SPATIAL CHARACTERISTICS OF UNDERGROUND WATER CHEMISTRY IN SOME SELECTED RURAL AREAS OF OGBOMOSO ZONE OF OYO STATE, NIGERIA

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ABSTRACT

Exploitation of underground water for domestic purposes is prominent in developing countries because of the susceptibility of surface sources to pollutants. Inspite of this, cases of water-associated illnesses and death are still reported. This work examines the quality of underground water in 15 randomly selected rural communities in Oriire, Ogo-Oluwa and Surulere LGAs in Ogbomoso zone of Oyo State, Nigeria. The parameters were analyzed using standard laboratory techniques. The results show that the parameters analyzed are within the permissible limits except pH and potassium which slightly exceeded the maximum standard recommended by WHO and NIS. Explanation of the variations in water quality as extracted by Factor Analysis is dominated by EC, Nitrate, coliform and Phosphate. Thus, water should be treated before consumption to safeguard human health. The suggested remedies to control the concentrations of the parameters include citing wells away from runoff channels and farm plots, concreting the well area and raising its circumference above the earth's surface. Further investigation on seasonal influence on water quality is suggested.

Keywords: Ogbomoso zone; Rural areas; Underground water; Water potability; Water quality.