

INTEGRATED NUTRIENT MANAGEMENT PRACTICES FOR YOUNG RUBBER IN TRIPURA, NORTH-EAST INDIA

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A field experiment was conducted during 2009-2015 at Taranagar, West district of Tripura to study the effect of integrated nutrient management practices on growth of young natural rubber plants (NR) and on soil chemical properties. Growth of NR (clone RRIM 600) was compared among the treatments comprising an absolute control, bio-inoculant alone, standard dose of chemical fertilizers and 25, 50, 75 and 100 per cent of the standard recommendation of N and P fertilizers in combination with bio-inoculants (BI). Though no significant improvement in girth was recorded during the initial two years of planting, increase in plant height was observed with the treatments 50 and 75 per cent of N and P in combination with bio-inoculants. Significant increase in girth was recorded from 3rd year onwards with the combined application of BI along with 50 or 75 per cent of N and P and the growth improvement was on par among the two levels. Application of BI alone was not sufficient to meet the nutrient demand of young rubber plants. A combination of 50 per cent of the standard recommendation of N and P together with the recommended dose of K and BI was effective in improving the growth of plants and improving the soil fertility with the added advantage of cost saving through the reduction of N and P fertilizer by 50 per cent of the recommended dose.

Key words: *Hevea brasiliensis*, Integrated nutrient management, Natural rubber, North-East India, Soil properties, Tripura

INTRODUCTION

The majority of natural rubber (*Hevea brasiliensis*) growing soils of North-East India in general, and Tripura in particular, are highly weathered, poor in fertility status and rich in low active kaolinite clay belonging to Alfisol or Ultisol order (Bhattacharya *et al.*, 2004). It is reported that growth and yield of natural rubber (NR) in North-East India is low in comparison to traditional NR growing regions of India (Reju *et al.*, 2001).

Proper fertilization is one of the key inputs to ensure healthy growth of NR trees and maintain the nutrient balance in NR plantation (Krishnakumar and Potty, 1992). Nutrient management of NR plants from their early growth stage is very important to reduce immaturity period *vis-à-vis* ensure sustained productivity during the yielding phase of the plantation. In many places, nutrient deficiency in NR growing soils was observed which could be due to application