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Levels of selected physicochemical indices in some tap-water commonly accessed by residents in wukari, Nigeria

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Abstract

Background: Water is required daily by humans and water quality is measured by several factors, including physicochemical parameters. This study evaluated the levels of selected physicochemical indices of water quality in selected tap water commonly accessed by residents in Wukari metropolis, Nigeria. Methodology: The water samples were collected from some boreholes located at different parts of Wukari metropolis: Central Mosque Wukari, FUW Teaching Hospital, Veterinary Hospital Wukari, New Site Area and Elim-Top Suites. They were analysed for the selected physicochemical indices. Results: Iron, copper and lead were not detected to be present in all the selected tap water. Free chlorine was higher in the tap water collected at Central Mosque Wukari, FUW Teaching Hospital and Veterinary Hospital Wukari than in others. Total chlorine was of the same level in all the tap water collected, except the water at Elim-Top Suites. Nitrate was only present in tap water collected at Central Mosque Wukari and Elim-Top Suites. Nitrite, fluoride, cyanuric acid and chlorine dioxide were not present in all the tap water samples. Carbonate was higher in the tap water collected at Central Mosque Wukari and FUW Teaching Hospital than in others. Total hardness was higher in the tap water collected at Central Mosque Wukari, followed by FUW Teaching Hospital. The level of total alkalinity was higher in tap water collected at Central Mosque Wukari. The pH values of the tap water samples ranged from 7.20 to 8.20. The TDS values of all the tap water samples ranged from 112.00 to 261.50 mg/L. The temperature of the water samples ranged from 27.80 to 28.70 oC. All the tap water samples were colourless, odourless and tasteless. Conclusion: The results of this study showed that all the tap water samples analysed are safe for drinking.

Keywords: Acceptability, contamination, physicochemical indices, water, water quality