RUBBER GROWING SOILS OF INDIA: AN OVERVIEW

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In India, natural rubber (NR) cultivation is spread in an area of approximately 8.0 lakh hectares and the majority of soils under NR are red ferruginous soils belonging to the Ultisol/Alfisol order containing large proportion of iron and aluminium oxides and hydrous oxides and kaolinite dominated clay. The available literature on physical, chemical and biological properties of the NR growing soils in India, their fertility status and the impact of NR cultivation on soil properties are discussed. In the traditional NR growing belt, stretching from Kanyakumari district in the south to Dakshina Kannada district in the north, repeated cycles of rubber cultivation in the past one century, increased soil acidity, reduced organic carbon, available K, Ca and Mg contents and led to deficiency of Zn. For the soils in the North-east states of India, there are some indications that NR cultivation improved the organic carbon and available nutrient status compared to shifting cultivation/jhumming practices. Increasing soil reaction to the extremely acidic pH, declining base status and rising deficiency of Zn were reported from the traditional belt as well as from North-East India which warrants further studies and nutrient management strategies to maintain soil health and productivity on a sustainable basis.

Keywords: *Hevea brasiliensis*, Lateritic soils, Red ferruginous soils, Rubber growing soil, Soil acidity, Soil biology, Soil chemistry, Soil fertility, Soil health

INTRODUCTION

Soil is a living, dynamic and precious natural resource. It is a complex habitat of mineral and organic particles, living organisms including plant roots, microbes, and larger animals, and pores filled with air or water. Soil is the foundation of our lives and of all ecosystem processes. It is a very important component of the natural ecosystem that enables food production, serves as an important water storage and water filter, converts and dissipates organic residues and makes pollutants harmless. Commercial cultivation of natural rubber (NR) in India in its traditional region from Kanyakumari district of Tamil Nadu in the south to Dakhsina Kannada and Kodagu districts of Karnataka state in the north, crossed 100 years and the soils under it had been subjected to many changes. Similarly, NR cultivation in the non-traditional regions, especially North-eastern regions is on very fragile and depleted soils once subjected to jhumming/shifting cultivation. An overview on the NR growing soils is provided here for a comprehensive understanding of our soils which will be useful for evolving holistic soil and fertilizer management strategies for NR production.

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