SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code : HW205/80
Cat. No: 1232

TITLE: PRE-EMERGENCE SCREENING TRIAL

1. Particulars of the project

This crop	:	Weeds only
Site	:	La Mercy
Region	:	N. Coast Coastal
Soil system	:	Umzinto/Coast Lowlands
Soil form	:	Fernwood
Design	:	Randomised block with 4 replications
Plot size	:	8 m x 2,5 m = 20 m²
Variety	:	No cane
Sprayed	:	14/10/80
Assessments	:	1. 28/11/80
		2. 19/12/80
Moisture regime:		Rainfed
Dominant weeds	:	Cyperus esculentus Panicum maximum Digitaria sanguinalis Eleusine indica

Soil analysis:

pH	Silt %	Sand %	Clay %	O.M.%	CEC
7,0	4	94	2	1,39	3,2

Spray method:
Gas-operated knapsack TK5 floodjet

Pressure: 150 kPa
Volume/ha: 325 ℓ

Weather conditions:	Temp.°C(8am)	Rainfal
At spraying	17,8	0
1 week prior to spray		3 mm
1 week after spray		40 mm
2 weeks after spray		40 mm

Soil conditions: Fine tilth. Dry on surfac
Moisture % (top 30 mm of soil): 3,7

2. Objectives:

To evaluate new herbicides and mixtures for their weed control efficacy in a light soil.

3. Treatments:

		Rate in kg or ℓ ai or ae/ha	Rate in kg or ℓ prod/ha
1.	Alachlor + atrazine	0,96 + 0,5	2,5 + 1
2.	Alachlor + atrazine	1,92 + 1,0	5 + 2
3.	Alachlor + atrazine + Reverseal 9	0,96 + 0,5 + 3 prod.	2,5 + 1 + 3
4.	Alachlor + atrazine + Reverseal 9	1,92 + 1,0 + 3 prod.	5 + 2 + 3
5.	Alachlor + atrazine + Reverseal 9	1,92 + 1,0 + 6 prod.	5 + 2 + 6
6.	Bladex Plus	2,25	4,5
7.	Bladex Plus	4,5	9
8.	Bladex Plus + Reverseal 9	2,5 + 3 prod.	4,5 + 3
9.	Bladex Plus + Reverseal 9	4,5 + 3 prod.	9 + 3
10.	Diuron + Sencor	1,6 + 1,4	2 + 2
11.	Destun + atrazine	2,5 + 1,0	5 + 2
12.	Eptam Super	2,16	3
13.	Eptam Super	3,6	5
14.	Sutan Plus	3,4	4
15.	Sutan Plus	5,1	6
16.	Triflurex EC		3
17.	Triflurex EC		6

Note on Treatments:

Treatments 12 - 17 were soil incorporated by means of tractor drawn offset disc harrow immediately after application. These treatments were not included in the randomised block design. Plot sizes changed to 40 m x 2,5 m = 100 m² and two replications were sprayed alongside the main trial.

4. Experimental:

The soil had a fine tilth at the time of spraying but was dry on the surface. An unsprayed control strip 1 m wide was left around each plot for the purpose of comparison. Weeds which germinated in thesecontrol strips were dominated by Cyperus esculentus, Digitaria sanguinalis, Eleusine indica and Panicum maximum.

5. Results:

Mean weed control ratings taken 45 and 66 days after spray are presented in Table 1. These are based on a 1-9 scale where 1 = complete control, 4 = just acceptable, 5 = just unacceptable and 9 = no control.

Table 1: Mean weed control ratings taken 45 & 66 days after spraying

Treatment	Rate in kg or ℓ prod/ha	All weeds T+45 days	C. esc. T+66 days	P. max. T+66 days	Grasses T+66 days
Alachlor + atrazine	2,5 + 1	6	8,3	7,3	1
Alachlor + atrazine	5 + 2	4	6,8	5,3	2
Alachlor + atrazine + Rev 9	2,5 + 1 + 3	5	7,5	7,5	3
Alachlor + atrazine + Rev 9	5 + 2 + 3	5	6,8	6,3	1,3
Alachlor + atrazine + Rev 9	5 + 2 + 6	4	7	6	1,3
Bladex Plus	4,5	5	6,5	7	4
Bladex Plus	9	4	5,3	5,5	3
Bladex Plus + Rev 9	4,5 + 3	4	5,8	6,3	1,5
Bladex Plus + Rev 9	9 + 3	4	5,5	6,5	3
Diuron + Sencor	2 + 2	4	4,3	5	1,7
Destun + atrazine	5 + 2	4	5,3	5	1,8
Eptam Super	3	1	3	4	2
Eptam Super	5	1	2	2	1
Sutan Plus	4	1	2	2	1
Triflurex EC	3	3	8	4	3
Triflurex EC	6	3	9	2	1

6. Comments:

1. In general very poor control of Cyperus esculentus and Panicum maximum was achieved in this experiment. As a result of this, ratings on other weeds such as Digitaria sanguinalis and Eleusine indica were less reliable since some competition may have been caused by the previous two species.

2. The best surface applied treatments were diuron + Sencor and Destun + atrazine both of which gave a small measure of control of Cyperus esculentus and Panicum maximum.

3. There were no marked differences due to the addition of Reverseal 9 at either rate to any combination

4. The incorporated treatments were all far superior to surface applied treatments. Excellent control was achieved of Cyperus esculentus and grasses including Panicum maximum by Eptam Super and Sutan Plus. Triflurex EC was not as effective on grasses at the low rate as the other incorporated treatments and showed no control of Cyperus esculentus. The incorporation technique was estimated to distribute the chemical to a depth of 100-150 mm and this may account for the poor effect from Triflurex EC. The recommended depth of incorporation is 50-75 mm.

PETT/HDN
19/6/81