

Bacteriological Safety of Sachet Drinking Water Sold in Benin City, Nigeria

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Abstract : Access to safe drinking water remains a major challenge in Nigeria, and where available, the quality of the water is often in doubt. An alternative to the inadequate clean drinking water is being found in treated drinking water packaged in electrically heated sealed nylon and commonly referred to as "sachet water". "Sachet water" is a common thing in Nigeria as the selling price is within the reach of members of the low socio- economic class and the setting up of a production unit does not require huge capital input. The bacteriological quality of selected "sachet water" stored at room temperature over a period of 56 days was determined to evaluate the safety of the sachet drinking water. Test for the detection of coliform bacteria was performed, and the result showed no coliform bacteria that indicates the absence of fecal contamination throughout 56 days. Heterotrophic plate count (HPC) was done at an interval 14 days, and the samples showed HPC between 0 cfu/mL and 64 cfu/mL. The highest count was observed on day 1. The count decreased between day 1 and 28, while no growths were observed between day 42 and 56. The decrease in HPC suggested the presence of residual disinfectant in the water. The organisms isolated were identified as *Staphylococcus epidermis* and *S. aureus*. The presence of these microorganisms in sachet water is indicative for contamination during processing and handling.

Keywords : coliform, heterotrophic plate count, sachet water, *Staphylococcus aureus*, *Staphylococcus epidermidis*

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