EFFECT OF FERTILIZERS ON THE AVAILABILITY OF NUTRIENTS IN THE SOIL AND GROWTH AND YIELD OF MATURE RUBBER IN THE CENTRAL BRAHMAPUTRA VALLEY ZONE (CBVZ) OF ASSAM

R.P. Singh, M. Choudhury*, M. Joseph and N. Ashithraj***

Rubber Research Institute of India, Regional Research Station, Tura-794001, Meghalaya, India

*Rubber Research Institutes of India, Regional Research Station, Guwahati-781006 Assam, India

**Rubber Research Institutes of India, Kottayam-686009, Kerala, India

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A field experiment in mature rubber was conducted in a grower's field at Rampur village, Borgang, Sonitpur, Assam about 300 km away from Guwahati, the capital of Assam to study the response of mature rubber to inorganic fertilizers under the agro-climatic condition of Central Brahmaputra Valley Zone (CBVZ) of Assam using the clone RRIM 600. Girth and girth increment of rubber were significantly influenced by higher doses of fertilizers. Optimum levels of N, P and K for achieving the highest girth in mature rubber and improving the soil fertility was found to be 60:30:45 kg ha^{-1} yr^{-1}. Similarly, application of N, P and K significantly improved the yield and dry rubber content (drc). The highest yield (g $t^{-1}t^{-1}$) and drc (%) was recorded with 60:30:45 kg ha^{-1} yr^{-1}. Continuous application of fertilizers improved the soil fertility status.

Keywords: Dry rubber yield, Fertilizer response, Girth, Leaf nutrient concentration, North East India, Soil fertility

In India, rubber is traditionally grown in south-western parts, mostly in the states of Kerala, Kanyakumari district of Tamil Nadu and southern districts of Karnataka. However, due to the increased demand for natural rubber and non-availability of land in the traditional regions, rubber cultivation is now extended to north-eastern part of India. Soil in the north-eastern region is highly depleted and deficient mostly due to shifting cultivation practiced over several years (Datta *et al.*, 2001) and leaching of cations under high rainfall (Talukdar, 1997). The poor nutrient status of rubber growing soils of Assam has also been reported by many workers (Krishnakumar and Potty, 1989; Singh, *et al.*, 1999; 2010; Mandal *et al.*, 2000 and Choudhury *et al.*, 2001). Poor soil fertility results in inadequate plant growth and crop yield in this region compared to

Correspondence: R. P. Singh (Email: ramphoolsingh@rediffmail.com)