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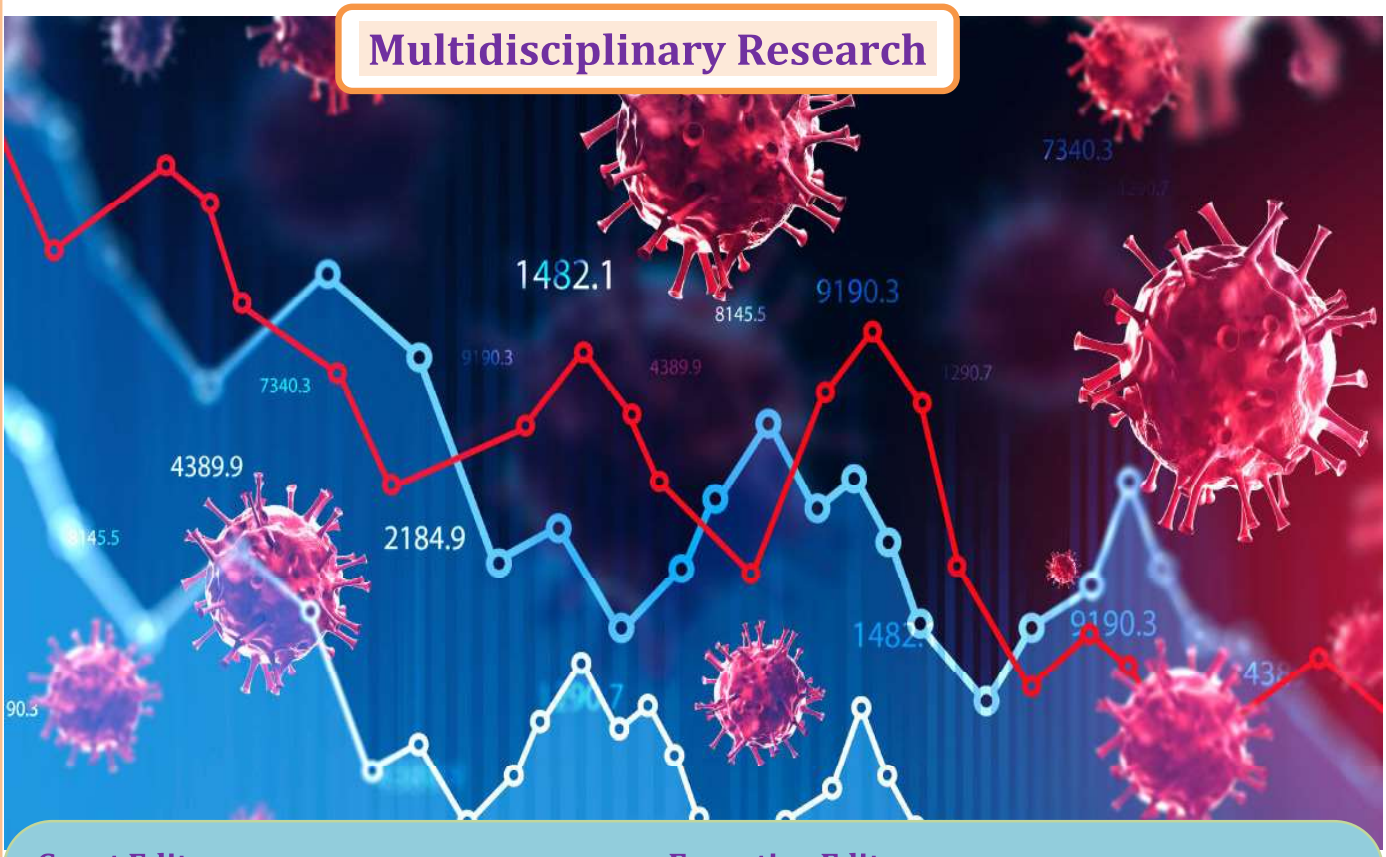

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Studies on Physico-Chemical Parameters of Bore Well Water in Satara Parisar, Aurangabad, India

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Abstract:

The present study was done with assessment of the physico-chemical of bore well water in Sataraparisar region, Aurangabad [M.S] India.The physico-chemical characteristics were studied and analyzed in December-2018. The results were compared with the different standards.In physico-chemical analysis , various quality parameters are measured including temperature, pH, turbidity, odour, electrical conductivity (EC), total dissolved solids (TDS), content of calcium (Ca^{2+}), magnesium (Mg^{2+}), chloride (Cl^{-}), sulphate ($S0_4^{2-}$), iron (Fe), dissolved oxygen (DO), Total alkalinity (TA) and Nitrate (No_3^{2-}) concentration present in bore well water. Each parameter was compared with the standard permisible limit given by WHO.In present study, the appropriateness of bore well water for drinking and domestic purposes could be found.

Keywords: Bore well water, physico-chemical analysis, Sataraparisar.

Introduction:

Everyone has to access to safe water & Sanitation. Clean drinking water has been given priority in the Constitution of India, with Article 47 conferring the duty of providing clean drinking water and improving public health standards to the State. The average availability of water is reducing steadily with the growing population and it is estimated that by 2020 India will become a water stressed nation. Groundwater is the major source of water in our country with 85% of the population dependent on it [1, 2].Water quality provides current information about the concentration of various solutes at a given place and time. Water quality parameters provide the basis for judging the suitability of water for its designated uses and to improve existing conditions. For optimum development and management for the beneficial uses, current information is needed which is provided by water quality programmers [3]. Ground water plugs a vital role in human life. The consequences of urbanization and industrialization leads to spoil the water for agricultural purposes ground water is explored in rural especially in those areas where other sources of water like dam and river or a canal is not considerable. During last decade, this is observed that ground water get polluted drastically because of increased human activities. Consequently number of cases of water borne diseases has been seen which a cause of health hazards. An understanding of water chemistry is the bases of the knowledge of the multidimensional aspect of aquatic environmental chemistry which involves the source, composition, reactions and transportation of water. The quality of water is of vital concern for the mankind since it is directly linked with human welfare. It is a matter of history that facial pollution of drinking water caused water-borne diseases [4].In order to assess water quality index, we have carried out the physico-chemical assessment of bore wells drinking water of selected areas.

Materials And Methods

The water samples were collected from the four different sites in polythene bottles. The water samples were used for the Assessment of several physico-chemical parameters like water temperature, pH were recorded by using thermometer and digital pH meter. Specific

conductivities were measured by digital conductivity meter. The TDS values were measured by TDS meter. Calcium, magnesium, iron, chloride, sulphate and nitrate were estimated in the laboratory by standard laboratory methods. Present study involves the analysis of water quality in terms of physico-chemical methods [5].

Results And Discussion:

The difference in Physico-chemical Parameters is given in Table-1and Table-2.

There was no substantial change in the pH value during the observation period; the observed values were in the range 6.8 to 7.3. Total hardness, odour, conductance and turbidity changed from Sample 1 to Sample 4. Concentration of nutrients like chloride, sulphate, calcium, magnesium, iron, dissolved oxygen, total alkalinity and nitrate was within the permissible limits. The physic-chemical appearances of water samples in the study area suggested that there was no harmful chemical pollution.

Table-1: Physical parameters of water samples of selected bore well water in Sataraparisar region, Aurangabad [M.S] India

Sr. No.	Parameters	WHO	Sample 1	Sample 2	Sample 3	Sample 4
	Temperature (^{0}C)	-	14	16	15.5	14.5
	Odour	-	-	-	-	-
	pH	6.5-8.5	6.8	7.1	6.9	7.4
	Electrical Conductivity (µS/cm)	300	160	187	201	177
	Total dissolved Solid (mg/L)	500	259	295	355	311

Table-2: Chemical parameters of water samples of selected bore well water locations in Sataraparisar region, Aurangabad [M.S] India

Sr. No.	Parameters	WHO	Sample 1	Sample 2	Sample 3	Sample 4
	Chloride (mg/L)	200	145	158	180	172
	Sulphate ($S0_4^{2-}$) (mg/L)	200	80	95	132	105
	Calcium (mg/L)	75	35	45	50	55
	Magnesium (mg/L)	50	13	27	31	35
	Iron (Fe) (mg/L)	0.3	0.20	0.24	0.28	0.21
	Nitrate (mg/L)	45	6.52	7.25	7.19	7.49
	Total alkalinity (mg/L)	250	25.7	72.4	93.2	87.6
	Turbidity (NTU)	5	2.74	1.26	3.89	1.44
	Dissolved oxygen (mg/L)	4.0	3.1	3.3	3.0	2.9

Conclusion:

The amounts of various elements in this study characterization of the physiochemical parameters of water from different locations in SataraParisar, Aurangabad (M.S.) area was carried out as studies carrier out To assess the quality of water each parameter was compared with the standard desirable limits prescribed by World health organization (WHO) [6,7,8]From the study it can be concluded that bore well water in SataraParisar, Aurangabad (M.S.) is safe for drinking purposes.

References:

http://www.ddws.nic.in/popups/submissionfunds-200607-195.pdf.
www.cseindia.org/programme/health/pdf/conf2006/a69industrydelhi.pdf.
Lloyd, R., 1992. Pollution and Fresh Water Fish, Fishing News Books.
V R Kashyap, *International Journal of Applied Research,* 2016; 2 (1), 311-313.
Trivedy R. K., Goel P. K., Chemical and biological methods for water pollution studies, Environmental Publication, Karad, Maharashtra Kaushik, 1986.
WHO, (2001), "Water health and human rights", world water day. http://www.woldwater day.org/thematic/hmnrights.html#n4.
WHO, (2003), "Guidelines for drinking water quality", Geneva, Report No: WHO/SDE/WSH 03.04.
WHO, (2006), "Guidelines for drinking water quality" Geneva, Report No: WHO/SDE/WSH 06.07.