

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

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AGRONOMIC EXPERIMENTS

D(iv) HERBICIDES AND WEEDS.

Code: H.W. 44. 1966-67
 Catalogue No.: ~~486~~ 107
 This crop: Plant
 Site: Mt. Edgecombe Field M4.
 Altitude: 300'
 Soil series: Rydalvale
 Design: Random Blocks 6 reps.
 Variety: N:Co.376
 Age: 4-month trial. No harvest.

Fertilizer: N P K
 lb/acre Furrow - 800 supers -
 T/Dress 100 urea - 200 muriat
 Soil analysis: No samples taken.
 Water regime: Rainfed only.
 Rainfall during trial period - 17.19"

Object: To screen new herbicides for pre- and post-emergent activity.

Treatments and Results:

I. Broad-leaved weed ratings

0 = No control
 9 = Full control
 7 = Acceptable control

Treatment - Pre-Emergent		Score - days after treatment								Mean
Formulation	Rate/sprayed acre	25	32	38	42	70	80	85	96	0-50 days
Sindone	1.5 lb	4	4	4	2.5	1	1	1	1	3.6
"	3 "	5	5	5	5	3	1	1.5	2	5.0
Sindone "B"	2.5 "	5	5	4	4	1	0.5	1	0	4.5
"	4.5 "	8	7.5	7	7	2	1	2	1	7.4
C.P.50144	2 "	7	7	7	7	2.5	1	1	2	7.0
"	3 "	7	8	7	7	3.5	2	2	2	7.3
Ramrod	6 "	7	8	7	7	5	3	3	3	7.3
"	8 "	8	8	7	7.5	4	3	2	2	7.6
Cotoran	2 "	5	6.5	4	3	4	1	2	2	4.6
"	4 "	6.5	6	6	5	4	1	2.5	3	6.0
Banvel "D"	5 "	9	9	7	9	6.5	6	6	5.5	8.5
"	10 "	9	9	9	9	8	7	7	6	9.0
2,4-D amine	3 lbs a.e.	7.5	8	8	8	4	2	2	2	8.0
- Post-Emergent		27	38	43	54					0-50 days
Cotoran	4 lbs	7	5	6.5	6					6.2
"	6 "	7	7	7	7					7.0
Afalon	4 "	6	5	6	6					5.8
Karmex	4 "	8	6	7	6.5					6.9
Cocktail	*	9	9	9	8.5					8.9
Hand weeding once		8	9	4	2					5.8
Control + one hand weeding ⁽¹⁾		0	0 ⁽¹⁾	8	8					4.0

* Cocktail = 1.5 Hyvar X + 3 lbs. Karmex + 3 lbs. a.e. 2,4-D amine/acre.

II. GRASS RATINGS

0 = No control
 9 = Full control
 7 = Acceptable control

Treatment - Pre-Emergent		Score-days after treatment							Mean
Formulation	Rate/sprayed acre	32	38	42	70	80	85	96	0-50 days
Sindone	1.5 lbs	5	4	2.5	2	1	2	2	3.8
"	3 "	6	7	5	4	3.5	4	2	6.0
Sindone "B"	2.5 "	5.5	5	4.5	4	2	4	3	5.0
"	4.5 "	8	8	7.5	7	6	5.5	5	8.0
C.P.50144	2 "	8	9	8	7	6	6	5.5	8.3
"	3 "	8.5	9	8.5	7	5	6	5	8.7
Ramrod	6 "	8	9	8	5	4	4	2	8.3
"	8 "	8	9	8	6	5	4	4	8.3
Cotoran	2 "	6	3	2	2	1	2	1	3.7
"	4 "	6	6	4	1	0	1	0	5.3
Banvel "D"	5 "	9	7.5	9	4.5	2	3	2	8.5
"	10 "	9	9	9	6	5	5	4.5	9.0
2,4-D amine	3 lbs. a.e.	8	8	7.5	4	2	3	2	8.0
- Post-Emergent		27	38	43	54				0-50 days
Cotoran	4 lbs	3	2	2.5	1				2.5
"	6 "	1	0.5	1.5	2				1.0
Afalon	4 "	2.5	1	1.5	1				1.7
Karmex	4 "	1.5	2	2	1				1.8
Cocktail	*	6	5	5	4				5.3
Hand weeding once		8.5	8.5	4	0				7.0
Control + one hand weeding (1)		1.5	0 ⁽¹⁾	7	7.5				2.8

* Cocktail = 1.5 Hyvar X + 3 lbs. Karmex + 3 lbs. a.e. 2,4-D amine/acre

COMMENTS:

Under the rainfed conditions prevailing, pre-emergent applications of C.P.50144 and Ramrod (C.P.31393), as well as the higher rate of Sindone "B", compared very favourably with 2,4-D amine for control of both broad-leaved weeds and grasses. C.P.50144 and Ramrod also gave a measure of control of Cyperus species where these were present, but the control given did not reach commercially acceptable levels. C.P.50144 gave excellent control for a long period of time over the dominant grass species Digitaria adscendens. Banvel "D" was extremely phytotoxic to cane, all other treatments having little or no phytotoxicity to cane.

Of the post-emergent treatments, Cotoran (6 lbs/acre) and the "cocktail" gave good broad-leaved weed control but all treatments failed on grass control.

Bidens pilosa achieved an early dominance of the weed spectrum but Digitaria adscendens subsequently replaced it as the dominant species. Other weed species present included:-

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| <u>AMARANTHUS HYBRIDUS</u> | <u>SOLANUM NIGRUM</u> | <u>NICANDRA PHYSALOIDES</u> |
| <u>AMARANTHUS THUNBERGII</u> | <u>ELFUSINE INDICA</u> | <u>SIEGESBECKIA ORIENTALIS</u> |
| <u>COMMELINA BENGHALENSIS</u> | <u>AMBROSIA MARITIMA</u> | |
| <u>ECHINOCHLOA COLORUM</u> | <u>ECLIPTA ALBA</u> | |