

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

AGRONOMIC EXPERIMENTS D(iv) HERBICIDES AND WEEDS.

Code: H.W. 43.	<u>Fertilizer:</u>	N.	P.	K.
Catalogue No.: 405 95	lb/acre	Furrow -	800 supers	
This crop: Plant		T/Dress 100	-	200 mur-
Site: Chaka's Kraal. Field 3B		urea		iate.
Altitude: 300'	<u>Soil Analysis:</u>	No samples taken.		
Soil Series: Dwyka (Williamson)	<u>Water Regime:</u>	1' irrigation applied when soil		
Design: Random Block. 4 reps.		moisture deficit reached 1".		
Variety: N:Co.376.		Irrigation:	10.00 inches.	
Age: 12 months.		Rainfall:	43.25 inches.	

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	Mean
Formulation	Rate/sprayed acre	12	21	28	33	47	56	63	75	0-75 days	0-50 days
Sindone	2 lbs.	2.5	2	2	1	0.5	0	1.5	1	1.3	1.6
"	4 "	0.5	0	1	0	2	0	1.5	2	0.9	0.7
Sindone "B"	2 "	4.5	5.5	4	2	3	0	1	0	2.5	3.8
"	4 "	6	6.5	7	5.5	6	2	3.5	1.5	4.8	6.2
C.P.50144	2 "	8.5	9	8.5	8	9	7	6	5.5	7.7	8.6
"	4 "	9	9	8.5	8	9	8	8	8.5	8.5	8.7
Ramrod	6 "	1	0.5	1	0	0.5	0	0.5	1.0	0.6	0.6
"	8 "	3	3	1	1.5	1	0	0	0.5	1.3	1.9
Cotoran	2 "	8	8	8	7	8	5	5	5	6.8	7.8
"	4 "	9	9	8	9	9	8	9	8	8.6	8.8
Banvel "D"	5 "	2	4	2	2	1	0	1.5	1	1.7	2.2
"	10 "	3	6	5	4	4	2	2	3	3.6	4.4
2,4-D Amine	3 lbs. a.e.	8.5	9	8	7	7.5	5.5	5	4	6.8	8.0
Atrazine	4 lbs.	8	8	8	8	9	8	7	9	8.1	8.2
Fenac	2 lbs. a.e.	9	9	9	9	9	8	8	7	8.5	9.0
- Post-Emergent		18	23	30	42						0-50 days
Cotoran	4 lbs.	2.5	5	5.5	4						4.3
"	6 lbs.	4	2.5	3	2						2.9
Karmex	4 lbs.	8.5	7	6.5	6						7.0
Cocktail	*	9	8	9	8.5						8.6
Hand Weeding Twice		0	9	9	8						6.5
Control		0	0	0.5	1						0.4

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

II Yield Results

Treatment - Pre-Emergent		Stalk Counts			
Formulation	Rate/sprayed acre	X 10 ⁻³ /acre	T.C.A.	% Sucrose	T.S.A.
Sindone	2 lbs.	38.1	15.4	13.0	1.83
"	4 lbs.	25.6	12.8	13.2	1.68
Sindone "B"	2 "	29.3	17.9	13.8	2.46
"	4 "	35.7	27.8	13.7	3.77
C.P.50144	2 "	48.1	42.4	14.1	5.93
"	4 "	42.6	33.8	14.5	4.85
Ramrod	6 "	24.2	16.6	13.5	2.23
"	8 "	32.4	21.9	13.5	2.87
Cotoran	2 "	32.8	26.7	14.0	3.72
"	4 "	45.1	35.6	14.0	4.95
Banvel "D"	5 "	28.6	26.5	11.9	3.23
"	10 "	31.5	14.0	13.1	1.87
2,4-D Amine	3 lbs. a.e.	31.0	20.8	14.2	2.93
Atrazine	4 lbs.	43.0	27.0	14.0	3.67
Fenac	2 lbs. a.e.	46.1	41.2	13.8	5.61
- Post-Emergent					
Cotoran	4 lbs.	21.9	12.5	13.4	1.68
"	6 "	26.3	23.6	13.3	3.22
Karmex	4 "	28.3	21.3	13.9	2.97
Cocktail	*	35.3	18.2	14.0	2.54
Hand weeding twice		46.1	27.9	14.3	3.98
Control		22.9	16.9	12.4	2.10

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

Comments:

Due to the extreme variability of harvest data for plots of the same treatment, the yield results cannot be statistically analysed fully and must only be accepted with caution. However there is a very close relationship between the degree of successful weed control and the mean yields obtained per treatment.

Broad-leaved weeds were dominant during the early stages of the trial but were gradually replaced by grasses - mainly Digitaria adscendens. Cyperus species were present in various areas of the trial site but at no time reached serious proportions.

Pre-emergent applications of both rates of C.P.50144 and Cotoran gave excellent weed control under the irrigated conditions prevailing, and compared most favourably with the "established" herbicides 2,4-D, Atrazine and Fenac. Both chemicals gave a fair measure of control over annual and perennial grasses but had no effect on Cyperus spp. where these were present. Banvel "D" was extremely phytotoxic to cane. Post-emergent results were generally poor, mainly due to lack of grass control.

15th August, 1968.