

RUBBER GROWING SOILS OF SAO PAULO, BRAZIL

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The physical, chemical and mineralogical characteristics of soils in the western region of the State of Sao Paulo (Paulista Upland), where the largest number of rubber plantations in Brazil is concentrated, are described. Rubber trees (*Hevea brasiliensis* Muell Arg.) are planted in dystrophic and alic Dark Red Latosol, medium texture (Haplustox) and in dystrophic and eutrophic abrupt Podzolic Red-Yellow, 1b, soil, sand/medium texture. The high effective depth, which permits good water retention, is favourable for rubber culture. The major limitations of these soils are the low nutrient content of Latosols (Haplustox) and the high susceptibility to erosion of Podzolic soils (Kanhaplustalf). These limitations may be compensated for by fertilizing and liming and by using conservation measures.

Key words: *Hevea brasiliensis*, Soil characteristics, Brazil.

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INTRODUCTION

The history of natural rubber in Brazil has had an important effect on the situation in this part of the world. This is particularly so because national and international pressures about conservation of the Amazon forests are constantly growing. In Brazil, rubber trees are native to the Amazon forest, from where they propagated to the tropical and subtropical regions of Africa and Asia (Martin and Arruda, 1993). However, starting in 1990, the supremacy of Brazilian production originating from native rubber plantations ended, with a growing predominance of production in the cultivated rubber plantations, especially in the Centre-West and South-East regions of the country. Ortolani *et al.*, (1982) prepared a chart of agroclimatic suitability for the regional culture of rubber trees in Brazil and reported that the Paulista Upland is a preferential region, with satisfactory thermal and hydric conditions, with a real annual evaporation of more than 900 mm, an annual water deficiency of upto 200

mm and relative humidity of 50 to 60 per cent during the driest month. On this basis, the region is considered to escape from occurrence of leaf disease (*Micracystus ulmi*). In 1993, the State of Sao Paulo produced about 27 per cent of Brazilian natural rubber, with approximately 15,270,000 trees in a cultivated area of 36,357 ha, thus reaching the position of the largest producer among Brazilian states. Approximately 90 per cent of the rubber plantations in the State of Sao Paulo are concentrated in six of the thirteen agricultural areas of the State (Martin and Arruda, 1993).

The major area of rubber tree culture in the State of Sao Paulo is that of Sao Preto (42 per cent of all plantations), followed by Barretos (14 per cent), Aracatuba (12 per cent), Marilia (9 per cent), Bauru and Presidente Prudente (7 per cent each). These rubber producing regions are located in West Sao Paulo State, a region geomorphologically dominated by the Paulista Upland.

In a report on the availability of areas for rubber culture in the State of Sao Paulo,