

SOUTH AFRICAN SUGAR INDUSTRY

AGRONOMISTS' ASSOCIATION

2010/6 OPEN QUARANTINE DISEASE EVALUATION

Catalogue No.: 1239

Object : Bulking of 25 Hawaiian introductions in open quarantine, following closed quarantine restrictions at the Plant Protection Research Institute in Salisbury, coupled with preliminary smut susceptibility evaluation and recording of the incidence of other diseases.

This crop : Plant Age : 10,5 months (16.11.79 to 6.10.80)

Location : Chiredzi Research Station, open quarantine nursery.

Soil type : PE.1 sandy clay loam derived from gneiss

Design : Single un-replicated rows of 12m, with all new introductions planted next to infection rows of NCo 376, the seedcane of which was dipped in a smut spore suspension before planting.

Conduct : Records were confined to disease observations only, and no yield data or growth measurements were recorded. After the plant crop harvest, seedcane was used to establish Smut Susceptibility Trial 3300/52.

RESULTS

Relevant disease records are presented in the attached table.

(a) Smut incidence. Relatively few of the entries showed severe susceptibility in the plant crop, with the highest recorded rating of 7 being attained by only 3 Hawaiian varieties in addition to NCo 376. Most of the varieties which remained free of the disease can be expected to prove susceptible when smut incidence increases in the first ratoon.

(b) Leaf scald. Moderate susceptibility was recorded in only two varieties, with all others remaining free.

KES/Nov 80.

rw.

2010/6

OPEN QUARANTINE DISEASE EVALUATIONDISEASE RECORDS - PLANT CROP

Variety	Smut whips/ha	Smut Rating	Leaf scald infected stalks/ha
H 61-1721	6 111	7	0
H 61-3145	3 889	6	0
H 63-599	556	4	0
H 63-4342	556	4	0
H 64-848	556	4	0
H 65-1488	6 667	7	0
H 65-7193	0	0	0
H 66-2959	12 222	7	0
H 66-3232	0	0	0
H 66-8912	2 778	6	0
H 68-93	0	0	0
H 68-3472	0	0	0
H 69-2429	556	4	0
H 69-5123	0	0	0
H 70-2665	0	0	0
H 70-3339	0	0	5 000
H 70-5145	1 111	5	0
H 70-6211	556	4	0
H 71-1075	0	0	0
H 71-4205	1 111	5	6 111
H 71-4949	0	0	0
H 72-6317	0	0	0
H 73-852	0	0	0
H 73-4872	0	0	0
H 73-6136	556	4	0
NCo 376	5 556	7	0
NCo 376 *	22 778	8	-

* Mean of infection rows

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TERMINAL REPORT :

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Planted : 16.11.79

Terminated : 5.5.81

<u>Harvest Date & Ages :</u>	<u>Harvest</u>	<u>Age</u>
P.	6.10.80	10,6 months
IR	5.5.81	7,0 months.

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RESULTS : Relevant disease records are presented in the attached table.

(a) Smut incidence. In the plant crop few varieties were severely affected by smut and the highest rating of 7 was observed on only three entries. However, smut incidence increased considerably in the first ratoon when 14 varieties had ratings of 7 or more. The only variety which escaped the disease in both plant and first ratoon crops was H 68-93.

(b) Leaf scald. During the plant crop only 2 entries showed symptoms of leaf scald disease, but 13 were infected during the first ratoon crop. The highest percentages of stool infection appeared in H 71-4919, H 64-848 and H 63-599.

2./ (c)

2010/6.

(c) Rust was recorded during the first ratoon crop, when leaf symptoms were recorded on 13 varieties of whom 9 were severely infected. These were as follows :-

Severe : H 66-2959, H 66-3232, H 68-3472
H 70-2665, H 70-3339, H 70-5145
H 71-4205, H 72-6317, H 73-852

Moderate: H 61-3145, H 69-5123, H 70-6211, H 73-4872

PSM/June '81

rw

DISEASE RECORDS : PLANT AND FIRST RATOON CROPS

VARIETIES	Smit whips per ha.		Smit rating		Leaf scald % stool infection	
	P	1R	P	1R	P	1R
H 61-1721	6 111	63 888	7	9	0	8
H 61-3145	3 889	4 444	6	6	0	0
H 63-599	556	1 111	4	5	0	10
H 63-4342	556	7 222	4	7	0	6
H 64-848	556	16 111	4	8	0	13
H 65-1488	6 667	36 111	7	9	0	8
H 65-7193	0	2 778	0	6	0	0
H 66-2959	12 222	114 999	7	9	0	0
H 66-3232	0	64 999	0	9	0	6
H 66-8912	2 778	52 777	6	9	0	4
H 68-93	0	0	0	0	0	0
H 68-3472	0	13 889	0	7	0	0
H 69-2429	556	556	4	4	0	6
H 69-5123	0	2 778	0	6	0	8
H 70-2665	0	1 111	0	5	0	0
H 70-3339	0	16 667	0	8	6	4
H 70-5145	1 111	9 444	5	7	0	0
H 70-6211	556	3 333	4	6	0	0
H 71-1075	0	556	0	4	0	0
H 71-4205	1 111	11 111	5	7	6	2
H 71-4919	0	30 000	0	8	0	19
H 72-6317	0	1 666	0	5	0	0
H 73-852	0	2 222	0	6	0	0
H 73-4872	0	13 889	0	7	0	2
H 73-6136	556	22 778	4	8	0	0
MOo 376	5 556	43 333	7	9	0	0
Means	1 645	20 684	-	-	0,5	3,7

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