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PHYSICO-CHEMICAL QUALITY OF WATER FROM VARIOUS SOURCES IN SAMBURU DISTRICT, KENYA

Limited access to safe drinking water and information on water quality in sparsely populated arid and semi-arid regions has contributed to frequent outbreaks of diarheal disease and other health conditions of concern. There is therefore urgent need to determine the physico-chemical quality of water in various sources in these regions. This study was undertaken in order to determine water quality of water sources (dams, rivers, springs and tap water) in Wamba Division of Samburu District. Physicochemical analyses were carried out using standard methods. Majority of the samples analyzed frequently recorded high levels of turbidity (range, 5 to 6100 NTU), alkalinity (range, 20 to 1577 mg L-1 CaCO3) and low salinity (range, 0 to 0.2 ppt). This study also found that the boreholes had the highest mean conductivity (830.8 µS cm-1) while wells had the widest range (4.6 to 5940.0). High levels of conductivity in water from groundwater sources can be attributed to the long period of contact between the water and mineral sources. This study therefore concludes that water from most sources is contaminated and must therefore be treated before consumption. It is recommended that further studies be conducted to identify the best eco-friendly and affordable technology to be used to reduce turbidity and salinity in most of the water sources. High conductivity levels also suggests that there is need to investigate the presence of underlying mineral ions which may be toxic to health of the water consumers.

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