



Quality assessment of major sources of Drinking water of a rural community in Nigeria

Gloria Ezenne and Roland Ozor

University of Nigeria, Nsukka, Agric. and Bioresources Engineering, Nsukka, Nigeria (gloria.ezenne@unn.edu.ng)

Water is vital to the existence of all living organisms; without it societies wither and people die. Most of the ill-health which affects human, especially in developing countries can be traced to lack of safe water supply. There is virtual absence of public water supply in many rural areas in Nigeria. Rural dwellers depend heavily on alternative sources of water such as surface water (rivers, streams or lakes), rainwater, and underground water (boreholes). These drinking water sources are under increasing threat from contamination. Hence the aim of this study is to evaluate major sources of drinking water of Lejja community in South Eastern Nigeria. Lejja is located on latitude $06^{\circ}44.26'$ north and longitude $07^{\circ}19.93'$ East of Nigeria. Major sources of drinking water considered are Adada River, harvested rainwater stored in a local cistern and Umoda borehole. The variability in the physico-chemical and microbial constituents in the three drinking water sources were assessed in both dry and raining season. The water samples were collected under normal, everyday conditions in order to gain a representative sample. WHO proper procedures for collecting water samples were also observed. The results were compared with WHO standards. From the results obtained for both dry season and rainy season, all the parameters are within the WHO acceptable limit expect for magnesium, coliform count and E. coli. Among the three sources, Adada river has the highest coliform count and E. coli followed by harvested rainwater. Results also show that coliform count is higher during rainy season than dry season for the three sources of water but reverse is the case for E.coli that is higher in dry season than in the rainy season. Water from Umoda borehole is far better than harvested rainwater and Adada river.