SOIL CONTENT OF SOME OXIDES AND ITS RELATION TO WEATHERING LEVELS FOR SOME SOILS FORMED UNDER DIFFERENT CLIMATE CONDITIONS / NORTHERN IRAQ

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ABSTRACT

The objective of this study was soil development by used some weathering parameters, soil samples were selected from four different locations in Ninavah Governorate (Al-Hadher, Al-Qayarah, Hamam al-alil, Tallafer, Faidah). The studied areas were selected according the variation of environmental conditions and climate. Chemical analysis was conducted using (XRF) Technique.

Results of XRF Analysis also showed a clear increasing in immobile oxides of (SiO_2, Fe_2O_3 and Al_2O_3) and trace (rare) elements (ZrO, MnO and TiO_2) in Faidah soil and gradually decreased in Tallafer, Hamam al-alil, Al-Qayarah and reach its lowest levels in Al-Hadher soil. However the mobile oxides of (CaO) and the loss in ignition was increased in Al-Hadher soil and gradually decreased in Al-Qayarah, Hamam al-alil, Tallafer and reach its lowest levels in Faidah soil.

Calculation of weathering indices has been done such as Kronberg & Nesbitt (KN), modified weathering potential index (MWPI), plagioclase index of alteration (PIA), weathering ratio (WR), bases / alumina (B/A), and weathering index (WI-1), (WI-2). Results of weathering indices included that the highest levels of weathering levels was found in Faidah soil (High Average rainfall) and the lowest weathering levels in Al-Hadher soil (Low Average rainfall).

The aim of research is to identify the degree of development of the soil through the soil content of some oxides using some weathering indices

Keywords: *Weathering indices, Oxides , Soil development, XRF Analysis*