

EFFECT OF CONTROLLED RELEASE FERTILIZERS ON GROWTH AND LEAF NITROGEN STATUS OF IMMATURE RUBBER

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The growth and leaf nitrogen status of immature rubber (*Hevea brasiliensis*) trees (clone RRIF 105) which received 50 or 75 per cent of the recommended dose of N as NPK Mg tablets or 75 per cent as neem extract coated or neem cake mixed urea were comparable to those which received the full dose as prilled urea in two field experiments conducted in the central region of the traditional rubber growing tract of India, during 1994 to 1998. Single low dose of N applied as NPK Mg tablets was comparable to split doses of other fertilizers in terms of growth (girth) of the plants.

Key words: Controlled release fertilizers, Growth, *Hevea brasiliensis*, Leaf nitrogen, Immature rubber.

INTRODUCTION

Urea, the cheapest source of nitrogen fertilizer is highly soluble and often subjected to substantial loss through leaching and volatilisation. These losses contribute to the low efficiency of the fertilizer use by crops (Soong, 1973; Bronson and Mosier, 1991) and the contamination of ground water (Adetunji, 1994). The use of controlled release fertilizers is reported to reduce the loss of nutrients through leaching and run off, which helps to maintain the nutrients in the soil for a prolonged period (de Silva *et al.*, 1996). These features of controlled release fertilizers would thus lead to reduced frequency and lower rates of application with substantial savings in labour and time. Response to the application of controlled release fertilizers for rubber (*Hevea brasiliensis*) have been reported (Yusof *et al.*, 1995).

Among the sources of N, urea form was the best to support the growth and development of young rubber plants in pot culture (Karthikakuttyamma *et al.*, 1994). However, information on the effect of controlled release fertilizers on the field performance of immature rubber in India is limited. The objective of the present work was to study the effects of different controlled release fertilizers in comparison to conventional fertilizers on the growth and leaf nitrogen status of immature rubber trees.

MATERIALS AND METHODS

Two field experiments were laid out, one (Experiment 1) at the Central Experiment Station of the Rubber Research Institute of India at Chethackal, Parhanamthitta District, Kerala (longitude 9° 22'N, latitude 76° 50'E, 100 m above MSL) and the other