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### **Biogeochemical alterations in Sal forest soils of Chota Nagpur Plateau, India**

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Loss of plant diversity and poor regeneration potential are important ecological problems in the tropical deciduous forests (TDFs) across the globe. Many researchers have studied the structural complexities, regeneration pattern of native plant species, changes in diversity indices, fragmentation, patch formation etc., to understand the ecological consequences of forest degradation. In Southeast Asia, many researchers have studied the loss of mixed nature of plant communities in Sal forests due to the alterations in the nutrient dynamics, litter decomposition, loss of moistures, changes in phenology of native plant species, changes in microbial activities, etc. The importance of macronutrients and micronutrients in plant growth and soil fertility are well known, however, these are poorly described soil components of TDFs in the world. In present study, the spatial and seasonal variations in biogeochemical parameters were studied in twenty forest soils collected from four Sal forest sites of Chhotanagpur Plateau in India. The pH of soil samples varied from 5.8 to 6.4 in winter, 4.3 to 5.4 in summer and 6.5 to 6.8 in the monsoon. Seasonal variations in C:N ratio showed lowering of C:N ratios in the monsoon. The elemental concentrations were found below the average earth crust values indicating shallow nature of forest soils. The species poor sites were deficient in Ca, Fe, Mg, Mn and P. These elements showed greater concentrations and less degree of spatial and temporal variations at species rich sites. In the Chhotanagpur TDF soils, least abundant element was phosphorus indicating the predominance of strongly weathered soils and contain low concentrations of extractable P.

#### **Biography**

Anshumali has completed his PhD in Environmental Sciences from Jawaharlal Nehru University, New Delhi in the year 2006 and joined Department of Environmental Science and Engineering, Indian School of Mines as an Assistant Professor in the year 2007. He is graduated in Botany from Banaras Hindu University in the year 1996 and also completed Post graduation in Botany from same University in the year 1998. He has published more than 50 papers in reputed international journals and guiding 14 PhD scholars in different areas of terrestrial and aquatic biogeochemistry. In this academic journey, he has visited SARRC Countries, European Countries and USA to attend international conference, seminar, symposia and training workshop. In India, he is non-Official Member of the Ministry of Environment Forests & Climate Change (MOEF&CC). He is supervising various R&D and consultancy projects related to Coal Mining, Iron Ore Mining, Hydropower and Thermal Power projects.

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