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STATUS OF WATER QUALITY INDEX GHATANJI CITY, MAHARASHTRA, (INDIA)

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Abstract:
The water quality of Six water resources (dams) of Ghatanji city, Maharashtra, was analyzed for suitability drinking purposes. The results revealed that the range of variations was: pH ranged between 7.9 to 8.7, transparency between 3.1 to 5.5, hardness between 97 to 190mg/l, TDS between 360 to 730mg/l, DO between 4.6 to 7.2mg/l and CO_2 between 1.7 to 5.5mg/l The parameters in majority of water samples were within permissible limits as per the APHA (1995). The water is used for all the purposes but for drinking it is used after proper treatment.
Keywords: water quality, pH, TDS, transparency

Introduction:

Water is necessary factor sustenance of life on our planet, ground water or dam water is an important component of the water system for consumption like drinking, agriculture, livestock and industry. Today the dam water is gradually getting polluted due to ever increasing population, industrialization, urbanization and various other anthropogenic activities. It is the fact that most of the rural, towns and cities do not have access to safe drinking water despite investment from governing bodies and private organization in an effort to reduce pollution load and enhance quality of water. The assessment of water quality parameters in and around Yavatmal district has not been undertaken previously. However there is also no systematic study on the overall quality of water in this region has so far been undertaken that would provide a qualitative and quantitative results indicating the suitability of water for human consumption.

Present study is focused on as such as Six location of Ghatanji city, i.e. . The parameters studied are pH, transparency, hardness, TDS, DO and CO_2.

Materials and Methods:

The water samples were collected in two liters sterilized polythene bottles in the early hours of the day. Six days were required for the collection of water samples. Every day only one water sample had been collected and analyzed. pH, TDS, hardness, DO were measured at the sites by using Standard digital kit. Transparency was measured by using Secchi disc; remaining parameters like alkalinity and CO_2 measured as per the procedure described by Kodarkar (1992) and also guidelines given by APHA (1995).

Result and Discussion:

The results are as follows
Table-1 Transparency – (STD), Hardness, TDS, DO, CO_2-mg/l.

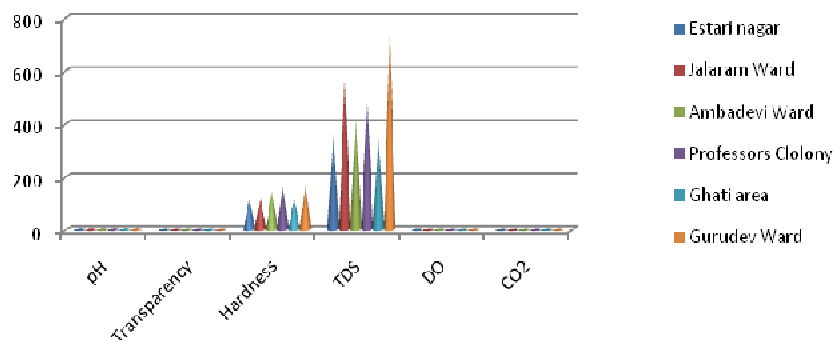| Name of the area	pH	Transparency	Hardness	TDS	DO	CO_2
Estarinagar	7.7	3.0	115	370	6.8	4.1
Jalaram Ward	8.3	3.0	120	570	5.0	1.7
Ambadevi Ward	8.1	2.8	143	430	7.1	2.8
Professors Clolony	8.6	3.5	173	480	6.3	5.5
Ghati area	7.8	3.6	115	360	5.8	3.1
Gurudev Ward	8.3	3.0	175	730	5.6	4.2

Fig-1. Variation in different parameters at different locations.

pH values ranged beween7.7 to 8.7. The lowest value recorded i.e. 7.7 was for Estari Nagar and highest value for Professors colony is 8.6. The water is potable when the pH ranges beween 6.5 to 8.5. The pH values are within the permissible limits which are used for drinking purposes.

Transparency: The values of transparency range between 2.7 to 5.5. The lowest value of Ambadevi ward is 2.7 and highest value of ghati area 3.6.

Hardness: The results of hardness range between 97 to 190. For drinking the water is potable and safe for all the purposes.

TDS : Total dissolve solids results are ranges betn 370 to 730. Compare to all parameters the TDS values shows more fluctuation. The water is safe to use for all the purposes.

DO: Dissolve Oxygen is one of the most important parameters their range is between 5.0 to 7.1. There are no any permissible limits regarding DO but the highest value show water is in good condition and the water body consider as a healthy ecosystem.(Figure7)

CO_2: The CO_2 values range between 1.7 to5.5.

Discussion:

On the basis of observation table and plotted graph it is clearly indicated that the different areas water will be use for all purposes like drinking, agriculture and industry but for drinking it should be filtered and then use. The agriculture and industry purposes it can be use directly.

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