

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

Cat. No.: 1376

TITLE: Trifluralin phytotoxicity to sugarcane (Observation)

Purpose: To test the effects of trifluralin, a soil incorporated herbicide, for effects on plant sugarcane of varieties NCo 376, N12 and J59/3.

Site : Mount Edgecombe (traysite)

Soil : Hutton form. Shorrocks series

Details: 2 replications of four treatments for each of the three varieties, ie 24 pots, were filled with soil of the Shorrocks series.

Trifluralin was applied by means of a gas operated knapsack sprayer fitted with a Spraying Systems 8004-E fanjets at various rates to the pots. The soil in these pots was thoroughly mixed by hand immediately after application.

Subsequently half the soil from each pot was removed, fertilizer (10 g of 5.1.5 (42) per pot) was applied and one-eyed cane setts already dipped in Benlate fungicide were planted in the trays. The soil was then replaced in the pots to cover the setts.

Date of application: 19.1.82

Conditions:

Rainfall (mm)	On the day of spray :	0
	Days to first rain :	1
	Amount of first rain:	1,5
	Sunshine hours :	10,5
	Temperature °C :	8am : 25,6 2pm : 29,0
	Relative humidity % :	8am : 81 2pm : 76

Irrigation was applied by means of a dripper system.

Treatments and results: (1 month after spraying and planting)

Treatments	Rate in $\ell$ product /ha	Crop measurements					
		NCo 376		N12		J59/3	
		Stalk height (cm)	Stalk No./ pot	Stalk height (cm)	Stalk No./ pot	Stalk height (cm)	Stalk No./ pot
Control (unsprayed)	-	11,5	9	7,5	8	9,5	6,5
Trifluralin	3	4	9,5	3	9	4,5	7
Trifluralin	6	3	9	2,5	5,5	3	1
Trifluralin	12	2,5	7,5	1	1,5	2	5

Comments:

1. Stalk heights were severely reduced by all rates of trifluralin in all varieties.
2. The number of setts germinated was also affected by the treatments but to a lesser extent.
3. Photographs taken at two months of age confirmed these trends and the damage from all rates on all varieties was considered to be severe and unacceptable.
4. NCo 376 was affected slightly less than other varieties in terms of population reductions.
5. N12 was most severely affected of the three varieties.

PETT/IS  
20 July 1983