

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

9000/46 HERBICIDE TRIAL

CAT: 1774

Object: To evaluate control of a range of herbicides for the control of Euphorbia (Euphorbia heterophylla) in sugarcane.

Location: Hippo Valley Estates, Section 18, Field 48.

Soil type: Basalt with 40% clay, 12% silt and 48% sand.

Variety/Spacing: NCo375, 1,5m between rows.

Irrigation/  
Fertiliser: Applied by Section Manager in accordance with the normal estate practice.

Treatments:

(a) Controls

1. Unsprayed hand-weeded plot.
2. Unsprayed with hand weeding done after the second assessment.

(b) Herbicides

<u>Trade name</u>	<u>Chemical name</u>	<u>Rate /ha</u>	<u>Time of application</u>
3. Actril DS	Ioxynil+2,4-D	0,8l	post-emergent
4. Gesapax+S*	Ametryne +S*	3kg+0,2%	" "
5. Gesapax+MCPA	Ametryne+MCPA	3kg+4l	" "
6. MCPA	MCPA	4l	" "
7. Gesaprim	Atrazine	2l	" "
8. 2,4-D	2,4-D	2l	" "
9. Gesaprim+2,4-D	Atrazine+2,4-D	2l+2l	" "
10. Sencor	Metribuzine	3kg	" "

S\* = Surfactant or wetter.

Conduct:

1. The trial was marked out and quadrant positions pegged before spraying.
2. Weed assessments and counts were done at spraying one week after spraying and fortnightly thereafter until 7 weeks after spraying.
3. All plots were hand weeded after the last assessment.

Spraying  
Details:

Herbicides were applied using a lever operated knapsack sprayer with pressure gauge attached to the lance. The lance had 03 F110 nozzle. The solution was delivered at 211 l/ha by maintaining a pressure of 200 kPa. The trial was sprayed on 30th October 1990 when cane was 25-30 cm tall. At spraying the weather was calm and the soil moisture was 12,7%.

Weed situation:

Weeds were at 3 stages of growth probably in response to the three previous irrigations. The larger Euphorbia was already flowering while the smallest had 2-3 leaves. Other weeds present at the trial site were Comelina spp, Cucumis spp and grasses all at 2-3 leaf stages. Grass species were too small and difficult to identify.

RESULTS AND DISCUSSIONS:

Relevant data are presented in Table 1 and 2. Three treatments, Actril DS, Gesapax+wetter and Gesapax+MCPA gave outstanding post emergent control of Euphorbia with the smaller weeds being the most susceptible. Actril DS and Gesapax+wetter treatments had shorter residual effect than Gesapax+MCPA mixture which controlled Euphorbia well for more than 3 weeks (see Table 1).

All Gesapax treatments scorched cane leaves but plants grew out of it within 4 weeks and at full canopy the effects had disappeared completely.

Sencor gave a good visual impression of weed control without damage to cane but counts in quadrants showed that the chemical was more effective on grasses rather than on the targeted Euphorbia (see Table 2).

Crop Canopy in the Gesapax treatments was reduced in the first 4 weeks after spraying but none of the herbicide treatments affected the stalk numbers. A flush of newly germinated Euphorbia was recorded at 44 days after spraying in the Gesapax+MCPA plots and earlier in the other treatments showing that none of the chemical rates used had a long term residual effect on Euphorbia.

CONCLUSION

The Gesapax+MCPA mixture gave a remarkably good post-emergent control of Euphorbia but none of the herbicides tested was effective as a long term pre-emergent treatment.

Gesapax treatments scorched cane leaves and only directed sprays are recommendable on NCo376. Further testing should include placement of herbicide in the herbicide susceptible variety N14 fields.

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CN/Apr '91

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Table 1. Number of Euphorbia plants per square meter

TREATMENTS	Rate /ha	Days after spraying				
		0	7	21	44	60
Control	-	184	8	16	8	8
Control	-	144	80	84	20	32
Actril DS	0,8l	180	0	12	32	32
Gesapax+S*	3kg+0,2%	280	0	16	28	16
Gesapax+MCPA	3kg+4l	168	0	0	16	12
MCPA	4l	272	48	8	16	16
Atrazine	2l	204	16	20	12	32
2,4-D	2l	136	68	32	92	68
Atrazine+2,4-D	2l+2l	148	20	12	28	32
Sencor	3kg	276	16	32	28	36

S\* = Surfactant or wetter (Shell spread)

Table 2. Number of grass species per square meter

TREATMENTS	Rate /ha	Days after spraying				
		0	7	21	44	60
Control	-	24	0	4	4	40
Control	-	4	4	4	4	0
Actril DS	0,8l	24	4	8	8	40
Gesapax+S*	3kg+2%	4	0	0	0	0
Gesapax+MCPA	3kg+4l	4	0	0	0	0
MCPA	4l	4	4	4	4	8
Atrazine	2l	8	0	12	8	68
2,4-D	2l	8	4	8	4	4
Atrazine+2,4-D	2l+2l	4	4	4	4	12
Sencor	3kg	4	0	0	4	8