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Full Length Research Paper

Geophagic clays: Their mineralogy, chemistry and possible human health effects

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Randomly chosen representative geophagic clay samples from Cameroon and Nigeria were mineralogically and chemically analysed. The primary objectives of the study were to qualitatively and quantitatively identify the mineral constituents and to determine selected elemental compositions in the clay samples in order to infer on possible human health effects. Laboratory tests performed on the samples included X-ray powder diffractometry (XRPD), Fourier transform infra red (FTIR) spectrophotometry, and selected trace elemental analysis using inductively coupled plasma-mass spectrometer (ICP-MS). Quartz and kaolinite were conspicuously dominant in the samples. Very significantly, low concentrations of Rb, Ba, Sr, Sc, V, Cr, Co, Ni, Cu, Zn, Y, Zr, Nb and Mo as well as Th and Pb were detected in the samples. Results depict purified and refined clays of sedimentary origin with medicinal and nutritional values beneficial to the geophagic individual though there are possibilities of associated human health risks.

Key words: Kaolinite, quartz, medicinal and nutritional values, health risks.