

METAL CONTENT AND PHYSICOCHEMICAL PROPERTIES OF SOME NIGERIAN BEVERAGES

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ABSTRACT

The quality of representative samples of 21 commonly consumed beverages in Nigeria was assessed based on their elemental composition (Na, K, Mg, Mn, Pb, Ca, Fe, Cu and Zn) and physicochemical properties (pH, sugar content (brix), density and alcohol content). The metal concentrations determined by atomic absorption spectroscopy (AAS). Soft drinks, fruit juice and wines were found to be acidic based on their pH values, which ranged from 3.19 – 3.64, 3.09 – 3.73 and 3.45-3.73 respectively. The range for Na, K, Mg, Mn, Pb, Ca, Fe, Cu and Zn ions concentrations in all samples analyzed were 9.88 – 1473.50, 1.53 – 2656.20, 1.78 – 564.40, 0.01 – 4.15S, 0.03 – 0.41, 2.15 –123.85, 0.32 – 5.24, 0.005 – 3.720 and 0.008 – 1.83 mg/L respectively. Malt drinks were found to be a good source of Mg²⁺ ion (225.80-564.40mg/L). Fruit juice was found to be rich in K, Mg, Ca, Fe and Cu. Soft and malt drinks are also good sources of Na, K, and Mg among their respective brands. Soft drink was found to contain the highest level of Pb (0.41mg/L) among all the samples analyzed. All the samples analyzed except Ogogoro contained low level of Cu²⁺ ion.

Keywords: Metal content, physicochemical properties, beverages.