Aarhat Publication & Aarhat Journal's

AARHAT MULTIDISCIPLINARY INTERNATIONAL EDUCATION RESEARCH JOURNAL

Peer Reviewed Multidisciplinary Research Journal

ISSN- 2278-5655

Online and Print Journal

EduIndex Impact Factor: 5.18

UGC Approved Journal No 48178, 48818

Vol VII Special Issues No XV

Chief Editor

Dr.J.P.Bhosale

CO-CHEMICAL ANALYSIS (HARDNESS OF WATER) OF MAJALGAON DAM WATER, MAJALGAO, DIST.BEED(M.S.)

V. M. JAYSINGPURE

Sunderrao Solanke Mahavidyalaya,

Majalgaon, Dist.Beed (M.S.).

ACT : A report of physic-chemical parameter of the water samples taken from the Dam near Beed District of Maharashtra is presented here. The study of physico-analysis like pH,TDS, hardness, conductivity,dissolved oxygen and chemical oxygen been done. The study of these water sample has given the information regarding bility of water for drinking and other domestic applications.

ds: Physico-chemical parameters, domestic, water characteristics.

ODUCTION

Hard water is water that has high mineral content (in contrast with "soft water"). ardness is important to fish culture and is a commonly reported aspect of water It is a measure of the quantity of divalent ions (for this discussion, salts with two charges) such as calcium, magnesium and/or iron in water. There are many different salts; however, calcium and magnesium are the most common sources of water s. Hardness is traditionally measured by chemical titration. The hardness of a water is reported in milligrams per liter (same as parts per million, ppm) as calcium ate (mg/l CaCO3). Calcium carbonate hardness is a general term that indicates the ntity of divalent salts present and does not specifically identify whether calcium, sium and/or some other divalent salt is causing water hardness. Hardness can be a e of divalent salts. In theory, it is possible to have water with high hardness that s no calcium. Calcium is the most important divalent salt in fish culture water.

RIAL AND METHODS

The experiment was conducted at dept. of zoology, Sunderrao Solanke alaya, Majalgaon, Dist.Beed(M.S.) on the sample collected from dam.

PHYSICO-CHEMICAL ANALYSIS

The physico-chemical tests included the determination of temperature, turbidity, odour, color, total solid, total dissolved solid, total suspended solid, pH, conductivity, iron content, acidity, total hardness, and chloride content using the methods of FAO (1997a).

METHODOLOGY

pH was measured with the help of pH meter (Model no. 101 E) of Electronic India , standardized with pH buffer 4,7 and 9.2. TDS was estimated by evaporation method at 1800 C. Alkalinity, Hardness, D.O., Chloride, CO2 and all parameters were analyzed by standard procedure mentioned in APHA (1995). The elemental analysis carried out by digital flame photometer.

OBSERVATION

Reading of water quality parameters of Majalgaon dam.

Params	pH	T.D.S	T.H.	Cal. Hard.	D.O.	Cl	Alk.	Co_2	Na	K
sample water	7.2 ±.0 0e	145±2 .8e	235±. 11d	106±2 3c	3.6±. 00d	83±1. 1d	110±5. 77b	7.92±.0 02a	25±.0 0b	6±.0 0c

DISCUSSION

The value of pH 7.2 is in the prescribed limit of ICMR. A little bit increase in pH level may depress the effectiveness of the disinfectants like chlorinations thereby requiring the additional chlorines. The value of total dissolved solid is in the prescribed limit of ICMR it is due to high dissolved salts of Ca, Mg and Fe it requires specific cation and anion analysis. Total hardness 235 is in the prescribed limit. Calcium hardness 106 mg/l and dissolved oxygen 3.6 mg/l indicates nearly pure symptoms. Chlorine content is 83 and alkalinity 110 mg/l is in the prescribed limit. Alkalinity is the cause of carbonate and bicarbonate ion and its salts. Carbon dioxide is 7.92 ppm. According to Henry's law the gaseous dissolution has been determined by partial pressure of gases, soluble salt content and ambient temperature. Increase in CO2 content may be by high dissolved salt contents. One more possibility is there that is the degradation of DOC (dissolved organic carbon).Higher DOC on post disinfectant application causes some DBPs (Disinfection byproducts) like THM

(Trihalomethanes),HAA (Haloaceticacids) etc. Some of them are potential carcinogens, and a short-term exposure can lead to dizziness, headaches as well as to problems associated with the central nervous system. so it is more relevant for those areas where OM contaminations are high with high use of disinfectants. Quality of ground water under study is nearly fit for drinking purpose, but it is recommended that ground water analysis should be carried out from time to time to monitor the rate and kind of contamination along with analysis of DBPs to corroborate the present study.

REFERENCES

1. APHA. (1995). Standard Methods for the examination of water and wastewater, Pg 2-4, 29-179. American Public Health Association
2. Ballester, F. and Sunyer, J. (2000). Drinking water and gastrointestinal disease, need of better understand and an improvement in public health surveillance. Journal of Epidemiol Community Health 54: 3-5.
3. Bhandari N S and Pande R K, Solute Dynamics of River Sarju in the Central Himalayas, India, In Ecology of the Mountain Waters, Bhatt S.D. and Pande R.K. Ashish Pub. New Delhi, 1991, 104-124.
4. Bhoi D K, Raj D S, Metha Y M, Chauhan M B and Machhar M T, Asian J. Chem, 2005, 17404.
5. Gupta, B. K. and R. R. Gupta. (1999). Physio-chemical and biological study of drinking water in Satna, Madhya Pradesh. Poll. Res. 18: 523-525
6. Garg D K, Goyal R N and Agrawal V P, Ind. J. Envir. Prot. 1990, 10(5), 355-359.
7. Mayur C Shah, Prateek Shilpkar and Sangita Sharma, Asian J Chem. 2007, 19(5), 3449-3454.
8. Mitali Sarkar, Abarna Banerjee, Partha Pratim Parameters and Sumit Chakraborty, J. Indian Chem. Soc., 2006, 83, 1023-1027.
9. Rajas Kara Pandian, M., G. Sharmila Banu, G. Kumar and K. H. Smila. (2005). Physico-chemical characteristics of drinking water in selected areas of Namakkal town (Tamil Nadu), India. Indian J. Environmental Protection, Vol. 10, No. 3: 789-792
10. Rao S.M and Mamatha P, Curr. Sci. 2004, 87, 942.
11. Thakare S. B., A. V. Parvate and M. Rao. (2005). Analysis of fluoride in the ground water of Akola district. Indian J. Environ. and Ecoplan. Vol. 10 No.3: 657-661