

## INFLUENCE OF NPK FERTILIZERS ON EARLY GROWTH OF RRII 400 SERIES RUBBER CLONES IN TRIPURA

Debasis Mandal, Bhaskar Datta, Tapan Kumar Pal and Sushil Kumar Dey

Regional Research Station, Rubber Research Institute of India, Agartala-799006, Tripura, India

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Growth performance of high yielding RRII 400 series clones of rubber (*Hevea brasiliensis*) viz. RRII 417, RRII 429 and RRII 430 with RRIM 600 as the check clone, was studied during 2004-2011 under the agro-climatic conditions of Tripura. Influence of higher doses of NPK fertilizers on growth of these clones during immature phase of plantation was also investigated. At the end of the seventh year of planting, the clone RRII 429 registered highest girth (51.5 cm) followed by RRIM 600 (49.6 cm) and the clone RRII 417 (47 cm) was the lowest. Highest tappareability was observed for the clone RRII 429 (67.1%), while on other three clones it ranged from 47.7 to 60.1 per cent. The clone RRII 429 showed significant response towards application of NPK fertilizers. At the end of sixth year of planting, the clone RRII 429 registered a mean girth of 50.6 cm and 73.3 per cent plants attained tappable girth when 150 per cent of recommended NPK doses were applied. The other three clones required seven years or more to attain a mean girth of 50 cm and 70 per cent tappareability. The result showed that immaturity period of RRII 429 could be reduced by six months to one year by applying higher doses of NPK. Application of higher doses of NPK fertilizers in soils showed a significant improvement in organic carbon (OC) and available phosphorus, particularly in the surface layer; however a gradual decline in available potassium-balance was recorded in rubber soils indicating potassium vulnerability of soils under rubber in Tripura.

**Keywords:** Fertilizer dose, Growth, Rubber clones, Soil fertility, Tappareability, Tripura

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### INTRODUCTION

In India, rubber is traditionally grown in south-western parts, mostly in the states of Kerala and Tamil Nadu (Kanyakumari district). However, due to the increased demand for natural rubber and non-availability of land in the traditional regions, rubber cultivation has been extended to north-eastern states of India, particularly in the state of Tripura (20-28°N Latitude) where large scale plantations were established,

mostly by small holders, from 1980s. Majority of the soils under rubber in Tripura were once subjected to shifting cultivation, which essentially involves burning of organic matter. As a result, organic carbon content of the soils is low and they are poor in nutrient status. Again due to high rainfall, essential cations are leached out, which further reduces the soil fertility. Because of this reason, plant growth and crop yield in this location are low in comparison to the