Indian Journal of Natural Rubber Research, **13**(1&2) : 114-117, 2000

PROPAGATION OF THE COVER CROP *MUCUNA BRACTEATA* BY MODIFIED COMPOUND LAYERING

Cover crops are established and maintained in rubber plantations for the purpose of conserving the soil, improving or maintaining the soil structure, fertility, water holding capacity and other soil physical properties (Soong and Yap, 1976; Krishnakumar, 1989; Samarappuli, 1992; Philip *et al.*, 1996, Rubber Board, 1999). Leguminous ground cover, besides contributing much to the nitrogen requirement (Shorrocks, 1965), helps in better growth of rubber plants during immature phase and aids in attaining higher yield (Watson *et al.*, 1964; Yogaratnam *et al.*, 1984).

Mucuna bracteata, a wild legume from Tripura has been observed to be drought resistant, shade tolerant, profusely growing and capable of fixing a good quantity of atmospheric nitrogen (Kothandaraman *et al.*, 1987; 1989). Besides suppressing the growth of weeds, this cover crop has the advantage of non-palatability to cattle. Even though there is vigorous vegetative growth, unlike in North East India flowering and seed production in *Mucuna* is rare in the traditional rubber growing regions in South India. Even if flowering occurs, seed set does not follow. Fruit set could not be achieved even after hand pollination and growth regulator treatment. Hence this plant is propagated through cuttings, with only limited success (Kothandaraman *et al.*, 1987; Rubber Board, 1999). Hence efforts were made to standardize a suitable technique to propagate *Mucuna* sp. by modified compound layering.

Compound (multiple) layering or sepentine layering has been practised as a common technique to propagate a number of plant species (Hartman and Kester, 1972; Macdonald, 1986). In the traditional method of compound layering, flexible stems are covered with soil in several places, preferably the nodal portions, so that they are alternatively covered and exposed over their entire length. When the roots are fully developed near the nodes, portions of the stem are severed from the mother plant and each allowed to grow as a separate plant.

An attempt was initiated at the Rubber Research Institute of India, Kottayam during the monsoon season of 1995 to propagate *Mucuna bracteata* by modified compound layering. Flexible creeping stems of field grown *Mucuna bracteata* were used for the experiment. Instead of covering the nodes with soil, 100 points each of either successive or alternative nodes of flexible stems were compound layered in small polybags filled with soil, well decomposed cow dung and sand mixture (6:3:1). The root system developed fully in 30-45 days after layering. The rooted layers were severed from the mother plant for further establishment. The experiment was repeated two times during the subsequent monsoon seasons. In another experiment compound layering (50 points) was carried out during the summer months of April-May by providing irrigation and shade.

A high success rate of 90 per cent establishment in polybag was observed