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MALE STERILITY IN *HEVEA BRASILIENSIS* (WILLD. EX ADR. DE JUSS.) MUELL. ARG.

C. K. Saraswathyamma, A. O. N. Panikkar, M. R. Sethuraj and J. Licy

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GT 1 is a male sterile clone of *Hevea brasiliensis* (Willd. ex Adr. de Juss.) Muell. Arg. Hybrids of two cross combinations involving this clone as the female parent and RRIC 100 and RRII 105 as the male parents were studied. All the male flowers produced on clones established from the F1 progenies were totally devoid of fertile pollen, indicating cytoplasmic male sterility.

Key words – *Hevea brasiliensis*, Clones, Tetrad, Pollen, Cytoplasmic male sterility.

C. K. Saraswathyamma (corresponding author), A. O. N. Panikkar; M. R. Sethuraj and J. Licy, Rubber Research Institute of India, Kottayam – 686 009, India.

INTRODUCTION

Hevea brasiliensis, the Para rubber tree, belonging to the family Euphorbiaceae is monoecious. Female flowers are limited in number and are restricted to the tip of the panicles. The male flowers are far more numerous. Male sterility has been reported in the clone GT 1 by Ramaer (1935), Majumder (1964) and Leconte and Nicolas (1985). The Rubber Research Institute of India has also reported male sterility in the clone GT 1 (Anon. 1983). Further, male sterility has also been observed in two other clones Ch 2 and D 15.

MATERIALS AND METHODS

GT 1 is a primary clone evolved in Indonesia by selection in a seedling population of Gondang Tapen estate. Two cross combinations involving GT 1 as the female parent and the fertile clones RRIC 100 and RRII 105 as male parents were chosen for the study. The cross combination between two fertile clones RRII 105 and PR 107 was used as control. Clones were established through vegetative multiplication from seven resultant progenies, three belonging to GT 1 x RRIC 100 and four to GT 1 x RRII 105. Two clones were also similarly established from the progenies of the control (RRII 105 x PR 107). Early flowering was induced (Saraswathyamma, 1975) in these materials, when the budgrafts were of two years' growth. Necessary prophylactic measures were carried out to protect the flowers. Male flowers at the appropriate stages were collected and fixed in modified Carnoy's fluid (3 : 1 : 1) for cytological study. Pollen fertility was studied employing fresh flowers and anthers were squashed in 1 : 1 glycerine – acetocarmine.

RESULTS AND DISCUSSION

All the ring-barked plants showed flower initiation after nine months from the time of ring-barking. The male flowers of the F_1