

SOUTH AFRICAN SUGAR INDUSTRY  
AGRONOMISTS' ASSOCIATION

Code : R 5 ETv1/87

Cat No. : 1616

TITLE : Varieties x Rates of Fusilade Super.

1. Particulars of the crop

This crop : Plant  
Site : Mhlati TSB  
Region : Northern irrigated  
Soil system : Komatipoort  
Soil form : Shortlands  
Design : Split plot incomp.  
Latin sq.  
Plot size : 4 rows x 9m x 1,5m  
spacing  
Varieties : N14 and N17  
Date & age at : 5 May 1987 -  
spraying 9,4mths  
Date & age at : 8 July 1987 -  
harvest : 11,5mths  
Sampling dates: 5/5/87, 17/6/87, 8/7/87  
0 wks, 6 wks, 9 wks  
Irrigation : 1680mm  
Rainfall : 443mm

Spray method: CP<sub>3</sub> knapsack and  
overhead boom fitted with 2 x  
TK 1,0 floodjets.

Pressure : 150 kPa

Volume/ha ; 70 l

Weather at spray : Very hot

Condition of cane at spray :

8 to 9 green leaves, some areas  
not highly suitable for ripeners

Sampling technique : 4 stalks

taken at 4 predetermined points  
6 and 9 weeks after spraying  
3 stalks taken per plot as  
composite sample at spraying.

2. Objectives

- \* To determine the response of N17 to Roundup and to various rates of Fusilade Super
- \* To continue assessing the responses to ripeners during different times of the milling season
- \* To continue determining the optimum interval between spraying and harvesting for Fusilade Super and Roundup.

3. Treatments

1. Control A
2. Fusilade Super at 300ml ha<sup>-1</sup>
3. Fusilade Super at 400mlha<sup>-1</sup>
4. Fusilade Super at 600ml ha<sup>-1</sup>
5. Roundup at 800ml ha<sup>-1</sup>
6. Control B

Notes on sectioned N14 stalks

At spraying the TVD of 5 stalks in each control plot and in plots treated with Fusilade Super were marked with paint. Ten weeks after spraying these stalks (5 x 5 reps = 25 stalks per treatment) were harvested separately and sectioned. The stalks were topped at the first internode below the point at which the marked TVD was attached. Internodes below the top were numbered, sectioned and analysed separately for each treatment.

4. Results of sampling

		Pol % cane	Stalk mass(g/stalk)	Ers (g/stalk)	Purity %
At spraying	N17	9,31	872	81,2	74,1
(Composite)	N14	9,12	1005	91,7	72,6

wks after spray Variety	<u>Ers % cane</u>				<u>Stalk mass g/stalk</u>			
	<u>6</u>		<u>9</u>		<u>6</u>		<u>9</u>	
	N 17	N 14	N 17	N 14	N17	N14	N17	N14
Control A	11,4	10,3	12,0	10,9	988	1056	1050	1013
Control B	10,4	10,8	11,4	10,9	950	1000	913	1053
Fus 300	12,7**	11,2	12,3*	11,3	950	1000	913	1050
Fus 400	12,0	11,0	12,7**	11,3	950	1000	938	1025
Fus 600	13,0**	11,3	12,9**	11,5*	888	1025	963	1088
Rup 800	12,3	11,1	11,7	11,2	956	1050	1000	1063
MEAN	12,0	10,9	12,2	11,2	947	1022	963	1048
C.V.%	5,1		2,9		5,2		4,1	
LSD(P=0,05)*	1,0		0,58		90,4		71,5	
S.E.D. †	0,37		0,21		32,6		25,6	

Statistically significant at 5%\* and 1%\*\* levels

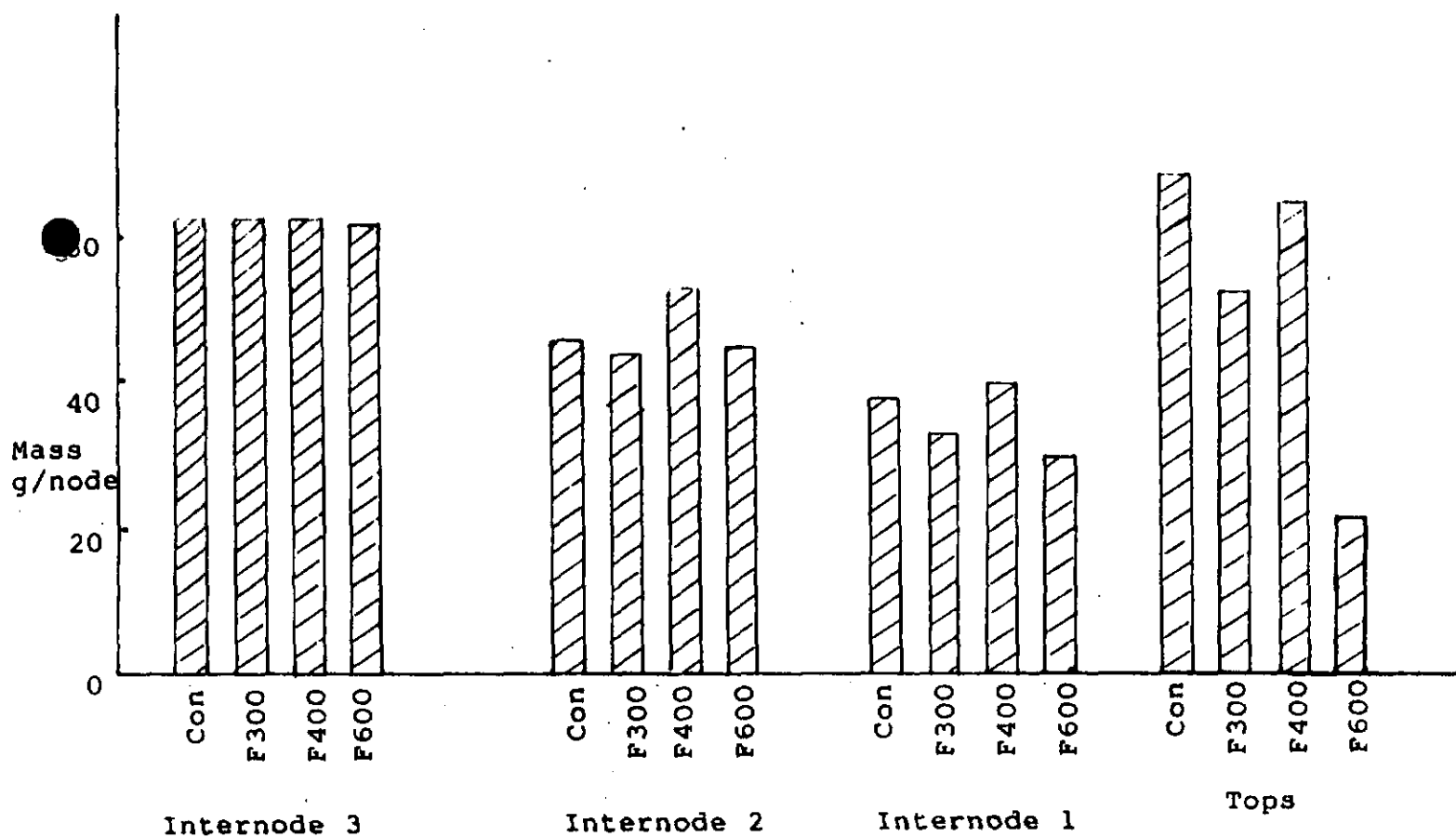
wks after spray Variety	<u>Ers g/stalk</u>				<u>Purity %</u>			
	<u>6</u>		<u>9</u>		<u>6</u>		<u>9</u>	
	N 17	N 14	N 17	N 14	N17	N14	N17	N14
Control A	113,1	107,7	126,1	109,6	83,9	81,4	86,7	85,2
Control B	99,0	107,6	104,4	114,8	81,3	83,1	86,2	85,2
Fus 300	121,2	111,7	112,7	118,6	86,9*	83,9	88,3*	86,4
Fus 400	113,1	110,3	118,2	116,4	85,6	83,2	88,5*	86,1
Fus 600	114,8	116,2	125,2	124,5*	87,6*	84,3*	88,5*	86,1
Rup 800	118,2	117,2	116,6	118,5	86,1	83,4	86,4	85,1
MEAN	113,2	111,8	117,2	117,1	85,2	83,2	87,4	85,7
C.V.%	9,3		6,1		2,1		0,8	
LSD(P=0,05)*	18,3		12,6		3,0		1,7	
S.E.D. †	6,6		4,5		1,1		0,42	

Results of sectioned stalks (N14 only)

Stalk mass (g)

Node No.	<u>Total stalk "cumulated"</u>				<u>Segments of stalk</u>			
	Cont	F300	F400	F600	Cont	F300	F400	F600
12	52	69	-	79	52	69	-	79
11	115	145	64	153	63	76	64	74
10	179	220	131	230	65	75	67	76
9	242	292	196	304	63	73	66	75
8	308	367	260	382	65	75	63	77
7	376	444	325	460	68	78	65	78
6	445	526	393	539	69	81	68	78
5	515	608	461	616	71	82	68	78
4	585	684	530	687	70	77	69	71
3	648	747	593	749	63	63	63	62
2	693	790	646	793	45	43	52	44
1	730	821	684	822	37	32	39	29
tops	797	873	748	843	68	51	64	21

Effects of Fusilade Super on mass of the upper part of stalks



Ers & cane

Node no.	<u>Total stalk "cumulated"</u>				<u>Segment of stalk</u>			
	<u>Cont.</u>	<u>F 300</u>	<u>F 400</u>	<u>F 600</u>	<u>Cont.</u>	<u>F 300</u>	<u>F 400</u>	<u>F 600</u>
12	13,5	13,6	-	13,6	13,5	13,6	-	13,6
11	13,3	13,5	13,3	13,6	13,2	13,3	13,3	13,6
10	13,2	13,4	13,2	13,4	13,0	13,3	13,1	13,0
9	13,0	13,4	11,9	13,3	12,5	13,2	9,4	12,8
8	12,8	13,3	11,5	13,0	12,2	13,1	10,4	12,1
7	12,6	13,2	10,7	12,8	11,3	12,7	7,2	11,5
6	12,2	13,0	10,8	12,4	10,3	11,7	11,2	10,4
5	11,8	12,7	10,7	12,1	8,9	11,1	10,6	9,5
4	11,3	12,4	10,6	11,7	7,7	10,1	9,9	8,2
3	10,8	12,1	10,5	11,3	6,2	9,1	9,4	7,5
2	10,4	11,8*	10,1*	10,7*	4,3	5,6*	5,9*	-
1	9,9*	11,5*	9,9*	10,3*	1,9*	5,6*	5,9*	-
tops	9,2	11,0	9,2	10,1*	1,0	2,2	2,4	-

\* Interpolated data

Ers g/stalk

Node no.	<u>Total stalk "cumulated"</u>				<u>Segments of stalk</u>			
	<u>Cont.</u>	<u>F 300</u>	<u>F 400</u>	<u>F 600</u>	<u>Cont.</u>	<u>F 300</u>	<u>F 400</u>	<u>F 600</u>
12	7,0	9,4	-	10,7	7,0	9,4	-	10,7
11	15,3	19,5	8,5	20,8	8,3	10,2	8,5	10,1
10	23,7	29,4	17,2	30,8	8,4	9,9	8,7	10,0
9	31,6	39,0	23,4	40,4	7,9	9,6	6,2	9,6
8	39,6	48,8	30,0	49,7	8,0	9,8	6,6	9,4
7	47,2	58,6	34,7	58,8	7,7	9,9	4,7	9,0
6	54,4	68,1	42,3	66,9	7,1	9,5	7,6	8,2
5	60,6	77,2	49,5	74,3	6,3	9,1	7,2	7,4
4	66,0	85,0	56,3	80,1	5,4	7,7	6,8	5,8
3	69,9	90,6	62,2	84,8	3,9	5,7	5,9*	4,6
2	71,8	93,1*	65,3*	84,8*	2,0	2,4*	3,1*	-
1	72,6*	94,8*	67,6*	84,8*	0,7*	1,8*	2,3*	-
tops	73,2	96,0	69,1	84,8*	0,7	1,1	1,5	-

\* Data has been interpolated because of insufficient material

## Comments

### Varieties

Although there is no statistical evidence that N14 and N17 responded differently to ripeners, the responses of N17 were larger than those from N14 in terms of cane quality.

### Rates of Fusilade Super

Responses of N14 to Fusilade Super only reached levels of statistical significance ( $P=0,05$ ) in cane treated with  $600\text{mℓ ha}^{-1}$ .

The significant responses of N17 in terms of cane quality showed a clear trend of higher responses to increasing rates of Fusilade Super. This trend was also reflected in mass ers per stalk but responses did not reach levels of statistical significance because of the variable growth of N17 in this trial.

### Roundup

Responses to Roundup were small and inferior to those from Fusilade Super.

### Sectioned stalks of N14

#### Stalk mass

There is some evidence that the mass of the first node below the point of attachment of the TVD at the time of spraying is affected by Fusilade Super. The effects were small and similar for the various rates of Fusilade Super. The growth after spraying (above point of attachment of marked TVD) was more severely affected by Fusilade Super. The mass of this growth (after spraying) was substantially less in stalks treated with  $600\text{mℓ ha}^{-1}$  than those treated with  $300\text{mℓ ha}^{-1}$ .

#### Cane quality

Because of insufficient material no determinations could be made of the quality of internodes 1 + 2. Tops of treated cane had on average 2,3 ers & cane which was 1,2 units higher than untreated cane.

There is some evidence that Fusilade Super improves cane quality of most internodes throughout the length of the stalk.

General

At the time of spraying there were indications that some cane in this trial was not highly suitable for chemical ripening (7 to 9 green leaves) Irrigation was suspended 4 weeks before harvesting and the low soil moisture in some areas of the trial may have affected responses measured 9 weeks after spraying.

RAD/lp  
7/12/87

Fig 1. Partitioning showing the change from control in ers g per section 10 weeks after spraying Fusilade Super (300mℓ ha<sup>-1</sup>).

