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ANALYSIS OF LAKE WATER AT MUSOMA DISTRICT

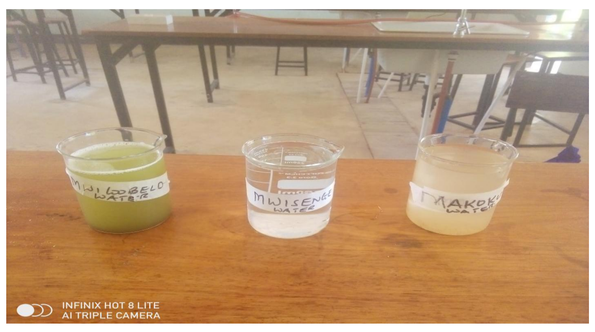
Vanessa Akinyi Lawrence and Zulfa Mabele Egwaga

Nyasho Secondary School

Introduction

The research question was '' lake water from different area are pure for human consumption''.
Aim of the project was to analyse water from the lake in Musoma district. So as to check water purity and quality, type and concentration of bacteria and their usefulness.
Water from the same lake have different physical, chemical and biological test
Monitoring water quality in lakes and reservoirs is key in maintaining safe water for drinking, bathing, fishing and agriculture activities.
Long term trends and short term changes are indicators of environmental health changes in water catchment areas.

The lake water products (lake water quality, lake surface water temperature) provides a semi – continuous observation record for a large number of medium and large sized lakes according to global lakes and wet land database (GLWD).
Next to the lake surface water temperature that is provided separately. This record consists of three water quality parameter
a)The turbidity of a lake describe water clarity
b)The tropic state index is an indicator of productivity of a lake phytoplankton, and indirectly reflects the eutrophication status of water body
c)Lakes surface reflectance describes the apparent colour of the water body.



Method

1.To collect the water sample from different location at Musoma municipal
2.Test water sample physically, chemically and biologically.
A) Physical test
I. Water sample in the beaker was taken and observed its turbidity (check suspended particles or dissolved particles in water), water colour and temperature of water
B) Chemical test.
I. pH strip was dipped in Water sample in the beaker to check if water sample pH
II. Also chemical test by titrating EDTA against sample of water from different locations and distilled water (as the reference sample) to check chemical composition of water (hardness of water) by using buffer solution and indicator (Murexide)
Firstly the EDTA was put in the Digital titrator.
50mls of sample water was measured by using measuring cylinder, then put in conical followed by addition of two drops buffer solution and indicator (Murexide)
Then titrate EDTA against the solution in conical flask

Results

Water sample from different location collected was tested through different ways, include physical test, chemical test and biological test.
Water from Mwigobelo seemed to be coloured (greenish-yellow) which indicates that there are more dissolved particle. Also the pH value from the location was higher compared to other area which signify that water from that area is alkaline compared to other sample water from other areas, which shows that water from such area is not the best water for drinking. Also the concentration of bacteria after observation from the microscope showed blue black colon which is the best for Esterichia coli bacteria which are the result of living animals such as human being, cow.

Location of water collection	Type of test used							
	Physical			Chemical		Biological		
	Availability of particles suspended and water colour			pH	Total hardness of water (mg/l)	Types of bacteria observed by colour colonies.		
	More	less	Colour			Colour of bacteria	Type of bacteria	
Mwigobelo	√		Greenish	8.6	0.88	Blue- black	Esterichia coli and Total coliform	
Mwisenge		√	colourless	7.7	0.87	Golden metalic sheet	Total coliform	
Makoko	√		Brownish	7.9	0.88	Blue	Fico-coliform and Total coliform	

Sample water from Mwisenge seemed to have less particle suspended compared from other areas, and less pH value, while the concentration of bacteria was seemed to be higher than in other sample which were golden metallic sheet colon in Total coliform bacteria are found which are not harmful. This signify that more bacteria prefers water that is less polluted with less alkaline.

Conclusion

Before the experiment hypothesis set was sample water from same lake is the same. But after experiment the hypothesis was disproved, since sample water from different locations seemed to be different when tested physically, chemically and biologically. For example Sample water from different locations in the same lake, presence of colonies of bacteria as the result of pollution of water caused by animal including human being. In general lake water is not 100% pure for use so is supposed to be treated and purified before taken for use.

References

1. Robert M. (1995) origin of the chemical composition of some springs and lakes
2. Tracy L. j. Dreiss (1992) chemical evolution of shallow ground water along northeast shore of Mono lake pg 3191-2182

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