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ABSTRACT

Aninvestigative study was carried out to determine the bacteriological qualities of borehole water samples in halls of residence in the University of Benin,Ugbowo Benin City. A total of five water samples were collected from the thevarious halls of residence in the school. Bacteriological analysis was carriedout using standard methods. The total bacterial count was determined by pourplate technique and total coliform determined. Eight genera of bacteria whichinclude *Klebsiella* spp., *Salmonella* spp. and *Alcaligenes*spp. were isolated from the water samples. Total bacterial count in watersamples ranged from 0 to 32 x 10² cfu/ml. The total coliform countof the borehole waters analyzed ranged from 0 to 39 MPN index of coliform/50ml. It was concluded that not all tank waters are safe for consumption andproper measures should be taken in cleaning and treating our water tanksregularly.

CHAPTER ONE

1.0 INTRODUCTION

Wateris indispensable and intricately connected to life, without which there is nolife. This is the reason for which water must be given the necessary attentionat all times. Good drinking water is not a luxury; it is one of the mostessential amenities of life itself. The supply of safe drinking water to all hastherefore engaged the attention of many individuals, groups, governmentalorganizations and private organizations. (Adetunde et al. 2010).

Drinking water free of pathogenic organisms isfundamental to breaking one of the principal transmission routes of infectious disease. This fact has stimulated worldwide investment in the construction of water systems that are designed to meet stringent water quality standards.(Trevett, 2004).

Waterborne pathogens, including a variety ofviral, bacterial, algal and protozoan agents, account for much of the estimated4 billion cases and 2.5 million deaths from endemic diarrheal disease eachyear. (Kosek et al. 2003).

Increase in human population has exerted anenormous pressure on the provision of safe drinking water, especially indeveloping countries (Umeh et al. 2005). Unsafe water is a global public healththreat, placing persons at risk for a host of diarrheal and other disease aswell as chemical intoxication (Hughes et al. 2005). Unsanitary waterparticularly has devastating effects on young children in developing world.Each year, more than 2 million persons, mostly children less than 5 years of age,die of diarrheal disease (Kosek et al. 2003; Parashar et al. 2003).

Nearly 90% of diarrheal-related deaths havebeen attributed to unsafe or inadequate-water supplies and sanitationconditions affecting a large part of the world's population (Hughes et al.2005; WHO 2004). An estimated 2.6 billion persons lack access to adequate sanitation(Okonko et al. 2008).

TheUniversity of Benin, Benin City, has 5 main halls of residence (halls 1, 2, 3,4 and 5). There are also various staff quarters in the school: Junior StaffQuarter, Senior Staff Quarter, Dentistry Quarter and Doctor's Quarter. Thesehalls depend on borehole water stored in overhead tanks for their water supply.

1.1 AIM OF THE STUDY:

This study is aimed at the bacteriological analysis of the water from these tanks.

1.2 OBJECTIVES OF THE STUDY:

- 1. Toattain the total bacterial count of the water samples.
- 2. Todetermine the coliform counts (Most Probable Number) of the water samples.
- 3. Todetermine the species of bacteria present in the water.

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