

WATER POLLUTION WITH SPECIAL REFERENCE TO HEAVY METALS IN GUGAL BRIDGE CUM BARRAGE ACROSS RIVER KRISHNA, DEODURGA TALUK, RAICHUR DISTRICT

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Received: 26 Apr 2018

Accepted: 05 May 2018

Published: 18 May 2018

ABSTRACT

The present study is to examine the heavy metal contents in gugal bridge/barrage across river Krishna of deodurga taluk of Raichur district. The study was undertaken for a period of one year Dec-2016 to Dec-2017.

KEYWORDS: *Gugal Bridge, Heavy Metals, Krishna River*

INTRODUCTION

Natural resources are the important health of our country, water is one of them. water is a wonder of nature “ No life without water” is a common saying, depending upon the fact that water is one of the naturally occurring essential requirements of all life-supporting activities. Water is essential for the survival of organisms. Pollution of water bodies is one of the area of major concern to environmentalist. Water quality is an index of health and well being of society. Industrialization, urbanization, and modern agriculture practices have a direct impact on the water resources. These factors influence the water resources quantitatively and qualitatively.

Water is never found in its pure state in nature. Essentially all water contains substances derived from natural environment or from the waste products of the man’s activity. Water is good solvent and picks-up impurities easily. Pure water is tasteless, colorless, odorless which is often called “Universal solvent”. As water moves through soil and rock, it dissolves very small amounts of minerals & holds them in solution. In addition varies kinds of pollutants and nutrients through agriculture runoff, sewage, industrial effluents etc into the water bodies brings about a series of changes in physicochemical & biological characteristics of water, which have been the subject of several investigations. Water contains the high amount of various ions, salts, etc. So if we are using such type of water as potable water then it leads to various water-borne diseases. Therefore, it has become necessary to monitor water quality to observe the demand and pollution level of water sources.

The present work is to study the heavy metal contents of Gugal Bridge cum barrage of deodurga taluk, Raichur district.

MATERIALS AND METHODS

- Study Area:** Gugal barrage is located near gugal village of deodurga taluk of Raichur district, across river Krishna a high level barrage with vertical gates measuring 810mts of length. The sole aim of the construction of this barrage is to provide water for irrigation, groundwater recharge & a drinking water facility for villages along the backwater. people of Shapur Taluk of yadgir district & deodurga taluk of Raichur district were benefited by gugal barrage.



Figure 1

- Sample Collection:** Water sample collected during morning hours every month, one liter clean plastic cans were used for sample collection. The samples were sent for analysis.

The following table shows the heavy metal content found in water sample collected from Gugal Bridge cum barrage, the same is compared with the Indian standard for drinking water specification. [1]

Table 1

Sl. No.	Heavy Metal Name	Desirable Limit(mg/l)	Permissible Limit (mg/l)	Identified in Sample Collected (mg/l)
1	Lead	.01	.01	NIL
2	Cadmium	.003	.003	NIL
3	Arsenic	.01	.05	0.00548
4	Mercury	.001	.001	NIL
5	Copper	.05	1.5	0.0012
6	Zinc	5	15	NIL

The heavy metal content from the sample collected reveals that none of the heavy metal is found to be in excess of permissible limit. Heavy metal poisoning refers to when excessive exposure to a heavy metal affects the normal function of the body. Heavy metals like lead, cadmium, mercury and Zinc are not detected in the samples. Other heavy metals like Arsenic and copper are present in acceptable limit which has no impact on humans and other aquatic organisms.

CONCLUSIONS

Analysis and observations about the study shows that the water sample contains heavy metals within normal range which is suitable for drinking and agricultural purpose. Also there is no harmful for aquatic organisms.

ACKNOWLEDGEMENT

Authors would like to thank Pesticide residue and Food quality analysis laboratory, University of Agricultural sciences, Raichur, Karnataka, India

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