Indian J. Nat. Rubb. Res. 2 (1) : 61 67, 1989

STUDIES ON IMPROVING FRUIT SET FOLLOWING HAND POLLINATION IN *HEVEA BRASILIENSIS* (WILLD. EX ADR. DE JUSS.) MUELL. ARG.

Kavitha K. Mydin, M. A. Nazeer, J. Licy, Y. Annamma and A. O. N. Panikkar

Kavitha K. Mydin., Nazeer, M. A., Licy, J., Annamma, Y. and Panikkar, A.O.N. (1989). Studies on improving fruit set following hand pollination in *Hevea brasiliensis* (Willd. ex Adr. de Juss.) Muell. Arg. Indian J. Nat. Rubb. Res. 2(1) : 61–67.

An attempt was made to increase fruit set following hand pollination in *Hevea*. Nine treatments comprising modifications of the conventional hand pollination procedure and methods to supplement nutrients and growth regulators were imposed during three flowering seasons. Enclosing panicles in butter paper covers of suitable size following hand pollination was found to give significantly high final fruit set than the conventional method of sealing hand pollinated flowers with cotton wool and latex. The effect of different treatments on fruit set has been discussed.

Key words :– *Hevea*, Hand pollination, Fruit set.

Kavitha K. Mydin (for correspondence), M. A. Nazeer, J. Licy, Y. Annamma and A. O. N. Panikkar, Rubber Research Institute of India. Kottayam–686 009, India.

INTRODUCTION

The *Hevea* tree produces flowers in abundance, but even in a good flowering season, not more than three per cent of the female flowers develop into fruits (Maas, 1919; Attanayake and Sumeda, 1984). Under artificial pollination also fruit set is equally low. Several references have been made to the problem of low fruit set in *Hevea* (Warmke, 1951; Rao, 1961; Gandhimathi and Yeang, 1984). The low recovery of fruits at the mature stage poses a serious hindrance to *Hevea* breeding efforts, necessitating considerably large number of hand pollinations every year.

The low fruit set in *Hevea* may be attributed to various factors. Leconte *et al*(1984) obtained encouraging results on fruit set following use of growth regulators like Naphthalene acetic acid (NAA) and Gibberellic acid-3 (GA 3). Gandhimathi and Yeang (1984) suggested a new method of hand pollination to overcome the apparent insufficiency of pollen as a possible cause for low fruit set in *Hevea*. *In vivo* studies (Majumder, 1964) showed that addition of 0.01 per cent boric acid to sugar media markedly increased the percentage of pollen germination and length of the resultant pollen tubes in *Hevea*. Based on these observations, the present study was undertaken at the Rubber Research Institute of India Experiment Station, Kottayam, during the flowering seasons of 1986, 1987 and 1988 with a view to overcoming the problem of low fruit set by altering the conventional method of hand pollination.

EXPERIMENTAL

Nine treatments comprising methods to supplement growth regulators and nutrient media were employed. The method of Gandhimathi and Yeang (1984) to overcome insufficiency of pollen was also attempted. Another method to minimise injury to floral