

PERFORMANCE OF SOME *HEVEA* CLONES UNDER THE CHANGING CLIMATE OF SUB-HIMALAYAN WEST BENGAL

Gitali Das, R. S. Singh¹, S. Meti² and D. Chaudhuri³

Rubber Research Institute of India, Rubber Board, RES, Jalpaiguri, West Bengal, India

¹ Rajendra Prasad Agriculture University, Pusa, Samastipur, Bihar, India

² Rubber Research Institute of India, Rubber Board, Kottayam, Kerala, India

³ Rubber Research Institute of India, Rubber Board, RRS, Guwahati, India

Received: 26 January 2011 Accepted: 24 April 2011

Das, G., Singh, R. S., Meti, S. and Chaudhuri, D. (2011). Performance of some *Hevea* clones under the changing climate of sub-Himalayan West Bengal. *Natural Rubber Research*, 24 (1): 106-116.

Twenty years weather data taken at RES, Nagrakata was analyzed to estimate whether there was any change in weather attributes in this part of India. Successive averages of ten years data (moving average) over a stretch of twenty years meteorological attributes indicated an increasing trend in minimum (T_{min}) and maximum (T_{max}) temperature and relative humidity (RH) in the morning. This may make this region more suitable for rubber cultivation. A clone trial was initiated in 1991 in this region with ten clones along with a check clone RRIM 600. The girth increment (GI) and weather data were grouped into non-winter (NW - April to September) and winter (W - October to March) periods in order to understand the effect of two contrasting weather on growth of rubber. In general, the T_{max} during NW period was higher than the W period. Similarly, T_{min} during NW was almost double the temperature during W period indicating a cooler weather during W period than that of the NW period. The girth increment (GI) during NW was significantly higher than the W period at immature (3-5 yr), juvenile (6-8 yr) and early mature stage (9-11 yr) stage indicating effect of weather on growth of rubber. Data on the dry rubber yield showed that none of the clones was superior to the check clone RRIM 600. In terms of yield, coefficient of variance over years, incidence of tapping panel dryness and wind damage, only one clone i.e. RRII 208 was found to be suitable for the region along with RRIM 600. Study on correlation between yield and weather parameters showed that in post-W (May to September) and pre-W (October to December) periods, there was a positive correlation between yield and T_{max} . During post-W period when T_{max} was high, T_{min} showed negative correlation; during pre-W period, when environment dominated with cool weather, increasing trend of T_{min} would be appreciable which reflected on correlation study with yield showing positive trend. Therefore, with changing climate in the sub-Himalayan West Bengal, rubber production responded positively.

Keywords: Change in weather, Growth, Performance, Yield.

INTRODUCTION

The ideal agroclimate for rubber cultivation is the tropical environment with hot humid wet weather and plenty of sunshine. Thus, rubber trees are native to the

Amazon region, Brazil, Venezuela, Ecuador, Colombia, Peru, and Bolivia. This was introduced to many other tropical/sub-tropical countries of the world viz. Malaysia, India, Sri Lanka, Indonesia, Thailand etc.