

SOUTH AFRICAN SUGAR INDUSTRY
AGRONOMISTS' ASSOCIATION

Code : R57/79
Cat.No.: 1144

Title : MON 8000 - HORSESHOE FARM - PONGOLA

1. Particulars of the project :

<u>This crop</u> : Various	<u>Spray method</u> :
<u>Site</u> : Horseshoe or Baobab Farm Pongola	CO ₂ operated overhead boom sprayer - Trials 1, 2, 3 and 5.
<u>Region</u> : Northern irrigated	CP3 overhead boom sprayer - Trial 4 only.
<u>Soil system</u> : Komatipoort	<u>Nozzles</u> : TK 1,0
<u>Soil series</u> : Makatini/Shortlands	<u>Pressure</u> : CO ₂ operated - 200 kPa CP3 - 175 kPa
<u>Design</u> : Randomised blocks Four replicates	<u>Volume</u> : CO ₂ operated - 70 l/ha CP3 - 50 l/ha
<u>Variety</u> : NCo 376 or N52/219	
<u>Age at spraying</u> : c 11 months	
<u>Sprayed</u> : See Results	
<u>Sampled</u> : At spraying and from 3 to 9 weeks later	
<u>Moisture regime</u> : Irrigated	

2. Objective :

To test the use of glyphosate as a ripener and to observe effects on regrowth.

3. Treatments :

1. Control
2. Mon 8000 0,4 kg a.e./ha
3. Mon 8000 0,8 kg a.e./ha

4. Results /

4. Results :

TRIAL 1 : Baobab Farm, Soil - Shortlands. Sprayed 29 January.
Plant crop NCo 376

Treatment	Sucrose % cane		Juice purity %		Stalk mass g		Mass sucrose g/stalk	
	0	3	0	3	0	3	0	3
Control	10,7	10,4	85,1	82,9	670	856	71,7	89,5
Mon 0,4	11,3	11,0	87,2	85,4	708	864	80,8	95,4
Mon 0,8	11,2	11,7	87,2	85,8	675	<u>772</u>	76,4	90,7
CV%	2,3	7,7	-	2,9	-	3,9	-	10,9
LSD (P=0,05)	0,44	1,47		4,2		5,6		15,9

TRIAL 2 : Horseshoe Farm, Soil - Makatini. Sprayed 19 February.
Eleven month old 1st ratoon crop of N52/219

Treatment	Sucrose % cane		Juice purity %		Stalk mass g		Mass sucrose g/stalk	
	0	3*	0	3*	0	3	0	3
Control	6,7	8,2	65,3	74,2	1108	1353	73,7	109,0
Mon 0,4	6,6	9,4	65,0	76,9	1183	1298	77,6	119,7
Mon 0,8	7,0	9,7	67,9	76,8	1153	1256	81,3	124,3
CV%	11,0	6,8	-	3,0	8,8	9,4	-	9,8
LSD (P=0,05)	1,29	1,11		4,16	174	213		19,9

* Adjusted data - analysis of covariance with 0 week data used

TRIAL 3 : Horseshoe Farm, Soil - Makatini. Sprayed 12 March.
Ratoon crop NCo 376

Treatment	Sucrose % cane		Juice purity %		Stalk mass g		Mass sucrose g/stalk	
	0	6	0	6	0	6	0	6
Control	6,2	9,6	62,6	79,6	661	916	41,2	87,6
Mon 0,4	7,2	11,7	67,6	84,4	750	823	54,1	96,1
Mon 0,8	6,8	<u>12,4</u>	65,2	<u>85,2</u>	711	880	48,8	109,9
CV%	2,7	7,9	-	2,7	9,1	7,6	-	13,4
LSD (P=0,05)	0,31	1,54		3,86	112	116		22,7

TRIAL 4 : Horseshoe Farm, Soil - Makatini. Sprayed 25 April.
Ratoon crop NCo 376

Treatment	Sucrose % cane		Juice purity %		Stalk mass g		Mass sucrose g/stalk	
	0	4*	0	4*	0	4	0	4
Control	9,6	11,6	80,3	82,7	773	875	74,0	102,0
Mon 0,4	9,6	12,1	80,2	82,8	797	883	74,6	107,1
Mon 0,8	9,2	12,2	78,4	83,4	809	897	74,8	108,4
CV%	7,7	3,0	-	1,2	18,0	10,6	-	11,9
LSD (P=0,05)	1,26	0,66		1,88	247	163		21,8

* Adjusted data - analysis of covariance with 0 week data used

TRIAL 5 : Horseshoe Farm. Soil - Makatini. Sprayed 26 June.
7 month old 1st ratoon crop of NCo 376

Treatment	Sucrose % cane			Juice purity %			Stalk mass g			Mass sucrose g/stalk		
	0	4	9	0	4	9	0	4	9	0	4	9
Control	12,3	13,0	13,2	84,4	88,2	89,2	839	884	883	103,5	115,1	116,3
Mon 0,4	12,3	13,0	13,7	84,3	87,6	90,2	823	937	1000	101,5	121,7	137,1
CV%	8,0	6,8	4,2	-	0,8	0,9	6,9	7,3	7,3	-	7,5	8,9
LSD (P=0,05)	2,23	2,00	1,26		1,50	1,74	114	149	154		20,0	25,4

5. Comments :

1. Glyphosate produced a significant ripening response in Trials 1, 2 and 3 but not in Trials 4 and 5. Cane in Trial 5 looked short of moisture. This was confirmed by irrigation data which showed that this was due to a mechanical breakdown.
2. Regrowth from Trial 2 (plant crop of N52/219) showed that glyphosate produced severe chlorosis and stunting particularly at the highest rate. This trial was harvested within a month after spraying.

6. Conclusion :

The responses obtained were generally not as good as those obtained at Pongola Field Station. A possible explanation is that there was a shortage of available moisture at spraying or between spraying and harvesting at least in some of the trials. Recent results have shown the need for adequate moisture at spraying and between spraying and harvesting to produce good ripening responses from applying glyphosate.