Indian Journal of Natural Rubber Research, 7 (2) : 120-125, 1994

RELATIVE EFFICIENCY OF MODIFIED UREA FERTILIZERS FOR YOUNG RUBBER PLANTS

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Karthikakuttyamma, M., Suresh, P.R., Mathew, M., Varghese, A., and Shyamala, V.K. (1994). Relative efficiency of modified urea fertilizers for young rubber plants. *Indian Journal of Natural Rubber Research*, 7 (2) : 120-125.

Different modified forms of urea, *viz.*, ureaform, neem extract, mixed urea, neem coated urea and neem cake mixed urea were compared along with prilled urea for their efficiency in the growth and development of young *Hevea* plants in a glass house experiment. A no nitrogen control was also included. The study revealed that ureaform is the best source of nitrogen with respect to growth and apparent recovery of applied N. All the modified forms were effective in increasing the root and shoot growth of the plants. When N is not applied, more than half of the total biomass is diverted for the development of roots. Similar trend was noticed in the case of N partitioning also. If N is applied a good share of it gets translocated to the leaves. Concentration of N in the leachate could be significantly reduced when urea is coated with neem. In all the forms, the maximum flux of N in leachate was observed at the 15th day after fertilizer application.

Key words: *Hevea brasiliensis*, Slow release fertilizer, Nitrogen, Dry matter partitioning, Apparent nitrogen recovery, Leaching loss.

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INTRODUCTION

In the establishment of rubber (*Hevea brasiliensis*) plantations, nitrogen is a vital nutrient during the early stages of growth (Shorrocks, 1965). Urea is the most widely accepted source of N fertilizer owing to its low unit cost in comparison to the others. The crop utilisation of N from applied urea is only about 50 per cent and the rest is lost in many ways. The option of applying fertilizers in small repeated doses to minimise losses is often not practical or economical. It would be quite appropriate to use slow release N technology for rubber plantations so as to ensure rational use of the fertilizer and for a better crop response. A considerable volume of data is available on the potential use of neem (*Azadiracta indica*) for increasing fertilizer use efficiency of urea (Bains *et al.*, 1971; Patil, 1972). It was considered worthwhile to explore the possibilities of using neem materials and other slow release N fertilizers for young rubber plants and an experiment was carried out to compare the effect of different modified forms of urea on growth. The effect of N on the development of various plant parts was also investigated.

MATERIALS AND METHODS

A pot culture experiment was conducted to compare the relative efficiency of prilled urea and modified forms of urea on the growth and development of young