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Microbiology and physico-chemical analysis of different sources of drinking water in Dahanu Taluka of Thane district

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ABSTRACT

The present research work is an attempt to investigate quality of different sources of drinking water in Dahanu taluka of Thane district, which covered the physico-chemical, microbiological parameters and the effect of contaminated water as related to human health. Due to illiteracy and various human activities the quality of drinking water in this area is likely to change and it is not good indicator as regards to human health. Total 10 stations were selected for collection of water samples at different locations in and around Dahanu taluka region viz. Bordi, Gholwad, Chikhla, Borigaon, Aagwan, Ashagad, Kasa, Kosbad, Dabon and Dahanu. Municipal corporation of Dahanu facilitates drinking water in limited area, in alternate to this people keeps option as hand pumps, wells, river and dams etc. but water without treatment is very dangerous for consumption to human beings therefore it is very important to assess the quality of drinking water in Dahanu taluka of Thane district. The present investigation will generates database for drinking water quality and many water born diseases in Dahanu taluka of Thane district which will be helpful for Municipal Corporation and Health department of Dahanu taluka. Presence of bacteria in water samples is not a good indicator immediate action is needed circumvent this problem and necessary antimicrobial disinfectants should be employed in an important water sources.

Keywords: Physicochemical Parameters, Microbiology, Drinking Water, Dahanu, Thane

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INTRODUCTION

Water is a resource that has many uses, including transportation, hydroelectric power, domestic, industrial and commercial uses. Water also support all forms of life our health, lifestyle and economic well beings[1].Water is the major constituent of all living things and needed by them for various purposes. The demand for quality drinking water had changed considerably with the development in olden days, the only requirement of drinking water has that it should be free flowing and non turbid[2] .Water is finite resource, essential for agriculture, industry and even human existence, without water of adequate quantity and quality, sustainable development will not be possible[3]. Clean, pure and safe water only exist briefly in nature and is immediately polluted by prevailing environmental factors and human activities. Water from most sources is therefore unfit for immediate consumption without some sort of treatment[4]. In India almost 70% of water has become polluted due to the discharge of domestic sewage and industrial effluents in to the natural water source, such as rivers, streams as well as lakes[5]. The world is fast growing with its technologies and the population on earth is increasing tremendously. So the dependence as well as exploitation of water resources is also increasing rapidly. It is not just the population increase alone but also the technology-aided excessive uses, abuses and, misuses of water resources that break the natural water cycle. Modern humans cannot advance without determining the right levels of uses for various purposes. Among various factors affecting the abundance and diversity of organisms, water quality is most

important which is mainly influenced by temperature, pH, salinity, dissolved gases, specially oxygen and carbon dioxide and nutrients. Major factors affecting microbiological quality of surface water discharges from sewage works and runoff from informal settlements. Indicator organisms are commonly used to assess the microbial quality of surface water and fecal coliforms are the most commonly used bacterial indicator of fecal pollution[6].

MATERIALS AND METHODS

Total 10 stations were selected for collection of water samples at different locations in and around Dahanu taluka region viz. Bordi, Gholwad, Chikhla, Borigaon, Aagwan, Ashagad, Kasa, Kosbad, Dabon and Dahanu. Water samples were collected from these sampling stations over a period of year from different sources such as tap water, hand pumps, wells, streams, rivers and dams etc. The water samples were collected in 2 liter plastic can and collected samples were immediately brought in the laboratory and analyses were carried out in the laboratory by following standard methods[7]- [11].

Physico-chemical analysis

Water temperature was recorded by a good quality centigrade thermometer with accuracy of +-0.10^{0}C. The pH of water sample was measured using a calibrated digital pH meter. Salinity was carried out in the laboratory by Argentometric method. For DO water sample was filled in 300 ml BOD bottles immediately after collection and treated with Winkler's reagent and analysis was carried out using Winkler's Iodometric method. Direct unseeded method was employed for the determination of BOD, water samples will be collected in standard BOD bottles of 300 ml capacity. The samples were incubated in BOD incubator at 20^{0}C for 5 days, after which DO was estimated using standard methods. Water samples were collected in 300ml bottles and COD was estimated using standard methods in the laboratory. Nitrite in the sample was allowed to react with sulphanilamide in acid solution .The resulting diazo compound was reacted with N-(1- napthyl)-ethylene diamine to form a highly colored azo dye. The light absorption was measured at 543 nm wave length. Excess of absorption due to turbidity was measured before adding diamine reagent and was subtracted from sample absorbance. Nitrate was reduced to nitrite by passing through a column packed with amalgamated cadmium and then determined by the method described above for nitrite. For phosphate, water was acidified with molybdate reagent was added to water sample to yield a phospho- molybdate complex which was reduced to highly coloured blue compound by ascorbic acid. The absorbance was measured at 882 nm wave length. The Fluoride content was analyzed by colorimetric method by using Alizerine dye as an indicator. Sets of test tubes were prepared by taking standard Fluoride solution of variable concentration. Alizerine dye was added in each test tube and the optical density (OD) was measured with 420nm wavelength. The standard graph was prepared[12]- [13].

Potassium content in water samples were estimated using standard methods. Chloride content in the collected water samples were estimated using standard methods. Sodium content in the collected water samples were estimated using standard methods. Alkalinity in the collected water samples were estimated using standard methods. Total suspended solids in collected water samples were determine using standard methods.

Bacteriological Examination

Water samples were collected in the sterile bottles and bacteriological examination was carried out in the laboratory immediately after collection. Fecal and total coloforms were performed using the standard membrane filtration technique. The 100ml water sample from each station were filtered using 0.45mm pore size, 47mm diameter filtered membrane as described by APHA (1998) [14]. Multiple tube technique was used for the enumeration of most potable numbers of coliform bacteria. E. coli were isolates by inoculating the sample in Bismuth green bile broth. Enteric bacteria isolated on the basis of their colonical, morphological and biochemical properties following Bergey's manual of determinative bacteriology, (1994) [15].The media was used for bacteriological analysis of water include plate count agar (PCA), nutrient agar (NA), and Eosin methylene blue agar (EMBA). All the medias were used for bacteriological analysis were weighed out and prepare according to the given instructions and directions. Many research papers published in national and international journals were followed for bacteriological analysis.

RESULTS AND DISCUSSION

Temperature

The temperature shows variation at different stations, maximum temperature was observed at station 6 (32.5^{0}C) and minimum temperature was observed at station 7 (29.6^{0}C) with an average of 31.1^{0}C in bore well water. In open well water temperature ranged between 27.5 to 31.5^{0}C (aver. 29.4^{0}C). The maximum temperature was observed at station 7 and minimum at station 5. In corporation water temperature range fluctuate between 27 to 30^{0}C with an average of 28.2^{0}C. The maximum temperature was observed at station 6 and minimum at station 2.

Table 1: Physico-chemical profile of bore well water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	Temp (^{0}C)	pH	DO (mg/l)	BOD (mg/l)	COD (mg/)	Sal. (mg/l)	TA (mg/l)	EC (ms)
S1	Bordi	31	7.84	3.4	1.6	8.2	1050	230	1.20
S2	Gholwad	30.6	7.09	4.1	2.1	14.1	1180	168	2.30
S3	Chikhla	32	7.45	2.8	1.9	17.9	2432	286	5.40
S4	Borigaon	31.8	7.64	3.3	1.5	23.8	1020	425	4.65
S5	Aagwan	31.5	6.43	5.4	2.0	19.5	640	196	1.39
S6	Ashagad,	32.5	6.75	5.9	1.8	27.8	510	215	0.76
S7	Kasa	29.6	6.25	4.8	2.3	27.9	670	264	1.73
S8	Kosbad	30.8	6.28	5.7	2.1	10.5	350	184	0.94
S9	Dabon	31.4	6.98	4.3	1.9	34.6	650	191	0.75
S10	Dahanu	30.6	6.87	5.6	1.7	21.5	1240	170	4.94

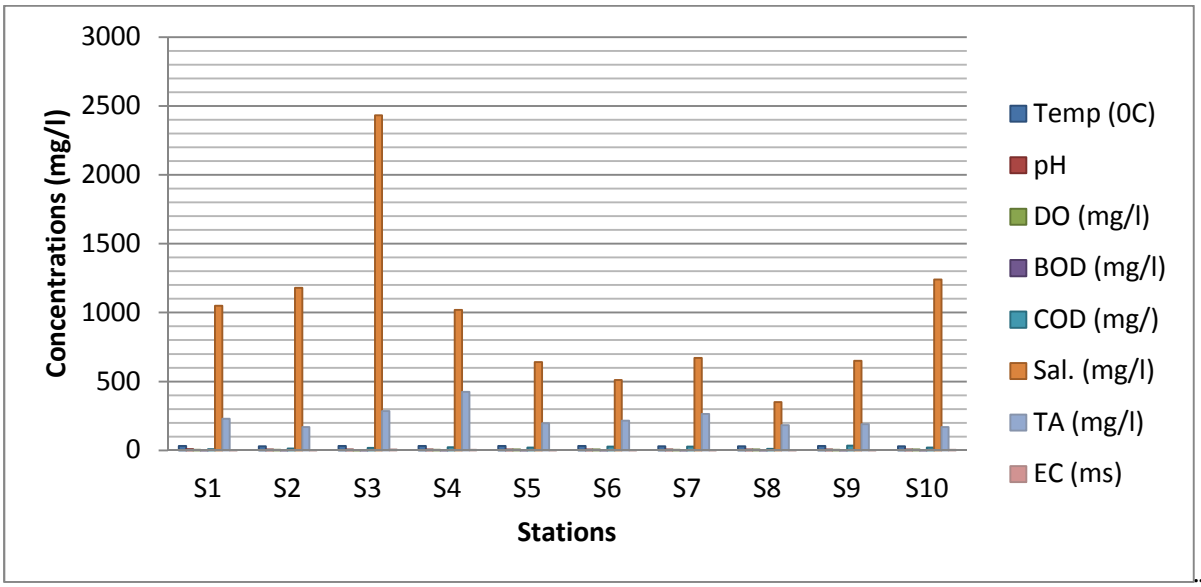

Fig.1: Variation of physic-chemical parameters of bore well water at different stations during 2013-14

Table 2: Physico-chemical profile of bore well water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	F (mg/l)	Na (mg/l)	K (mg/l)	Cl^- (mg/l)	NO_3^- (mg/l)k	PO_4^- (mg/l)	TSS (mg/l)	TH (mg/)
S1	Bordi	1.70	11.9	1.5	221	13.5	0.38	250	354
S2	Gholwad	1.35	13.4	0.9	234	11.6	0.23	320	298
S3	Chikhla	1.96	19.2	0.4	252	16.3	0.10	130	216
S4	Borigaon	1.80	9.4	0.8	241	7.1	0.14	275	380
S5	Aagwan	1.74	28.7	0.3	259	16.8	0.18	164	314
S6	Ashagad,	1.65	17.3	1.1	257	7.7	0.49	230	280
S7	Kasa,	1.20	4.1	0.2	263	9.5	0.13	340	320
S8	Kosbad	1.45	14.6	0.4	230	5.4	0.24	70	262
S9	Dabon	1.90	23.7	0.7	247	14.6	0.38	238	359
S10	Dahanu	1.28	19.2	0.6	291	8.2	0.43	190	217

pH

pH is a measure of the acidity or alkalinity of a substance and is one of the stable measurements of water. The pH range fluctuates between maximum of 7.84 at station 1 and minimum 6.25 at station 7 with an average of 6.97 in bore well water. In open well water pH ranged between 6.4 to 7.6 (aver.7.03). The maximum pH was observed at station 4 and minimum at station 5. In corporation water pH ranged between 6.3 to 7.8 with an average of 6.9. The maximum pH was observed at station 1 and minimum at station5.

DO

DO content in aquatic system is an important parameter to be determined as the existence of life is intimately linked with the availability of oxygen for their survival. The amount of oxygen present in the water is the net result of consumption for oxidation of organic matter and replenishment from the atmosphere and photosynthesis. The DO content is the most reliable measure to evaluate the state of water. In the present study DO range varied from

2.8 to 5.9 mg/l (aver. 4.5 (mg/l). The maximum DO was observed at station 6 and minimum at station 3 in bore well water. In open well water DO was ranged in 4.3 to 5.9 mg/l (aver.5.09 mg/l). The maximum DO was observed at station 8 and minimum at station 1. In corporation water DO raged between 3.5 to 5.9 mg/l with an average of 4.5 mg/l. The maximum DO was observed at station 10 and minimum at station 4.

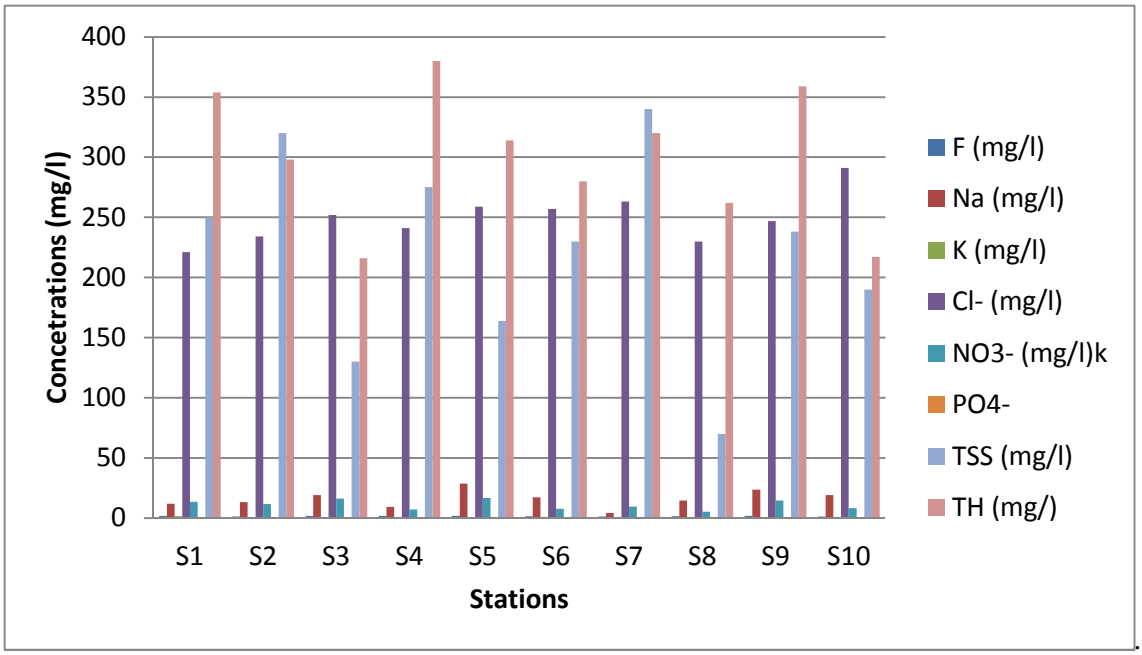

Fig.2: Variation of physic-chemical parameters of bore well water at different stations during 2013-14

Table 3: Physico-chemical profile of open well water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	Temp (^{0}C)	pH	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Sal. (mg/l)	TA (mg/l)	EC (mS)
S1	Bordi	29.0	7.25	4.3	1.9	18.4	1350	238	2.49
S2	Gholwad	28.5	7.48	5.1	2.5	12.3	1630	180	2.18
S3	Chikhla	30.5	7.2	4.8	1.5	27.9	1780	168	2.65
S4	Borigaon	29.5	7.65	5.3	2.1	13.9	1120	340	1.54
S5	Aagwan	27.5	6.40	4.4	1.7	29.5	860	218	1.74
S6	Ashagad,	30.0	6.70	5.6	1.4	37.8	450	231	1.76
S7	Kasa	30.5	6.50	4.8	2.7	7.9	320	229	0.65
S8	Kosbad	31.5	6.90	5.9	2.3	9.5	540	176	1.95
S9	Dabon	29.5	6.75	5.8	1.8	14.4	380	191	1.20
S10	Dahanu	28.0	7.50	4.9	1.2	10.5	1080	220	1.29

BOD

BOD is the amount of oxygen required for bacteria while stabilizing decomposable organic matter under aerobic conditions. It is used as an index to determine organic pollution. All natural waters contain some oxidizable matter of natural origin which includes a variety of organic compounds present in minute quantities much of which is derived from land drainage. BOD values exhibit a definite pattern of variation and fluctuation was in the range of 1.5 to 2.3 mg/l with an average of 1.89 mg/l. The maximum BOD value was observed at station 7 and minimum at station 4 in bore well water. In open well water BOD values ranged between 1.5 to 2.3 mg/l (aver.1.89 mg/l). The maximum BOD value was observed at station 7 and minimum at station 4. In corporation water BOD values ranged between 1.3 to 2.7 mg/l with an average of 1.8 mg/l. The maximum BOD value was observed at station 9 and minimum at station 8.

COD

The variation in COD was in the range of 8.2 to 34.6 mg/l (aver. 20.71 mg/l). The maximum COD value was observed at station 9 and minimum at station 1 in bore well water. In open well water COD ranged between 7.9 to 37.8 mg/l (aver.18.9 mg/l). The maximum COD value was observed at station 6 and minimum at station 7. In corporation water COD values ranged between 8.3 to 19.4 mg/l with an average of 13.6 mg/l. The maximum COD value was observed at station 9 and minimum at station 2.

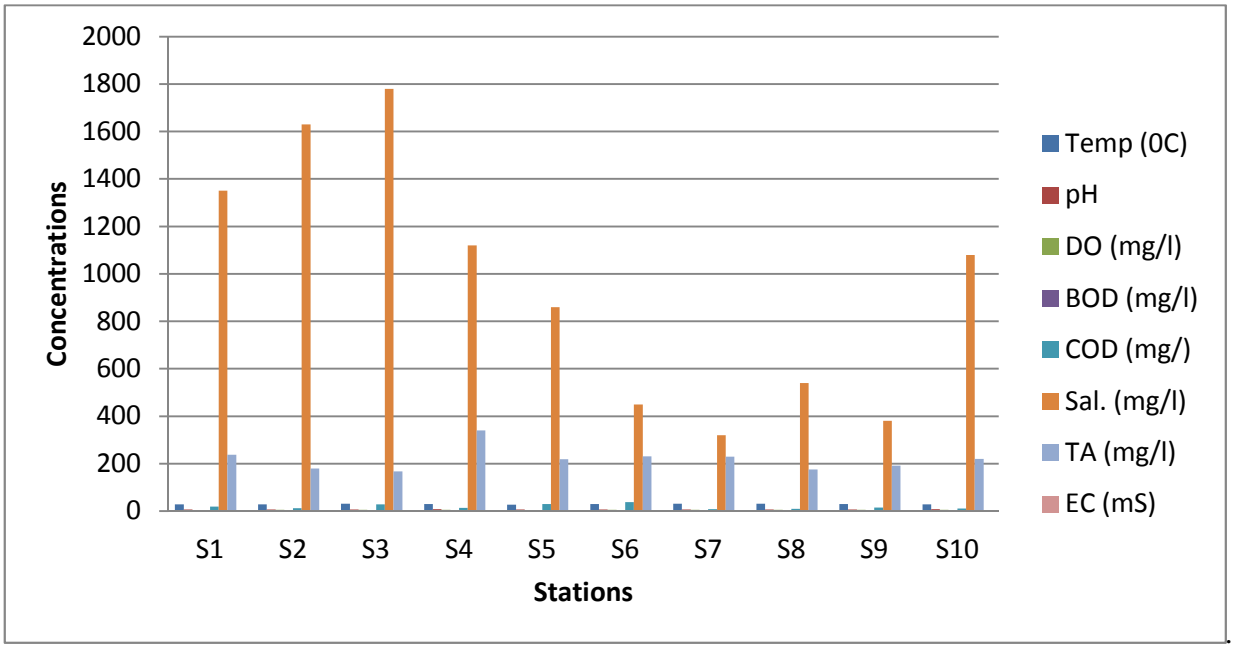

Fig: 3. Variation of physic-chemical parameters of open well water at different stations during 2013-14

Table 4: Physico-chemical profile of open well water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	F (mg/l)	Na (mg/l)	K (mg/l)	Cl^- (mg/l)	NO_3^- (mg/l)	PO_4^- (mg/l)	TSS (mg/l)	TH (mg/)
S1	Bordi	0.98	9.5	0.9	181	8.5	0.80	98	220
S2	Gholwad	2.01	11.4	1.2	240	10.6	0.30	57	350
S3	Chikhla	0.46	9.2	0.4	152	11.5	0.21	35	249
S4	Borigaon	1.39	19.3	0.6	298	17.6	0.40	70	521
S5	Aagwan	1.65	8..6	0.2	250	6.5	0.80	67	396
S6	Ashagad,	1.37	37.3	1.5	275	17..0	0.90	29	216
S7	Kasa,	2.34	18.5	1.2	231	12.8	0.10	87	240
S8	Kosbad	1.56	24.6	0.7	192	15.6	0.34	18	381
S9	Dabon	1.25	13.7	1.7	287	24.6	0.93	120	356
S10	Dahanu	0.91	29..5	0.8	219	18.9	0.13	56	247

Salinity

Salinity is one of the most important factors influencing the life in the aquatic habitat. Fluctuation in salinity on account of the southwest monsoon have profound influence on its flora and fauna[16]. The salinity was in the range of 350 to 2432 mg/l with an average of 1043.66 mg/l. The maximum salinity was observed at station 3 and minimum at station 8 in bore well water. In open well water salinity was in the range of 320 to 1780 mg/l (aver.967.5 mg/l). The maximum salinity was observed at station 3 and minimum at station 7. In corporation water salinity ranged between 240 t0 370 mg/l with an average of 311.6 mg/l. The maximum salinity was observed at station 3 and minimum at station 8.

Total alkalinity

The total alkalinity was in the range of 168 to 425 mg/l (aver.243.5 mg/l). The maximum alkalinity was observed at station 4 and minimum at station 2 in bore well water. In open well water total alkalinity ranged between 168 to 340 mg/l (aver. 224.9 mg/l). The maximum alkalinity was observed at station 4 and minimum at station 3. In corporation water total alkalinity was in the range of 120 to 180 mg/l with an average of 148.1 mg/l. The maximum alkalinity was observed at station 9 and minimum at station 6.

Electrical conductivity

The electrical conductivity ranged between 0.75 to 5.4 mg/l with an average of 2.51 mg/l. The maximum electrical conductivity was observed at station 3 and minimum at station 9 in bore well water. In open well water electrical conductivity was in the range of 0.65 to 2.65 mS (aver.1.72 mS). The maximum electrical conductivity was observed at station 3 and minimum at station 7. In corporation water electrical conductivity ranged between 0.58 to 1.7 mS with an average of 1.01 mS. The maximum electrical conductivity was observed at station 2 and minimum at station 9.

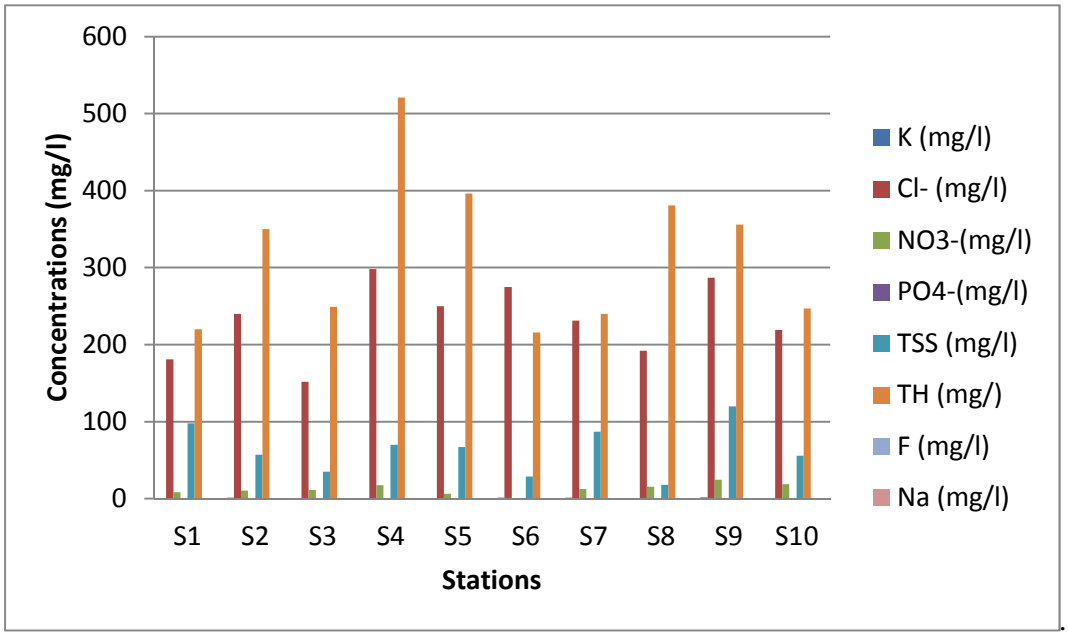

Fig. 4: Variation of physic-chemical parameters of open well water at different stations during 2013-14

Table 5: Physico-chemical profile of corporation water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	Temp (^{0}C)	pH	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Sal. (mg/l)	TA (mg/l)	EC (mS)
S1	Bordi	27.5	7.83	4.7	1.5	11.2	310	130	0.90
S2	Gholwad	27.0	6.80	3.9	1.9	8.3	350	152	1.70
S3	Chikhla	28.0	7.16	4.1	1.4	17.5	370	160	0.79
S4	Borigaon	28.5	7.54	3.5	2.5	12.8	330	145	1.30
S5	Aagwan	29.0	6.30	5.1	1.9	9.7	340	137	0.82
S6	Ashagad,	30.0	6.45	3.9	2.4	13.8	320	120	0.69
S7	Kasa	28.5	6.39	4.9	1.7	12.9	270	129	1.32
S8	Kosbad	27.5	6.54	5.2	1.3	16.5	240	165	0.99
S9	Dabon	28.0	6.75	4.2	2.7	19.4	260	180	0.58
S10	Dahanu	28.5	7.45	5.9	1.3	13.5	340	160	0.76

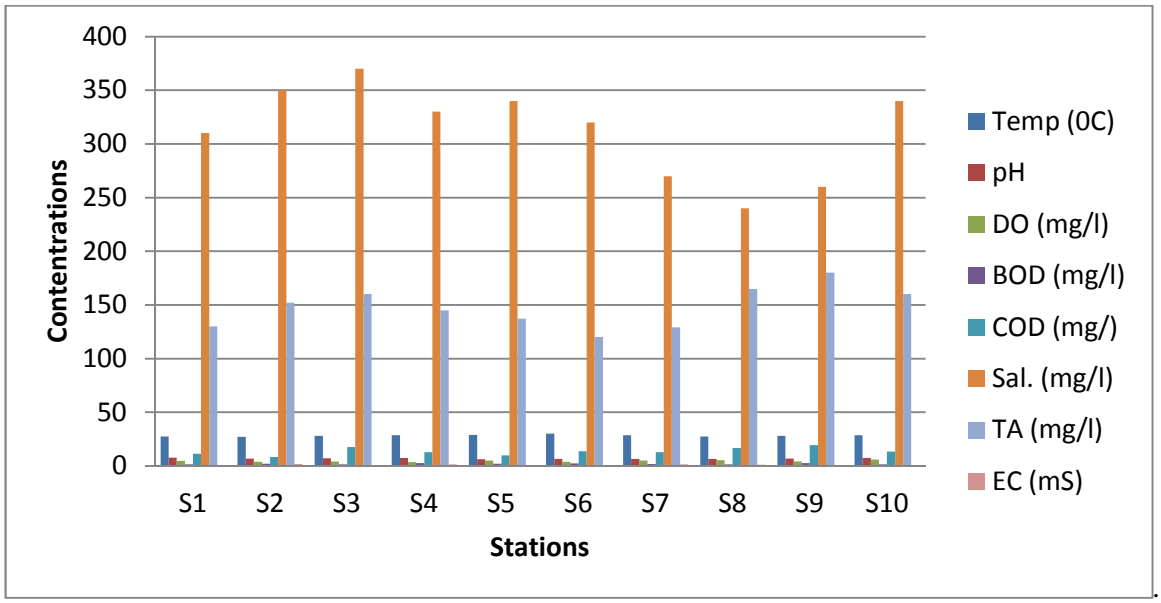

Fig. 5: Variation of physic-chemical parameters of corporation well water at different stations during 2013-14

Fluoride

The fluoride concentration in bore well water ranged between 1.2 to 1.96 mg/l with an average of 1.59 mg/l. The maximum fluoride concentration was observed at station 3 and minimum at station 7. In open well water fluoride concentration was in the range of 0.46 to 2.34 mg/l (aver.1.39 mg/l). The maximum fluoride concentration was observed at station 7 and minimum at station 3. In corporation water fluoride concentration ranged between 0.8 to 1.2 mg/l with an average of 1.02 mg/l. The maximum fluoride concentration was observed at station 1 and minimum at station 3.

Table 6: Physico-chemical profile of corporation water samples collected from different stations of Dahanu Taluka in Thane District during 2013-14

Stations	Places	F (mg/l)	Na (mg/l)	K (mg/l)	Cl- (mg/l)	NO3- (mg/l)	PO4- (mg/l)	TSS (mg/l)	TH (mg/)
S1	Bordi	1.20	5.4	0.7	120	3.4	0.13	40	220
S2	Gholwad	0.98	3.6	1.2	184	8.3	0.33	34	290
S3	Chikhla	0.80	9.2	0.8	170	6.9	0.16	50	260
S4	Borigaon	1.05	6.7	0.6	192	3.2	0.19	42	342
S5	Aagwan	0.85	10.1	1.0	110	8.9	0.08	32	189
S6	Ashagad,	1.20	8.5	0.9	152	7.2	0.43	47	141
S7	Kasa,	0.90	7.4	0.5	90	4.4	0.38	32	210
S8	Kosbad	1.00	4.2	0.2	127	5.7	0.29	34	230
S9	Dabon	1.20	5.2	0.7	121	3.8	0.12	40	190
S10	Dahanu	1.10	9.6	0.4	145	6.5	0.16	45	265

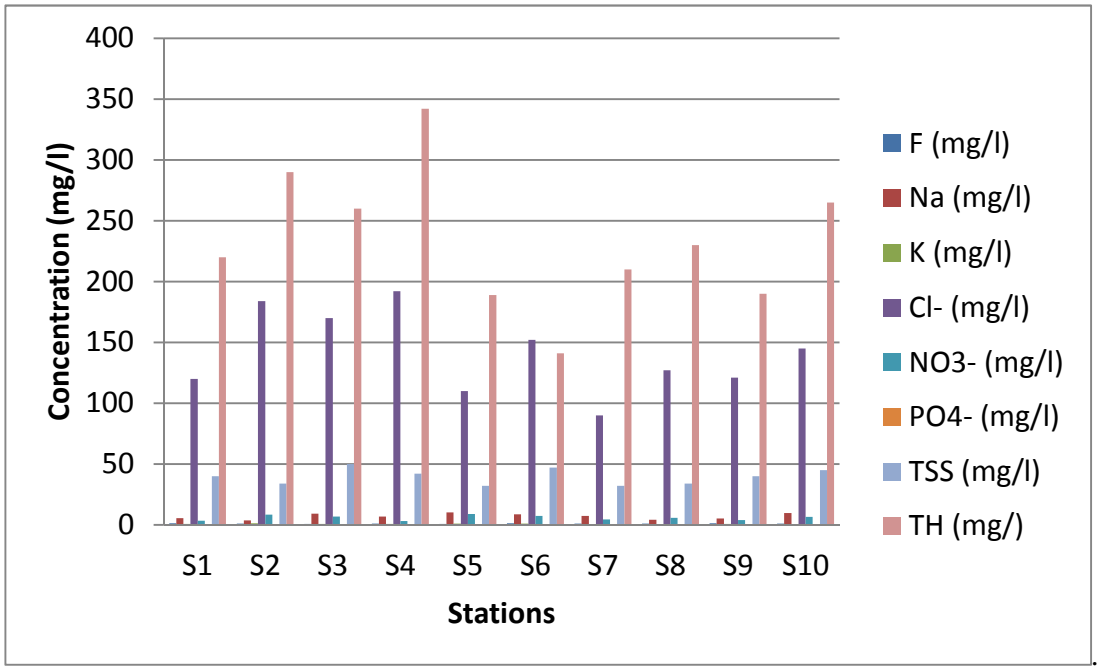

Fig. 6: Variation of physic-chemical parameters of corporation water at different stations during 2013-14

Sodium

The sodium concentration in bore well water ranged between 4.1 to 28.7 mg/l with an average of 16.19 mg/l. The maximum sodium concentration was observed at station 5 and minimum at station 7. In open well water sodium concentration was in the range of 9.2 to 37.3 mg/l (aver.19.0 mg/l). The maximum sodium concentration was observed at station 3. and minimum at station 3. In corporation water sodium concentration ranged between 3.6 to 10.1 mg/l with an average of 6.96 mg/l. The maximum sodium concentration was
observed at station 5 and minimum at station 2

Potassium

The potassium concentration in bore well water ranged between 0.2 to 1.5 mg/l with an average of 0.71 mg/l. The maximum potassium concentration was observed at station 1 and minimum at station 7. In open well water potassium concentration was in the range of 0.2 to 1.7 mg/l (aver.0.92 mg/l). The maximum potassium concentration was observed at station 9 and minimum at station 5. In corporation water potassium concentration ranged between 0.2 to 1.2 mg/l with an average of 0.7 mg/l. The maximum potassium concentration was

observed at station 2 and minimum at station 8.

Chloride
The chloride concentration in bore well water ranged between 221 to 291 mg/l with an average of 250.5 mg/l. The maximum chloride concentration was observed at station 10 and minimum at station 1. In open well water chloride concentration was in the range of 152 to 298 mg/l (aver.231.2 mg/l). The maximum chloride concentration was observed at station 4 and minimum at station 3. In corporation water chloride concentration ranged between 90 to 192 mg/l with an average of 141.08 mg/l. The maximum chloride concentration was observed at station 4 and minimum at station 7.

Nitrate
The chloride concentration in bore well water ranged between 5.4 to 16.8 mg/l with an average of 11.07 mg/l. The maximum chloride concentration was observed at station 5 and minimum at station 8. In open well water chloride concentration was in the range of 6.5 to 24.6 mg/l (aver.14.3 mg/l). The maximum chloride concentration was observed at station 9 and minimum at station 5. In corporation water chloride concentration ranged between 3.2 to 8.9 mg/l with an average of 5.86 mg/l. The maximum chloride concentration was observed at station 5 and minimum at station 4.

Phosphates
The phosphate concentration in bore well water ranged between 0.1 to 0.49 mg/l with an average of 0.27 mg/l. The maximum phosphate concentration was observed at station 6 and minimum at station 3. In open well water phosphate concentration was in the range of 152 0.1 to 0.93 mg/l (aver. 0.49 mg/l). The maximum phosphate concentration was observed at station 9 and minimum at station 7. In corporation water phosphate concentration ranged between 0.08 to 0.43 mg/l with an average of 0.23 mg/l. The maximum phosphate concentration was observed at station 6 and minimum at station 5.

Total suspended solids (TSS)
The total suspended solids in bore well water ranged between 70 to 340 mg/l with an average of 218.08 mg/l. The maximum total suspended solids were observed at station 7 and minimum at station 8. In open well water total suspended solids was in the range of 18 to 120 mg/l (aver. 64.5 mg/l). The maximum total suspended solids were observed at station 9 and minimum at station 8. In corporation water total suspended solids ranged between 32 to 50 mg/l with an average of 39.8 mg/l. The maximum total suspended solids were observed at station 3 and minimum at station 5.

Total Hardness
The total hardness in bore well water ranged between 216 to 380 mg/l with an average of 299.6 mg/l. The maximum total hardness was observed at station 4 and minimum at station 3. In open well water total hardness was in the range of 216 to 521 mg/l (aver.326.08 mg/l). The maximum total hardness was observed at station 4 and minimum at station 6. In corporation water total hardness ranged between 141 to 342 mg/l with an average of 235 mg/l. The maximum total hardness was observed at station 4 and minimum at station 6.

Microbiological Analysis
The microbial study was performed on randomly selected 30 samples from different water sources viz. bore well, open well and corporation water. Presumptive test was performed to all collected samples from 10 stations. The coliform bacteria produce both gas and acid in presumptive test. Presence of coliform bacterial contamination in the water sample was confirmed by conducting Brilliant green bile lactose broth test. The colony had the morphological characteristics of round form, flat type elevation, pink in colour and dry surface. Morphological strain was analogous to *Escherichia coli* and *Kellebsiela*. Out of which 20 samples were to have microbial numbers with in the permissible limit. Aerobic microbial count in bore well water was ranged between 52.7 to 167.5 cfu/ml (aver. 96.5 cfu/ml). In open well water aerobic microbial count was in the range of 115.5 to 226.5 cfu/ml (aver. 162.5 cfu/ml). In corporation water aerobic microbial count was 12.5 to 39.6 cfu/ml (aver. 24.6 cfu/ml). Presence of bacteria in water samples is not a good indicator immediate action is needed circumvent this problem and necessary antimicrobial disinfectants should be employed in an important water sources.

CONCLUSION

Municipal corporation of Dahanu facilitates drinking water in limited area, in alternate to this people keeps option as hand pumps, wells, river and dams etc. but water without treatment is very dangerous for consumption to human beings therefore it is very important to assess the quality of drinking water in Dahanu taluka of Thane district. The research area was selected keeping in view that the major sources of water supply for domestic and

agriculture purpose, various pollutants enter human food chain via consumption of different flora and fauna and contaminated water itself causing bioaccumulation of different metals in human body which are responsible for various diseases. The present research project is an attempt to investigate quality of different sources of drinking water in Dahanu taluka of Thane district which covered the physico- chemical, microbiological parameters and the effect of contaminated water as related to human health. Due to illiteracy and various human activities the quality of drinking water in this area is likely to change and it is not good indicator as regards to human health. Therefore it very necessary to investigate quality of different sources of drinking water in Dahanu taluka of Thane district continuously. The present investigation will generates database for drinking water quality and many water born diseases in Dahanu taluka of Thane district which will be helpful for Municipal Corporation and Health department of Dahanu taluka. Presence of bacteria in water samples is not a good indicator immediate action is needed circumvent this problem and necessary antimicrobial disinfectants should be employed in an important water sources.

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