

## AN INDEX TO ASSESS AREAS HYDROTHERMALLY SUITABLE FOR RUBBER CULTIVATION

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A simple climatic index (CI) was developed, incorporating temperature and rainfall distribution, with respect to the climatic requirements of *Hevea brasiliensis*. The climatic resources for rainfed rubber cultivation have been categorised into six zones : (1) highly suitable, (2) suitable, (3) moderate, (4) marginal, (5) conditional and (6) not favourable. Comparison of CI with already established commercial natural rubber growing regions elsewhere indicates that most of the locations in India, where commercial cultivation of rubber is being undertaken, fall under zones 2 and 3. Temperature conditions along West Coast, parts of East Coast and a few locations in North-East India are more favourable for rubber cultivation than rainfall. Areas marginally or conditionally suitable for rubber cultivation in different parts of India, with irrigation and soil conservation, are reported.

Key words : *Hevea brasiliensis*, Climatic requirement, Rainfed cultivation, Drought, Climatic suitability, Marginal area, India.

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### INTRODUCTION

Availability of land forms a limiting factor for expansion of rubber (*Hevea brasiliensis*) cultivation in the traditional rubber growing tracts of India. Hence the alternative is to explore areas of less congenial soil and climatic conditions (Sethuraj *et al.*, 1989; Menon and Unni, 1990). Integrated effect of all environmental conditions influences productivity of any species. Climatic and edaphic factors delimit areas where specific crops can be grown to realise economic yield (Chang, 1981; Pereira, 1982). Introduction of agrotechnology to new areas, without a proper climatic resource analysis, can lead to failures (Yao, 1973;

Chang, 1981; Williams, 1983). Development of suitable agroclimatic indices is one approach to assess the different areas (Nield and Boshell, 1976; Hashemi *et al.*, 1981; Gao *et al.*, 1987; Brown and Place, 1989). The present study is aimed at developing a simple climatic index for rubber, to identify hydrothermally suitable areas for growing rubber in India, by comparing with traditional natural rubber growing areas.

Radiation is indispensable as a primary source of energy in photosynthesis for the production of assimilates required for growth and latex production. Under adequate soil moisture and nutrient status,

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