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HYDRO CHEMICAL ANALYSIS OF WELLS WATER QUALITY OF HISUA BLOCK AT NAWADA DISTRICT, BIHAR

PINKU KUMAR[1], BHIRGU NATH[1] &V.K.PRABHAT[2]

[1]P G.DEPARTMENT OF ZOOLOGY,MAGADH UNIVERSITY BODH ,BIHAR.
[2]P.G.DEPARTMENTOF BOTANY, RAM YAS, P. G. COLLEGE, MALAK,BALU, NABABGANJ,PRAYAGRAJ.

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IMPACT FACTOR
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Abstract

The present paper deals with dug wells water quality of Hisua block at Nawada District, Bihar. The well water parameters such as temperature, pH, turbidity, electrical conductivity, alkalinity, dissolved oxygen, biochemical oxygen demand, total hardness, calcium, magnesium, phosphate, sulphate, c, iron, chloride and fluoride were estimated in the samples to evaluate their quality. Our result revealed that concentration of DO, BOD, Total hardness, Calcium, magnesium, sulphate, turbidity, alkalinity, phosphate, iron and chloride are within permissible limits and Iron, phosphate are negligible in this well. The concentration of from 20 mg/l to 60 mg/L which is higher the permissible limit of WHO health based guide line values. The higher concentration of nitrate needs proper treatment before the use for drinking purposes and irrigation purposes. Finally it can be suggested that an intensive study may be carried out before the domestic consumption.

Kew words : Well water ,DO, BOD, Total hardness, Calcium, magnesium, alkalinityand chloride.

INTRODUCTION

All though considerable investigations have been made by the researchers but a little information is known about the systematic dug wells water quality. It is important to note that no qualitative, quantitative or ecological study on hydro chemical was made so far from of Hisua block at Nawada District, Bihar.

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Dug well has received various types of sewage i.e., domestic sewage, cattle waste etc. Hence an attempt into the hydro chemical investigation in relation to the different physicochemical characteristics of water taken up in the present investigation. Information about of Hisua block at Nawada District, Bihar . These freshwater communities are extremely sensitive to environmental variations. Zooplanktons are the microscopic free floating copepods communities of water bodies and productivity of an aquatic system is directly related to diversity of zooplankton. They respond quickly to environmental changes and are used to assess the ecological status of water body. In the present study an attempt has been made to assess the hydro chemical studies and their distribution limits and fluctuations in the hydrological variables in the different dug well of Hisua block at Nawada District, Bihar.

MATERIALSANDMETHOD

Water samples were collected in different station in Hisua block at Nawada District, Bihar Samples were collected in plastic bottles for physico-chemical and biological analysis. Water temperature, pH, dissolved oxygen and free CO were determined on the 2 sampling spots and other parameters were analyzed in the laboratory. It is small, open, shallow, round shaped, fresh water dug well. All collections were madebetween7.30amto9.30 am during the study period. Physico-chemical parameters were analyzed in accordance with APHA et al. (2012),period. Physico-chemical parameters were analyzed in accordance with APHA et al. (2012), Sarmah & Goswami (2012), Mishra & Singh (2018) and Choudhary (2019).

RESULTS

Our result reveled that concentration of DO, BOD, Total hardness, Calcium, sulphate, alkalinity, phosphate, iron and chloride are within permissible limits and Iron, phosphate are negligible in comparison to permissible limits.

TABLE1:SHOWING DIFFERENT PARAMETERS OFGROUNDWATER QUALITY OF DUG WELL IN HISUA BLOCK AT NAWADA DISTRICT, BIHAR .

Conclusion

1. The Proper treatment necessary before the use for drinking and irrigation purposes. Freshwater zooplankton are microscopic animals ,such as rotifers and crustaceans, that serve as a crucial link in aquatic food webs, transferring energy from phytoplankton to

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larger organisms like fish..

Sr.no.	Parameters	W1 Sampling and Analysis	W2 Sampling and Analysis	W3 Sampling and Analysis	W4 Sampling and Analysis	W5 Sampling and Analysis
1.	Temperature(ºC)	28	30	28	29	30
2.	PH	7.6	6.5	7.5	7.6	6.6
3.	Alkalinity(mg/l)	230	230	232	230	230
4.	Phosphate(mg/l)	0.0	0.0	0.0	0.0	0.0
5.	Iron (mg/l)	0.3	0.3	0.3	0.3	0.3
6.	Nitrate(mg/l)	15	15	15	15	15
7.	Nitrite(mg/l)	2.0	3.0	3.0	2.0	2.0
8.	Chloride(mg/l)	300	220	300	300	300
9.	Total Hardness (mg/l)	340	350	200	500	500
10.	DO(mg/l)	3.1	3.2	3.2	3.1	3.1
11.	BOD(mg/l)	2.0	2.1	2.2	2.2	2.2
12.	Floride	0.0	0.0	0.0	0.0	0.0

2. Concentration of DO, BOD, Total hardness, Calcium, sulphate, alkalinity, phosphate, iron and chloride are within permissible limits and Iron, phosphate are negligible in comparison to permissible limits.

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