

GEOCHEMISTRY AND HEALTH RISGEOCHEMISTRY AND HEALTH RISK ASSESSMENT OF CONSUMED CLAYS FROM SELECTED MARKETS IN SOUTHERN NIGERIA

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Geophagy is the deliberate consumption of clay, it is widely practiced in different parts of Nigeria. Due to different opinion on the effects of geophagy clay on human health, this study was carried out to determine the health risk assessment of consuming clay from Mowe, Ikorodu and Onitsha markets. Geophagy clay samples were bought from Mowe, Ikorodu and Onitsha Markets and fifteen samples were analysed for their elemental concentration using Inductively Coupled Plasma-Atomic Emission Spectrometry (ICPAES). Potential health risk assessment was calculated using Hazard Quotient (HQ) and total Hazard Index (THI).

Geochemical analysis result revealed wide range of elemental concentration (ppm). For Mowe market; Cr, Cu, Mn, Ni, Pb and Zn ranged 107 - 114; 4 - 9; 18 - 580; 12 - 3; 21 - 33 and 18 - 95 respectively. For Ikorodu market; Cr, Cu, Mn, Ni, Pb and Zn ranged 97 - 122; 4 - 8; 18 - 519; 14 - 34; 18 - 33 and 18 - 89 respectively. For Onitsha market; Cr, Cu, Mn, Ni, Pb and Zn ranged from 88 - 109; 7 - 9; 396 - 863; 30 - 44; 16 - 21 and 90 - 100. HQ values were used to calculate the THI values for child and adult. THI for child and adult for Mowe market samples ranged 0.95-2.06 and 0.51-1.10 respectively. For Ikorodu market samples, THI for child and adult ranged 1.02 - 1.83 and 0.55 - 0.98 respectively, while THI for child and adult for Onitsha market ranges samples from 1.54 - 2.60 and 0.83 - 1.84 respectively.

In conclusion, children that consume clay from the three markets are more exposed - non-carcinogenic risks than adults. It is also adviceable that, the clays should not be eaten continuously for a long period of time to avoid associated health problems.