

Microbiological quality of drinking water in both the source and point of use in Marigat Urban Centre Baringo County, Kenya

Osiemo M.M^{1,ϕ}, Ogendi G.M^{1,2}, M'Erimba C.³

¹*Department of Environmental Science, Egerton University, Kenya*

²*Dryland Research Training and Ecotourism Centre, Chemeron, Kenya*

³*Department of Biological Science, Egerton University, Kenya*

ϕ *Corresponding Author Email address: mercyosiem@yahoo.com, mercyosiem94@gmail.com*

Abstract

Access to safe water is a precondition for health and is a basic human right, yet still denied to hundreds of millions of people throughout the developing world. Waterborne diseases caused by insufficient safe water supplies, coupled with poor sanitation cause 3.4 million deaths a year, mostly in children. This study was conducted with the main aim of assessing the microbiological quality of drinking water in both the source and at point of use. The present study was conducted on 10 water samples from various water sources and at the point of use and analyzed to assess the microbiological quality of the water for presumptive coliform count using multiple tube test. *E. coli* and total coliforms counts for water sources and household water exceeded the WHO drinking water guideline value. Mean counts for *E. coli* were 900cfu/100ml, 775cfu/100ml, 600cfu/100ml, and 475cfu/100ml for river water, Kisima point, borehole 1 and borehole 2 respectively, total coliforms were 950cfu/100ml, 365cfu/100ml, 206.16cfu/100ml and 57.74cfu/100ml for river water, borehole 1, Kisima point and borehole 2 respectively. Mean counts for *E. coli* for households were 2500cfu/100ml, 2400cfu/100ml, 1600cfu/100ml, 1250cfu/100ml, 410cfu/100ml and 200cfu/100ml for household 6, 5, 4, 1, 2 and 3 respectively, total coliforms were 4575cfu/100ml, 1950cfu/100ml, 1025cfu/100ml, 75cfu/100ml, 25cfu/100ml and 25cfu/100ml for household 1, 5, 6, 2, 3 and 4 respectively. Despite continuous efforts by the government over a billion people still don't have access to improved water sources. Microbiological assessment of all sources of drinking water should be conducted on regular basis to prevent waterborne diseases dissemination.

Keywords: Microbiological quality, Coliforms, Multiple tube test, Sanitation.