SOUTH AFRICAN SUGAR INDUSTRY AGRONOMISTS' ASSOCIATION

Catalogue: 1193 Object: To determine the effect on yield of different levels of smat infection. This crop: Flant Age: 12,0 months (8.9.78 to 7.9.79) Location: RSA Experiment Station, Kudu Block H6-9 Soil type: FE.1 sandy clay loam derived from gneiss Design: Randomised blocks, 4 replications Variety/Spacing: NCo 376 in 1,5 m rows Fertiliser: (kg/ha) N $P_2 0_5$ $K_2 0$ 120 100 60 Rainfall: 707 mm Irrigation: 680 mm Treatments: A range of 8 smat levels described in terms of percentage smat-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smat levels were applied by planting inoculated seedcane and Bayleton (triadimefon) - treated seedcane in the prescribed ratics. (b) Inoculated seedcane was dipped in a fresh smat spore suspension immediately before planting. (c) Bayleton 25% E.0. was used at a concentration of 0.025% as a 1-minute cold water dip. (d) Nett plots were separated by a smit-free barrier of three rows of N 52/219 (Thmune to smit).		3300/44 LEVELS OF SMUT INFECTION
This crop: Plant Age: 12,0 months (8.9.78 to 7.9.79) Location: RSA Experiment Station, Kudu Block H6-9 Soil type: FE.1 sandy clay loam derived from gneiss Design: Randomised blocks, 4 replications Variety/Spacing: NC0 3/6 in 1,5 m rows Fertiliser: (kg/ha) N P_2O_5 K_2O 120 100 60 Rainfall: 707 mm Inrigation: 680 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. (a) The defined smit levels were applied by planting inoculated seedcane and Bayleton (triadimefon) - treated seedcane and in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smut spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut). N RESUMAS:	<u>Catalogue</u> : <u>Object</u> :	1193 To determine the effect on yield of different levels of smut infection.
Location: RSA Experiment Station, Kudu Block H6-9 Soil type: E.1 sandy clay loam derived from gneiss Design: Randomised blocks, 4 replications Variety/Spacing: NCo 376 in 1,5 m rows Fertiliser: (kg/ha) N P_2O_5 K_2O 120 100 60 Rainfall: 707 mm Irrigation: 680 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smit levels were applied by planting incoulated seedcane and Bayleton (triadimeton) - treated seedcane in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smit spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Hmmune to smit).	This crop:	Plant <u>Age:</u> 12,0 months (8.9.78 to 7.9.79)
Soil type: FE.1 sandy clay loam derived from gneiss Design: Randomised blocks, 4 replications Variety/Spacing: NCo 376 in 1,5 m rows Fertiliser: (kg/ha) N $\frac{P_2O_5}{120}$ K_2O}{60} Rainfall: 707 mm Irrigation: 880 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smit levels were applied by planting incoulated seedcane and Bayleton (triadimefon) - treated seedcane in the prescribed ratios. (b) Incculated seedcane was dipped in a fresh smit spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smit-free barrier of three rows of N 52/219 (Immune to smit). RESULTS:	Location:	RSA Experiment Station, Kudu Block H6-9
Design: Randomised blocks, 4 replications Variety/Spacing: NCo 3/6 in 1,5 m rows Fertiliser: (kg/ha) N P_2O_5 K_2O_5 Ico 100 60 Reinfall: 707 mm Inrigation: 880 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smit levels were applied by planting incoulated seedcane and Expleton (triadimefon) - treated seedcane in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smit spore suspension immediately before planting. (c) Expleton 25% E.O. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smit).	Soil type:	PE.1 sandy clay loam derived from gneiss
Variety/Spacing: NCo 376 in 1,5 m rows Fertiliser: (kg/ha) N $\frac{P_2O_5}{120}$ $\frac{K_2O}{60}$ Reinfall: 707 mm Irrigation: 880 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smut levels were applied by planting inoculated seedcane and Bayleton (triadimefon) - treated seedcane in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smut spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut).	Design:	Randomised blocks, 4 replications
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Rainfall: 707 mm Inrigation: 880 mm Treatments: A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane. Conduct: (a) The defined smut levels were applied by planting incoulated seedcane and Bayleton (triadimefon) - treated seedcane in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smut spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smit).	۰ ۲	120 100 60
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 <u>Conduct</u>: (a) The defined smut levels were applied by planting incoulated seedcane and Bayleton (triadimefon) - treated seedcane in the prescribed ratios. (b) Inoculated seedcane was dipped in a fresh smut spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smit). 	Treatments:	A range of 8 smit levels described in terms of percentage smut-infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane.
 (b) Inoculated seedoane was dipped in a fresh smut spore suspension immediately before planting. (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut). 	Conduct:	(a) The defined smut levels were applied by planting incoul- ated seedcane and Bayleton (triadimefon) - treated seed- cane in the prescribed ratios.
 (c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip. (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut). 	- ⁻ . 	(b) Inoculated seedcane was dipped in a fresh smit spore suspension immediately before planting.
(d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut).		(c) Bayleton 25% E.C. was used at a concentration of 0,025% as a 1-minute cold water dip.
RESULTS:	• •	(d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (Immune to smut).
RESULTS:		
,	RESULTS:	

Relevant data from the plant crop are shown in the table on Page 2.

The method used was successful in creating a wide range of smut infection levels, although there were only small differences in whip counts between the control and the 1% infection level, and also between the 75% and 100% levels of infection.

However, there were no significant yield or quality effects induced by the treatments, in spite of the differences in whip counts. Smut infection levels can be expected to increase considerably in the first ratoon, when yield differences are more likely to be measured

KEC/October, 1979.

3300/44 LEVELS OF SMUT INFECTION

Treatment	Cane t/ha	ERC% cane	TERC per ha	Stalks/ ha x 10 ⁻³	Whips per ha	Smit rating
Control 1% infected seed 5% " " 10% " " 20% " " 50% " " 75% " " 100% " "	162,73 162,65 158,14 167,18 158,96 155,22 152,72 161,97	11,76 11,89 11,92 11,56 12,25 12,02 11,87 11,55	19,16 19,31 18,82 19,33 19,50 18,61 18,00 18,72	157,3 150,1 154,0 154,5 154,5 157,3 155,8 154,0	778 750 2 028 2 722 3 778 13 944 33 750 28 694	5 5 6 6 7 9 8
L.S.D. P=0,05 P=0,01	N.S. N.S.	N.S. N.S.	N.S. N.S.	-		-
Trial mean S.E. plot ± S.E. mean ± C.V.%	159,95 8,35 . 4,18 5,22	11,85 0,71 0,36 6,02	18,93 0,89 0,45 4,71	154,7'	10 801	- - - -

-2-

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

· 、	3300/44 LEVELS OF SMUT INFECTION
Catalogue:	1193
Object':	To determine the effect on yield of different levels of smut infection.
This crop :	First ration Age: 12,0 months (7.9.79 to 9.9.80)
Location :	ZSA Experiment Station, Kudu Block H6-9
Soil type :	PE,1 sandy clay loam derived from gneiss
De sign :	Randomised blocks, 4 replications
Varie ty/spacing :	NCo 376 in 1,5m rows
Fertiliser (kg/ha): <u>N</u> P_2O_5 K_2O
	P 120 100 60 1R 180 100 60
Reinfall :	774 mm Irrigation : 968 mm
<u>Treatments</u> :	A range of 8 smut levels defined in terms of percentage smut infected seedcane at planting, viz. 0; 1; 5; 10; 20; 50; 75; 100% infected seedcane.
Conduct :	 (a) The defined smut levels were applied by planting inoculated seedoane and Bayleton-treated seedcane in the prescribed ratios.
	(b) Inoculated seedoane was dipped in a fresh smut spore suspension immediately before planting.
	(c) Bayleton 25% E.C. was used at a concentration of 0,025% a.i. as a one-minute cold water dip.
	(d) Nett plots were separated by a smut-free barrier of 3 rows of N 52/219 (immune to smut)
· · ·	

RESULTS

(a) <u>Smit incidence</u> Records from the plant and first ration crops are shown in the following table (smit whips/ha):

2./ Table .

Perpe

	Smit whips/ha				
Treatment	P	lR			
Control	778	27 583			
1% inoculated seedoane	778	23 583			
5% " "	2 056	34 889			
10% " "	2 778	29 611			
20% " "	3 972	34 472			
50% " "	14 833	61 639			
75% " "	33 972	91 111			
100% " "	29 167	91 056			
L.S.D. P=0,05/	6 527	26 883			
P=0,01	8 884	36 558			
Trial mean	11、042	49 243			
S.E. mean +	2 219	9 138			
C.V.%	40,19	37,11			

The method used was successful in creating a wide range of smut infection levels in the plant crop, but differences between treatments were less pronounced in the first ration.

Roguing was carried out in the control treatment only, and all others remained unrogued throughout the course of the trial; smut levels were thus considerably higher than would normally be experienced.

Relevant yield data were as follows :-

. . .

(b) Yields and quality

		· · · · · · · · · · · · · · · · · · ·				· _ / _
Mnoetmont	Yield	t/ha	ERC %	cane	TER	:/ha
TTER MILETIC	P	lr	. P.	. 1 R	P	lR
Control	162,73	166,75	11,76	12,93	19,16	21,56
1% inoculated seedcane	162,65	160,50	11,89	13,28	19,31	21,31
5% " "	158,14	163,08	11,92	13,22	18,82	21,54
10% " "	167,18	153,53	11,56	12,88	19,33	19,77
20% " "	158,96	161,12	12,25	13,47	19,50	21,68
50% " "	155,22	152,65	12,02	13,03	18,61	19,90
75% " "	152,72	140,08	11,87	12,89	18,00	18,04
100% " "	161,97	132,65	11,55	13,08	18,72	17,31
L.S.D. P=0,05	N.S.	19,70	N.S.	N.S.	N.S.	2,43
P=0,01	N.S.	26,82	N.S.	N.S.	N.S.	3,31
Trial mean	159,95	153,80	11,85	13,10	18,93	20,14
S.E. mean +	4,18	6,70	0,36	0,22	0,45	0,83
C.V. %	5,22	8,71	6,02	3,39	4,71	8,21

In spite of the differences in whip counts in the plant crop, there were no significant yield effects induced by the treatments. In the first ration a progressive decline was evident in those treatments with more than 35 000 whips/ha, i.e. the treatment established with 50% or more inoculated seedcene.

It was hoped that a low level of infection would be maintained in the control

3./ treatment

2.

treatment to give a wider range of smit levels in the ration, and thus enable a smut/yield relationship to be established. This was not possible, however, due to the high levels of smut incidence in the ration orop.

KEC/Oot. 180.

SOUTH AFRICAN SUGAR INDUSTRY AGRONOMISTS' ASSOCIATION

• • • •				
Title:	LEVE	S OF SMUT INFECT	ION 3300/44	· · ·
TERMINAL REPORT				
Cat No.:	1193			
<u>Object</u> :	To determin smut infect	e the effect on y ion.	ield of different le	vels of
Planted :	8th Septemb	er, 1978.	•	· .
<u>Terminated</u> :	18th Septem	ber, 1981, after	the second ratoon cr	op.
Harvest dates & a	ges :	Harvest	Age	
	P	7.9.79	12,0 months	
	1R	9.9.80	12,1 "	
	2R	18.9.81	12,3 "	
Location :	ZSA Experim	ent Station, Kudu	Block H6-9.	
Soil Type :	PE.1 sendy	clay loam derived	from gneiss.	
<u>Design</u> :	Randomised	blocks, 4 replica	tions	•
Variety/spacing :	NCo 376 in	1,5m rows.		
Fertiliser : (kg/	'ha)	<u>N</u> P	205 K20	
	P	120	100 60	
	1R ·	180	100 60	
· Andreas and a	2R	180	100 60	
Irrigation &		Irrig. (mm)	Rain (mm)	
Rainfell :	P	880	707	
	18	968	774	· ·
	2R	880	909	
Treatment : A r	range of 8 smut 1	ovels defined in	terms of percentage	smut-
inf 100	Sected seedcane a W infected seedc	t planting, viz. ane.	0; 1; 5; 10; 20; 50;	75; and
Conduct : (a)	The defined su seedcane and E prescribed rat	ut levels were ap ayleton (triadime ios.	plied by planting in fon)-treated seedca	oculated ne in the
(b)	Inoculated see iately before	dcane was dipped planting.	in a fresh smut spor	e immed-

- (c) Bayleton 25% E.C. was used at a concentration of 0,025% (250 ppm) a.i. as a one-minute cold-water dip.
- (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (immune to smut).

RESULTS

(a) <u>Smut incidence</u>. Recorded whip counts in the three crops from plant to second ration inclusive were as follows:-

	Smut whips/ha					
1 reatment	Р	1R	2R			
Control 1% inoculated seedcane 5% " " 10% " " 20% " " 50% " " 75% " " 100% " "	778 778 2 056 2 778 3 972 14 833 33 972 29 167	27 583 23 583 34 889 29 611 34 472 61 639 90 611 91 056	39 444 55 278 56 944 61 389 63 972 81 000 113 417 99 833			
Trial mean	11 042	49 243	71 410			

The method used was successful in creating a wide range of smut infection levels in the plant crop. Smut whips were rogued from the control treatment only, and the increase in infection in the ratoons was thus more pronounced than would normally be experienced. Treatment effects were still evident in the second ratoon, although differences were small between the four treatments from 1% to 20% infected seedcane inclusive.

(b) <u>Yield and quality effects</u>. Relevant data is given in the attached table.

In the plant crop there were no significant yield or quality effects induced by the treatments, in spite of the differences in whip counts. In the ratoons a progressive yield decline was evident in those treatments established with 50% or more inoculated seedcane. The yield drop was most marked in the first ratoon, with a loss of over 4 t/ha ERC, whereas in the second ratoon it was only 2 t/ha ERC and was not significant.

There was no direct relation between yield and whip counts, probably because the latter were terminated early in the plants cycle and they did not provide a true reflection of smut infection levels. In the first ratoon, for example, yields dropped in those treatments with more than 35 000 whips/ha, whereas in the second ratoon the yield drop only occurred when the whip counts reached 81 000/ha.

3./ (c)

(c) <u>Stalk counts</u>. Stalk population levels in the three crops were as follows:-

man a that and a	Stalks/ha x 10-3					
Treatments	Р	1R	2R -	Mean		
Control 1% inoculated seedcane 5% " " 10% " " 20% " " 50% " " 75% " " 100% " "	157,3 150,1 154,0 154,5 154,5 157,3 155,8 154,0	152,8 146,5 150,9 148,6 151,4 145,1 138,7 136,2	153,5 151,2 14 5 ,8 156,3 152,3 148,8 134,3 141,4	154,5 149,3 150,2 153,1 152,7 150,4 142,9 143,9		
Means	154,7	146,3	148,0	149,7		

Stalk populations were unaffected by treatments in the plant crop, but in the rations there was evidence of reduced stalk counts at high smut incidence levels.

CONCLUSIONS

Although results showed that yield losses occurred at high smut infection levels, they did not reveal a simple relationship between yield and whip counts. Whereas the latter may provide a satisfactory means of comparing treatment effects, they cannot be expected to give an absolute index of infection level, particularly when lodging is severe and recording has to be stopped as early as at 6 months of age.

KEC/Nov. '81 rw

3300/44 LEVELS OF SMUT INFECTION

HARVEST DATA - PLANT TO SECOND RATOON CROP

m	CANE YIELD t/ha			ERC % CANE			TERC/ha					
Ireatments	Р	1 R	2R	Mean	Р	1R	2 R	Mean	Р	1R	2R	Mean
Control 1% inoculated seedcane 5% " " 10% " " 20% " " 50% " " 50% " " 100% " "	162,73 162,65 158,14 167,18 158,96 155,22 152,72 161,97	166,75 160,50 163,08 153,53 161,12 152,65 140,08 132,65	136,20 140,56 139,12 146,11 143,51 141,10 130,71 127,50	155,23 154,57 153,45 155,61 154,53 149,66 141,17 140,71	11,76 11,89 11,92 11,56 12,25 12,02 11,87 11,55	12,93 13,28 13,22 12,88 13,47 13,03 12,89 13,08	13,50 13,34 13,36 13,47 13,43 13,55 13,05 13,33	12,66 12,84 12,83 12,64 13,05 12,87 12,60 12,67	19,16 19,31 18,82 19,33 19,50 18,61 18,00 18,72	21,56 21,31 21,54 19,77 21,68 19,90 18,04 17,31	18,13 18,76 18,55 19,70 19,27 19,13 17,07 17,08	19,62 19,79 19,64 19,60 20,15 19,21 17,70 17,70
L.S.D. P=0,05 P=0,01	N.S. N.S.	19,70 26,82	N.S. N.S.		N.S. N.S.	N.S. N.S.	N.S. N.S.	-	N.S. N.S.	-2,43 3,31	N.S. N.S.	-
Trial mean S.E. mean ± C.V.%	159,95 4,18 5,22	153,80 6,70 8,71	133,80 4,21 6,10	150,62 _ _	11,85 0,36 6,02	13,10 0,22 3,39	13,36 0,22 3,35	12,77	18,93 0,45 4,71	20,14 0,83 8,21	18,46 C,69 7,52	19,18 - -

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SOUTH AFRICAN SUGAR INDUSTRY AGRONOMISTS' ASSOCIATION

Title:	· LEVELS OF	SMUT INFE	CTION 3300)/44	
TERMINAL REPORT					
Cat No.:	1193				
<u>Object</u> :	To determine the smut infection.	effect o	n yield of	different	levels of
<u>Planted</u> :	8th September, 1	1978.		•	
Terminated :	18th September,	1981, aft	er the sec	ond ratoon	crop.
Earvest dates & ages	: P 1R 2R	<u>Hervest</u> 7.9.79 9.9.80 18.9.81	12 12 12	<u>Age</u> ,0 months ,1 " ,3 "	
Location :	ZSA Experiment S	Station, Ku	udu Block I	86-9.	
Soil Type :	PE.1 sandy clay	loam deriv	ved from g	neiss.	
Design :	Randomised block	s, 4 repl	ications		
<u>Variety/spacing</u> :	NCo 376 in 1,5m	rows.			
Fertiliser : (kg/ha)		N	P205	K20	
	P	120	100	60	
	1 R	180	100	60	
	2R	180	100	60	
Irrigation &		Irrig. (m	<u>n</u>)	Rain (m	1)
Reinfell :	Р	880	-	707	
	1 R	968		774	
	2R	880		909	
<u>Treatment</u> : A range infecte 100% in	of 8 smut levels d seedcane at pla fected seedcane.	defined inting, viz	in terms of z. 0; 1; 5;	f percentag ; 10; 20; 5	;e smut- 0; 75; and
Conduct : (a) Th	e defined smut le	vels were	applied by	planting	inoculated

(a) The defined smut levels were applied by planting inoculated seedcane and Bayleton (triadimefon)-treated seedcane in the prescribed ratios.

- (b) Inoculated seedcane was dipped in a fresh smut spore immediately before planting.
- (c) Bayleton 25% E.C. was used at a concentration of 0,025%
 (250 ppm) a.i. as a one-minute cold-water dip.
- (d) Nett plots were separated by a smut-free barrier of three rows of N 52/219 (immune to smut).

RESULTS

(a) <u>Smut incidence</u>. Recorded whip counts in the three crops from plant to second ration inclusive were as follows:-

		Smut whips/ha					
reatment			Р	1 R	2R		
Control 1% in 5% 10% 20% 50% 75% 100%	noculat n n n n n	ed seedcane " " " " " " "	778 778 2 056 2 778 3 972 14.833 33 972 29 167	27 583 23 583 34 889 29 611 34 472 61 639 90 611 91 056	39 444 55 278 56 944 61 389 63 972 81 000 113 417 99 833		
Trial n	ean		11 042	49 243	71 410		

The method used was successful in creating a wide range of smut infection levels in the plant crop. Smut whips were rogued from the control treatment only, and the increase in infection in the ratoons was thus more pronounced than would normally be experienced. Treatment effects were still evident in the second ratoon, although differences were small between the four treatments from 1% to 20% infected seedcane inclusive.

(b) <u>Yield and quality effects</u>. Relevant data is given in the attached table.

In the plant crop there were no significant yield or quality effects induced by the treatments, in spite of the differences in whip counts. In the ratoons a progressive yield decline was evident in those treatments established with 50% or more inoculated seedcame. The yield drop was most marked in the first ratoon, with a loss of over 4 t/ha ERC, whereas in the second ratoon it was only 2 t/ha ERC and was not significant.

There was no direct relation between yield and whip counts, probably because the latter were terminated early in the plants cycle and they did not provide a true reflection of smut infection levels. In the first ratoon, for example, yields dropped in those treatments with more than 35 000 whips/ha, whereas in the second ratoon the yield drop only occurred when the whip counts reached 81 000/ha.

3./ (c)

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(c) <u>Stalk counts</u>. Stalk population levels in the three crops were as follows:-

Treatments			Stalks/ha x 10- ³					
			Р	1R	2R	Mean		
Contro 1% ii 5% 10% 20% 50% 75% 100%	l noculate " " " " " "	d seedcane n n n n n n n	157,3 150,1 154,0 154,5 154,5 157,3 155,8 154,0	152,8 146,5 150,9 148,6 151,4 145,1 138,7 136,2	153,5 151,2 14 5 ,8 156,3 152,3 148,8 134,3 141,4	154,5 149,3 150,2 153,1 152,7 150,4 142,9 143,9		
Means			154,7	146,3	148,0	149,7		

Stalk populations were unaffected by treatments in the plant crop, but in the ratoons there was evidence of reduced stalk counts at high sout incidence levels.

CONCLUSIONS

Although results showed that yield losses occurred at high smut infection levels, they did not reveal a simple relationship between yield and whip counts. Whereas the latter may provide a satisfactory means of comparing treatment effects, they cannot be expected to give an absolute index of infection level, particularly when lodging is severe and recording has to be stopped as early as at 6 months of age.

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3300/44 LEVELS OF SMUT INFECTION

HARVEST DATA - PLANT TO SECOND RATOON CROP

Treatments	CANE YIELD t/ha				ERC % CANE				TERC/ha			
	Р	1R	2R	Mean	P.	1R	2 R	Mean	P	1R	2R	Mean
Control 1% inoculated seedcane 5% " " 10% " " 20% " " 50% " " 75% " " 100% " "	162,73 162,65 158,14 167,18 158,96 155,22 152,72 161,97	166,75 160,50 163,08 153,53 161,12 152,65 140,03 132,65	136,20 140,56 139,12 146,11 143,51 141,10 130,71 127,50	155,23 154,57 153,45 155,61 154,53 149,66 141,17 140,71	11,76 11,89 11,92 11,56 12,25 12,02 11,87 11,55	12,93 13,28 13,22 12,88 13,47 13,03 12,89 13,08	13, 50 13, 34 13, 36 13, 47 13, 43 13, 55 13, 05 13, 33	12,66 12,84 12,83 12,64 13,05 12,37 12,60 12,67	19,16 19,31 18,82 19,33 19,50 18,61 18,00 18,72	21,56 21,31 21,54 19,77 21,68 19,90 18,04 17,31	18,13 18,76 18,55 19,70 19,27 19,13 17,07 17,08	19,62 19,79 19,64 19,60 20,15 19,21 17,70 17,70
L.S.D. P=0,05 P=0,01	N.S. N.S.	19,70 26,82	N.S. N.S.	-	N.S. N.S.	N.S. N.S.	N.S. N.S.	-	N.S. N.S.	2,43 3,31	ा.s. स.s.	-
Trial mean S.E. mean ± C.V.%	159,95 4,18 5,22	153,80 6,70 8,71	139,80 4,21 6,10	150,62	11,85 0,36 6,02	13,10 0,22 3,39	13,36 0,22 3,35	12,77 - -	18,93 0,45 4,71	20,14 0,83 8,21	18,46 C,69 7,52	19,18

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