

# SPATIAL VARIABILITY OF PLANT AVAILABLE ZINC AND BORON IN THE TRADITIONAL RUBBER GROWING REGIONS AND KONKAN REGION OF INDIA

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Information on spatial variability of soil fertility parameters is important for efficient nutrient management and sustaining soil fertility and crop yield. The present study examined the spatial variability of plant available micronutrients Zn and B status in the traditional rubber growing regions and Konkan region of India. Geo-referenced soil samples were collected from rubber growing regions in Kerala, Kanyakumari district of Tamil Nadu, Dakshina Kannada, Udupi, Chikkamagaluru, Coorg and Shimoga districts of Karnataka, Goa and Sindhudurg district of Maharashtra during 2012 to 2013 and available Zn and B were estimated in these soils. Maps showing the spatial distribution of these nutrients in the study areas were prepared using geostatistical tools. Available Zn status varied from 0.01 to 10.91 mg kg<sup>-1</sup> and available B from 0.01 to 2.48 mg kg<sup>-1</sup>. In Kerala, Goa and Maharashtra available Zn status was adequate in 50, 44 and 58 per cent of the rubber growing areas, respectively. Adequate level of available Zn status was found in majority (93%) of the rubber growing areas in Kanyakumari district of Tamil Nadu whereas most (99%) of the studied areas in Karnataka was low in available Zn status. In general, available B status was low. The entire rubber growing areas in Goa, Maharashtra and most of the areas (99%) in Karnataka were low in available B status. In Kanyakumari district, 66 per cent of the rubber growing area showed adequate level of available B whereas 67 per cent of the area in Kerala was low in available B status. Wide spatial variability in both nutrients was also observed among the various districts in Kerala. This study shows that blanket approach in micro nutrient management is not correct and site-specific micronutrient management is to be adopted in rubber plantations in the traditional rubber growing regions and Konkan region of India for sustaining soil fertility and better resource management.

**Key words:** Geo statistics, Micronutrients, Nutrient management, Rubber, Spatial variability

## INTRODUCTION

Soil fertility is a key factor influencing the plant growth and crop production which in turn depends on nutrient availability in soil.

The nutrients required for plants are usually obtained from soil and applied fertilizers. Inadequate fertilizer application leads to depletion of soil fertility and retards plant