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RELATIVE EFFICACY OF TWO METHODS OF SCREENING OF SUGARCANE CLONES FOR RED ROT RESISTANCE

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Sugarcane clones (20 nos.) were screened for red rot resistance following standard plug method and Spore suspension method of inoculation. Spore suspension method was found to be better in assessing the reactions.

INTRODUCTION

Red rot, caused by *Colletotrichum falcatum* Went, is the most serious and widespread disease of sugarcane in West Bengal. Serious epiphytotics of the disease have occurred from time to time in the State and due to its ravages many popular commercial varieties (e.g., Co. 312, B.O. 11, Co. 313, Co. 419, Co. 453 etc.) have been thrown out of cultivation. The recurrence of such epiphytotics underlines the necessity of continuing the testing of the new sugarcane clones against red rot pathogen before their release for general cultivation to the growers. The inoculation of the Standing canes is usually done by the Standard plug Method (Chona, 1954) and the varieties are rated by the linear lesion length which is taken as the sole criterion. Presently, the process is supplemented by the spore suspension Method (Praksasam *et al.*, 1971) and graded by the Symptomatic Method which is based on the key suggested by Srinivasan and Bhat (1961). In this method disease syndrome viz , condition of tops, lesion width, occurrence of white spots and nodal transgression are taken into consideration. The reaction of 20 clones assessed by both the methods is reported herein

MATERIALS AND METHODS

20 clones including pathological and agronomical standards were planted in 10 m. rows 1 m. apart employing 40 three-bud setts per clone. About 20 canes of each clone at the age of six months were inoculated by each method using 10-day old pure culture of a light coloured virulent isolate, isolated from infected canes of Co. 997 at Bethuadahari. Observations on the disease development were recorded 4 months after inoculation by spliting open the inoculated canes longitudinally and the clones were rated by the two methods (Table 1).

RESULT AND DISCUSSION

Data in Table 1 indicate that of the 20 clones assessed by the Linear lesion Method only 2 clones were observed to be susceptible to red rot while 9 clones were rated as resistant and 9 as moderately resistant. But, by Spore suspension method out of 20 clones 3 reacted as resistant and 7 as moderately resistant. The remaining 10 clones varied in their degree of susceptibility of which 4 showed moderately susceptible, 4 susceptible and 2 highly susceptible reaction.

Table 1. *Relative efficacy of two methods of screening of sugarcane clones to red rot*

Clone	1982 - 83		1983 - 84	
	Disease reaction*			
	Standard plug Method	Spore suspension Method	Standard plug Method	Spore suspension Method
Co. J. 64	R	MR	R	MR
Co. J. 70	R	R	R	R
Co. 1132	S	HS	S	HS
Co. 1148	R	R	R	R
Co. 6315	S	HS	S	HS
Co. 7201	R	MR	R	MR
Co. 7212	MR	MS	MR	MS
Co. 7801	R	R	R	R
Co. B. 7209	MR	S	MR	S
Co. B. 7401	R	MR	R	MR
Co. B. 7402	MR	S	MR	S
Co. B. 7438	MR	MR	MR	MR
Co. B. 7501	R	MR	R	MR
Co. B. 7503	MR	MS	MR	MS
Co. B. 7514	MR	S	MR	S
Co. B. 7711	MR	S	MR	S
Co. B. 7715	R	MR	R	MR
Co. B. 7716	MR	MS	MR	MS
Co. C. 671	MR	MS	MR	MS
Co. S. 770	R	MR	R	MR

* R — Resistant ; MR — Moderately resistant ; MS — Moderately susceptible ; S — Susceptible ; HS — Highly susceptible.

It is clear from the observations in Table 1 that in contrast to Standard plug Method of inoculation and Lesion length Method of grading there was a shift in the reaction of grading clones by one or two stages towards susceptibility when they were inoculated by the Spore suspension Method and graded by the Symptomatic Method. Hence, Spore suspension Method appears to be

more rigorous than the Standard plug Method to know the inherent reaction of a clone to red rot disease in a more dependable manner.

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