

Journal of Applied Geochemistry
Vol.17, No.2 (2015), pp. 140-151

BIOGEOCHEMICAL STUDY OF COPPER MINERALIZED ZONE NEAR KALYADI, KARNATAKA

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Abstract

Ultramafics intercalated with metasedimentaries in Kalyadi area host copper mineralization and the overburden of this mineralized zone has been studied from the point of geobotany and biogeochemistry. In the mineralized zone, the soil cover is very thin (1-1.5 ft), and supports sparse and stunted vegetation. Shrubs dominate the herbs and trees. *Dodonaea viscosa*, *Cassia auriculata*, *Maytenus emerginata*, *Pavetta indica*, *Erythro xylon*, *Tecoma stans*, *Aerva lanata*, *Hyptis suaveolens*, *Atylosia albicans*, *Stachyterphyta indica*, *Chromolaena odorata* are the plant species which have been studied and sampled. Morphologically, no significant changes could be made out from the species growing in the mineralized area. Depending upon the distribution and homogeneity of the plant species sampling has been carried out following a grid pattern. The elements analyzed for plant species and soil included Cu, Cr, Zn, Ni, Co, Mn and Mg. Trace element study of soil and floral species indicates moderate but inhomogenous dispersion of Cu from the bed rock source. Only a few samples of Leguminosae, *Dodonaea viscosas*, *Erthyron xylon*, *Leucas ciliata* and *Pavetta indica* showed slightly higher values. Thus, these species are considered as better up-takers of copper. Restricted Cr, Ni and Co in almost all the analyzed plants could be due to their lesser mobility. The overall biogeochemical observation has helped to recognize *Leucas ciliata*, *Cassia auriculata* and *Erthyron xylon* as species slightly favourable for Cu up-take and could serve as local indicators. *Stachyterphyta indica* is recognized as a good up-taker of Zn.

Keywords: Biogeochemistry, Geobotany, Copper mineralization, Kalyadi.