodged the entire trial area. No yields were therefore recorded.
- \* Growth measurements were done at 3 months of age and these indicate that

(a) Ripping

- \* Reduced stalk populations by 20% in areas which were not compacted and appears to have had no effect on stalk heights. Ripping compacted areas appears to have had a small negative effect on stalk populations (4%) and stalk heights were not affected.

(b) Compaction

- \* Stalk populations were reduced by about 7% while stalks were about 12% taller than in plots which were not compacted.
- \* While both ripping and compaction had negative effects on cane growth the effects of ripping were clearly greater at this early stage of growth.

\* This trial has been terminated.