

A IV

**SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION**

Code : Nem/91/1/MITC
Cat No. : 1855

Title: Preliminary field trial to assess the potential of Busan 1020 (Metham sodium) as a biocide for use in re-establishing sugarcane (Nem/91/1/MITC)

1. Particulars of project:

This crop : Ratoon Site : La Mercy Plot size : 5 rows x 26 m Soil texture : Sand Soil moisture : 4.9% (13.3.92) No. of replicates : 3, in blocks	Soil analysis Date :					
	pH	OM%	Clay%	PDI		
			<6	-		
	ppm					
	P	K	Ca	Mg	Zn	Al
	Age :			Dates: 9.3.92		
	Rainfall:			L.T.M.:		
	Irrigation: Nil					

2. Objectives

To assess the effectiveness of Busan 1020 as a means of killing the old crop, as a control agent for weeds and nematodes and as a means of increasing the yield of the plant and first ratoon crops.

3. Treatments

Busan 1020 l/ha	Interrow 80 cm wide	Over-the-row 40 cm wide
450	✓	✓
600	✓	X
600	✓	✓
850	✓	✓
Control 0	X	X

Method of application:

Interrow: subsurface injection in the interrow by means of a 4 shank applicator to depths of 10, 20 and 30 cm. Product diluted and applied in 3733 ℓ water per hectare.

Over-the-row: surface application by hand with a watering can. Product diluted and applied in 6400 ℓ per hectare.

In two blocks the surface treatments were sealed with 48000 ℓ water per hectare and in the third block by 64000 ℓ per hectare.

Note that the control plots were not ripped.

Considerable difficulty was experienced in maintaining a constant depth of application in the interrow treatments as roots, soil and surface trash piled up in front of the four shanks and raised the applicator partly out of the ground.

Date of events:

Cane slashed back	- 9.3.92
Interrow treatment	- 11.3.92
Surface, over-the-row treatment	- 23 and 24.3.92
First assessment	- 24.3.92
Second assessment	- 8.4.92

First assessment

Interrow treatment: Most of the cane was a paler green than the untreated cane. Where the stools were disturbed or tipped over or where the applicator cut close to the row, some of the existing shoots were dead and there was no germination of the buds. There were thus a number of gaps in the rows. Generally there was good regrowth of shoots in all the plots, with the exceptions noted above.

Second assessment: (Two weeks after the over-the-row application)

The trial site smelt of Busan 1020. Treatment with Busan 1020 at 450 ℓ/ha in the interrow and over the row and at 600 ℓ in the interrow had little effect on the cane although the leaves of the former were a paler green than those of the controls. Some of the existing shoots were killed at 450 ℓ/ha but not in the 600 ℓ interrow treatment. The number of existing shoots that were killed was greater in the 600 ℓ and 850 ℓ overall treatments. However, a large proportion of the shoots were not killed.

The principal objective of this observation trial was to kill off the old ratoon crop. Since this has not been achieved it was decided not to proceed further with the trial.

In the preliminary work with Busan 1020 on sugarcane, the rate of application was calculated per linear metre of row and only the row was treated. Complete kill of cane was achieved at a rate of 60-120 ml Busan 1020/m of row. And at 42 ml/m most of the shoots were killed. Assuming 40 cm wide rows these rates are equivalent to overall treatments of about 1500-3000 ℓ /ha and 1050 ℓ /ha.

VWS/lb
12 October 1992