ABSTRACT

Hevea brasiliensis, a native of the Amazon basin, has been planted commercially in India since the early 1900's. To meet the ever increasing demand of natural rubber, plantations are being raised in non-traditional regions. Tripura in the N.E. India is in the forefront. Specific agromanagement practices is needed to raise this crop in this environment which is different from that in the traditional rubber growing region. Keeping this in view, the present investigation was undertaken at RRS, Tripura to gather precise information on the growth of young *Hevea* as influenced by soil moisture and nutrients during different seasons. The various growth parameters studied showed that higher growth was obtained when soil moisture availability was high (-0.03 MPa), the influence being more pronounced during winter period. Different levels and combination of nutrients also influenced the growth. Higher levels of phosphorus in particular was observed to maintain a higher growth rate during winter. In general, NPK application at 40 kg ha^{-1} with irrigation to provide a soil moisture tension of -0.03 MPa, was optimum for the growth of young rubber plants.

An experiment was taken up in the mature phase in a nine year old planting at RRS, Tripura to monitor the influence of irrigation and selected nutrient doses on the yield and yield components. Results of the study showed that irrigation at fortnightly interval maintaining a soil moisture tension in the range of -0.03 to -0.10 MPa along with NPK

application of 40 kg ha^{-1} has significantly increased the yield of latex. The influence of irrigation on yield of latex was more pronounced during the winter period (Oct-Jan).

Interrelationship of yield, yield components and meteorological parameters was worked out. It was observed that yield of latex is related to the yield components and weather. To understand the direct and indirect effects of yield components and meteorological parameters on yield a path analysis was performed. Correlation analysis pointed out that PI, latex sugar concentration, T.max, RH, WS, SSD and rain are the primary factors affecting yield. Path analysis however showed that PI, SSD and evaporation are the primary factors directly affecting yield. Fifty six per cent variability in yield was explained by factors considered in the study.