SPATIAL VARIATIONS OF SOIL PHOSPHOROUS AVAILABILITY IN THE TRADITIONAL RUBBER GROWING AREAS OF SOUTH INDIA, THE KONKAN REGION OF GOA AND MAHARASHTRA

K.K. Ambily, A. Ulaganathan, B. Pradeep, James Jacob, M.D. Jessy, Joshua Abraham, Annie Philip, P. Prasannakumari, V.K. Syamala, Sherin George, Phebe Joseph, Thomas Eappen, Joyce Cyriac, P.M. Mathews, K.S. Anilkumar[1] and K.M. Nair[1]

Rubber Research Institute of India, Kottayam-686 009, Kerala, India
[1]Regional Centre, ICAR- National Bureau of Soil Survey and Land Use Planning, Bengaluru-560 024, India

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The spatial availability of soil nutrients and their status is an important primary factor that determines sound nutrient management practices by using an appropriate method to identify all soil fertility constraints. In India, rubber cultivation spreads over varied agro-climatic conditions with spatial variability in various soil fertility parameters. In the present study, a survey on soil phosphorus availability, classification of soil available P (Av. P) and preparation of soil fertility maps which delineate soil phosphorus status were conducted for the traditional rubber-growing soils of South India including Goa and Maharashtra. Geo-referenced soil samples were collected from rubber-growing regions and soil Av. P was analyzed using standard analytical protocol. The soil Av. P status was mapped geostatistically following the kriging interpolation technique. From the results it was inferred that higher Av. P status was observed in Kerala and Kanyakumari district of Tamil Nadu compared to the entire rubber growing areas of Karnataka, Goa and Maharashtra which showed low Av. P status. Rubber growing soils of Kanyakumari in Tamil Nadu, Alleppey, Idukki, Ernakulam, Thrissur and Palakkad districts in Kerala were adequate in Av. P whereas Thiruvananthapuram, Kottayam, Malappuram, Kozhikode, Wayanad, Kannur and Kasaragod districts were low in Av. P status. Kollam and Pathanamthitta districts in Kerala showed an equal proportion of low and adequate status of Av. P. All districts in Karnataka and the entire rubber growing areas in Goa and Maharashtra were low in Av. P. The study emphasized the need for external input of phosphorus fertilizer with due consideration of the leaf P status of rubber plants in Av. P deficient areas especially in Karnataka and rubber growing areas in Goa and Maharashtra.

Keywords: Available phosphorus, Geostatistical mapping, Macronutrient, Rubber soils, South India, Spatial variations

Correspondence: Ambily K.K. (Email: ambili@rubberboard.org.in)