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## Clayey soil geophagia and possible mitigation processing for safe consumption

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This paper discusses the mineralogy of, bio-fauna in and the processing of a selected geophagic clayey soils for safe consumption. Clayey soil collected from open market in Tzaneen (Limpopo), Palabora (Limpopo), Mokolo (Cameroun) and Bangou (Cameroun) were studied. Clayey soil materials were characterised using Mossbauer Spectroscopy, Fourier transform infrared (FTIR) and, X-ray diffraction and fluorescence. The Physicochemical properties and the microbial assay to ascertain the micro flora of the samples were also carried out.

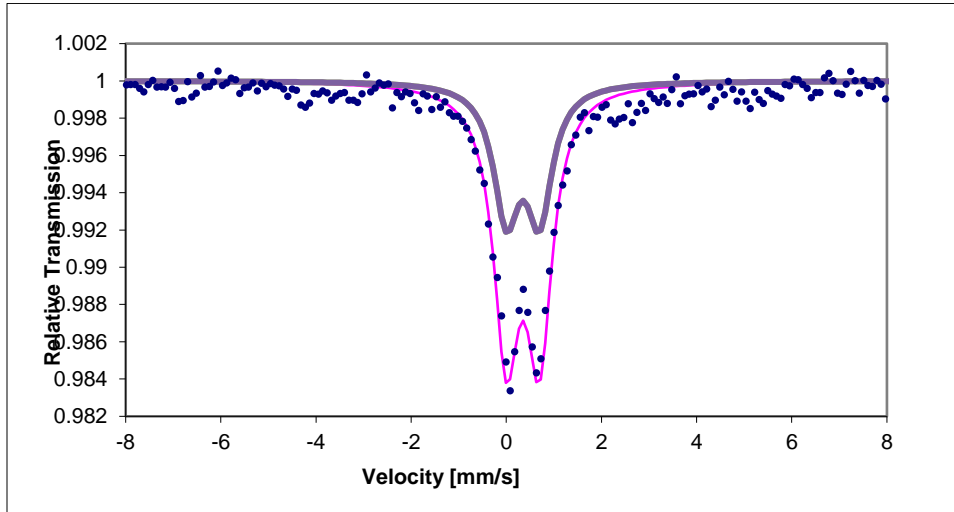


Figure 1: Typical Mossbauer spectrum of geophagic clayey soil. The presence of Fe<sup>3+</sup> is noticeable.

Table: XRF analysis of Tzaneen geophagic clayed soil.

Elements
Si
Al
Fe
K
Mg

Ti
Na
Ca
Zn
Cu
percentages
23.61
16.94
6.18
4.20
1.04
0.37
0.35
0.22
0.01
0,01

This paper discusses the microwave treatment of the sample as structural iron is subjected to the internal heating. The reduction of microorganism activity in the clayey soil after microwave irradiation is monitored by Mossbauer spectroscopy.

