

Comparative Study between Used and Unused water bodies from Latur City, Maharashtra, India

Bondage Shivraj Dattoba¹, Dr. V. N. Waghmare²

¹Research Scholar, Maulana Azad College, Aurangabad, Maharashtra, India

²Assistant Prof. Department of Zoology, Mahatma Basweshwar College, Latur, Maharashtra, India

ABSTRACT

The study was arranged during December 2016. The present work is aimed to compare the physico-chemical properties of Used and Unused water bodies from Latur City, Maharashtra, India. The analytical investigation reveals the study of physico-chemical parameter of used and unused water bodies. The various parameters like pH, Dissolved solids, chlorides, O₂ and CO₂ were analyzed.

Keywords: Bore well, Lake, TDS, Ca, Electrical Conductivity,

I. INTRODUCTION

In Latur city of Maharashtra there are many water bodies that's some are used for human consumption. Various water bodies are bore well its water will be used for drinking to human and cattle as well as other domestic and commercial use. Some water bodies are unused that are confined water bodies due to a variety of urban degradation problems from unused water bodies contributing the polluted water. The unused water bodies' water are not used in any consumption due poor quality of water in this water high density of zooplankton and phytoplankton B. R. Sudani (2015). That's some water bodies are nearest of temple. The devotee thrown the 'Nirmalya' in water so the material of 'Nirmalya' spoiled and water becomes polluted.

In Latur city drainage system not properly planned so drainage water are spread anywhere and pollute the some unused water bodies like some internal city lakes Reeta Bajpai (2012).

Thus, there are need to generate information about water quality of such water bodies

II. METHODS AND MATERIAL

The water samples for physico-chemical analysis were collected for Unused water bodies are some lakes and some wells are near the temple place of city these are Shani temple well, Siddheshwar temple well, Balaji temple well, Hanumantwadi lake, Kava lake, Maruti temple well, Mataji Nagar lake, Nana Nani park lake, S.T. Depo lake, and Khani lake.

The water samples for used water bodies are some bore well water from Latur city these are Ambajogai road bore well (S1), Sai road bore well (S2), Arvi bore well (S3), India nagar bore well (S4), Shree nagar bore well (S5), Rajiv Gandhi Chowk bore well (S6), Kanheri road bore well (S7), Tawarja colony bore well (S8), Signal Camp borewell (S9), Mitra nagar bore well (S10).

Separate samples were collected from sampling stations and analyzed in laboratory and compare some physico-chemical parameters like DO, Co₂, TDS, pH, Cl, EC, Ca and Mg etc. of both type of water bodies in February 2016 and analyzed in laboratory by using standard methods prescribed by APHA (1989), Trivedi R. K. and Goel P.K. (1986).

Table 1: Parameters of unused water bodies

Sr. No.	Water Sample	DO	Co ₂	TDS	pH	Cl	E.C. (uS/cm)	Ca	Mg
1	Shani Temple well	1.86	0.5	1.6	7.5	25.23	2.304	27.1	18.06
2	Siddheshwar Temple well	1.03	0.7	1.7	7.5	30.06	3.478	22.3	17.04
3	Balaji Temple well	1.06	0.76	1.4	7.5	51.30	2.739	23.4	17.7
4	Hanumantwadi Lake	1.46	0.16	1.2	7.2	40.23	2.608	24.5	19.3
5	Kava Lake	1.00	0.36	1.5	7.5	13.16	2.739	24.6	19.7
6	Marot Temple well	1.30	0.20	1.4	7.5	14.86	2.869	23.9	19.04
7	Mataji Nagar Lake	1.20	1.2	1.6	7.5	25.16	2.869	23.6	19.5
8	Nana Nani park lake	2.66	0.36	1.6	7.4	19.16	2.869	24.5	19.7
9	S.T. Depo Lake	2.89	2.35	1.7	7.6	22.18	2.304	24.6	18.4
10	Khani Lake	2.90	2.14	1.8	7.3	23.25	2.739	24.9	18.5

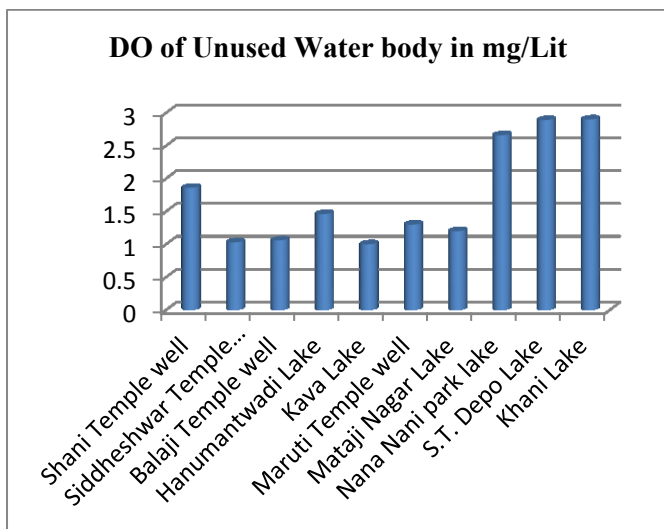


Figure 1: Shows DO in Unused water bodies.

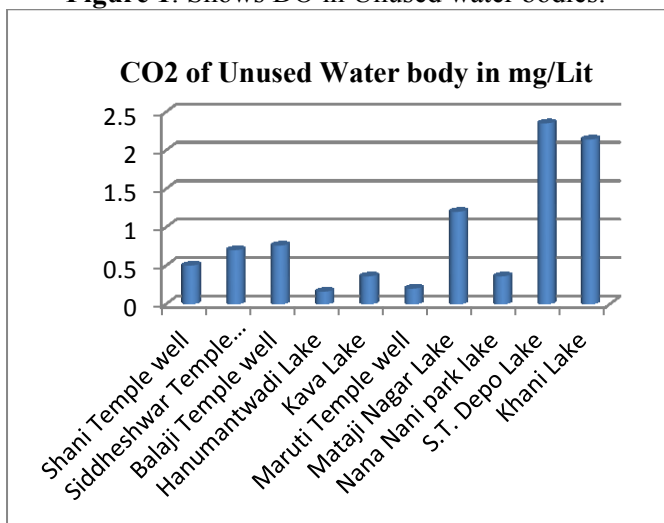


Figure 2: Shows CO₂ in Unused water bodies.

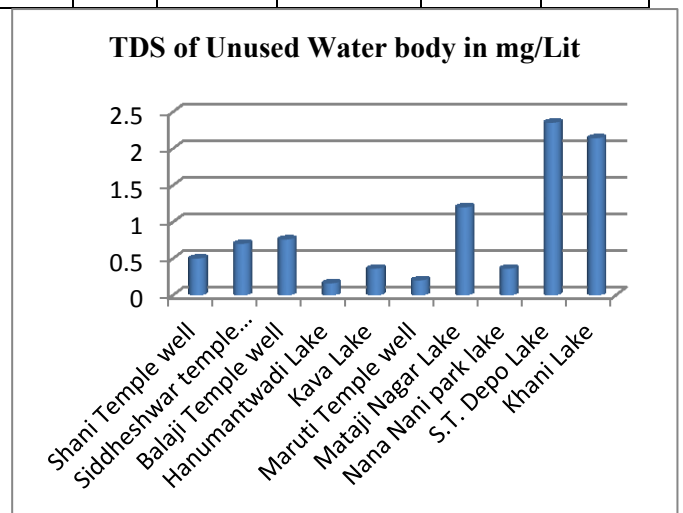


Figure 3: Shows TDS in Unused water bodies

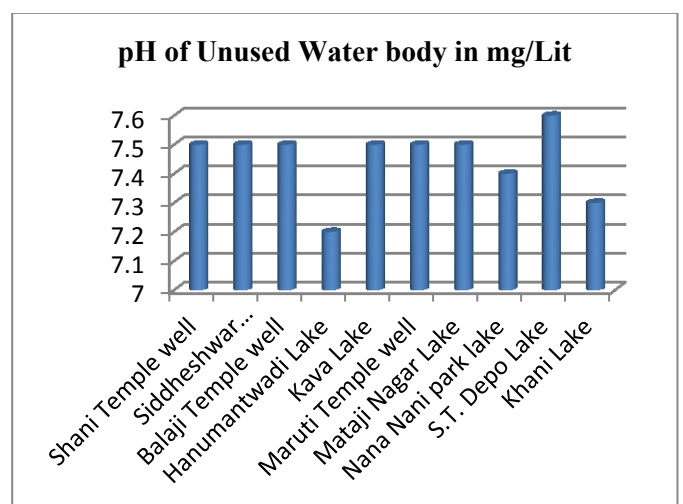


Figure 4: Shows pH in Unused water bodies

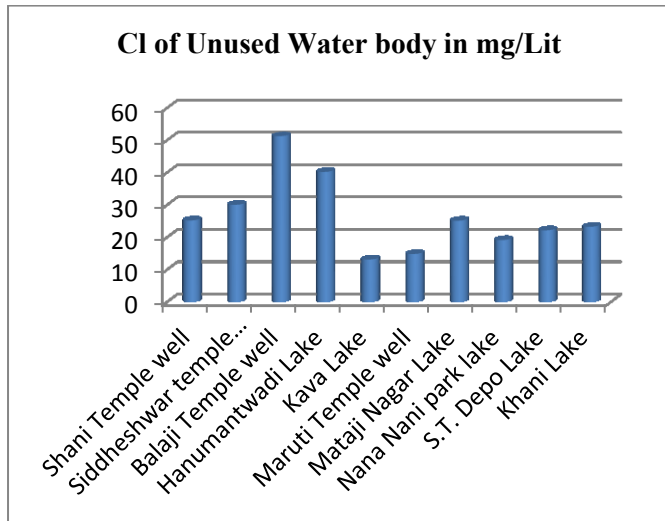


Figure 5: Shows Cl in Unused water bodies

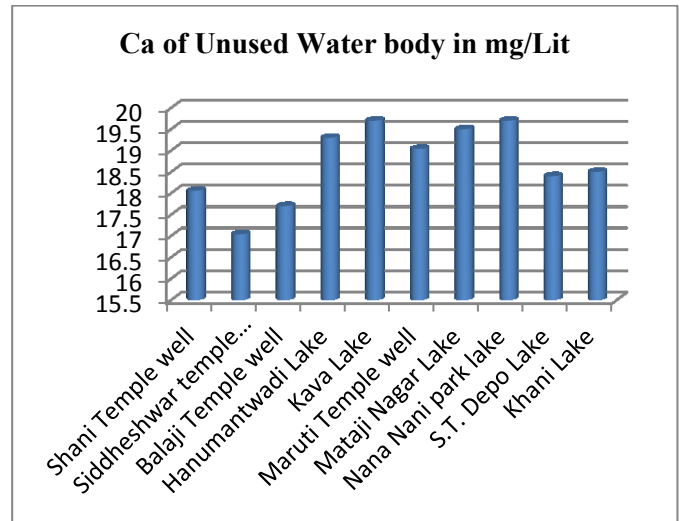


Figure 7: Shows Ca in Unused water bodies

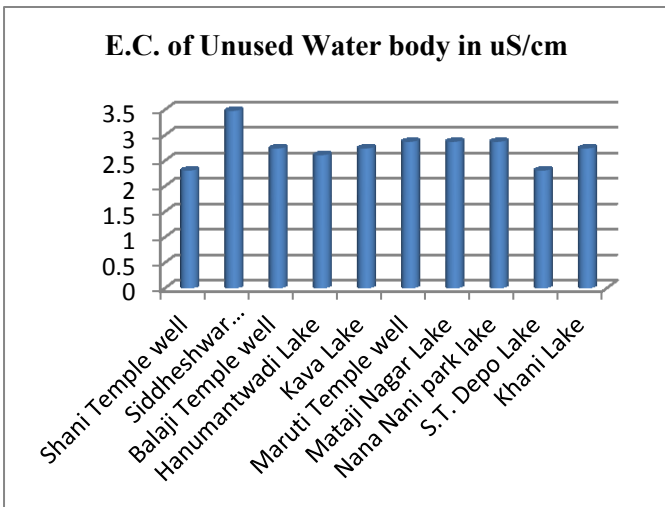


Figure 6: Shows E.C. in Unused water bodies

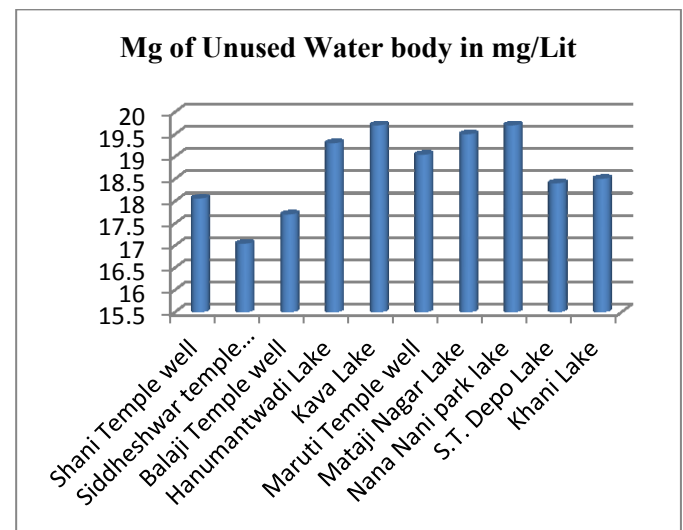


Figure 8: Shows Mg in Unused water bodies

Table 2: Parameters of Used water bodies

Sr. No.	Water Sample	DO	Co ₂	TDS	pH	Cl	E.C. (uS/cm)	Ca	Mg
1	S1	2.64	10.86	0.9	6.68	52	1.304	22.1	14.06
2	S2	2.53	10.80	1.4	7.71	180	3.478	20.3	13.04
3	S3	2.28	10.52	1.1	7.62	40	1.739	21.4	14.7
4	S4	3.82	11.32	1.2	7.42	135	2.608	20.5	13.3
5	S5	2.79	10.64	1.2	7.84	90	1.739	21.6	13.7
6	S6	2.34	10.35	0.9	6.68	50	0.869	22.4	14.04
7	S7	3.14	11.18	0.7	7.28	75	0.869	21.6	12.5
8	S8	2.18	9.28	0.5	6.32	30	0.869	22.5	13.7
9	S9	3.55	9.85	0.6	6.58	51	1.304	21.6	12.4
10	S10	3.18	11.31	0.8	6.67	120	1.739	21.9	13.2

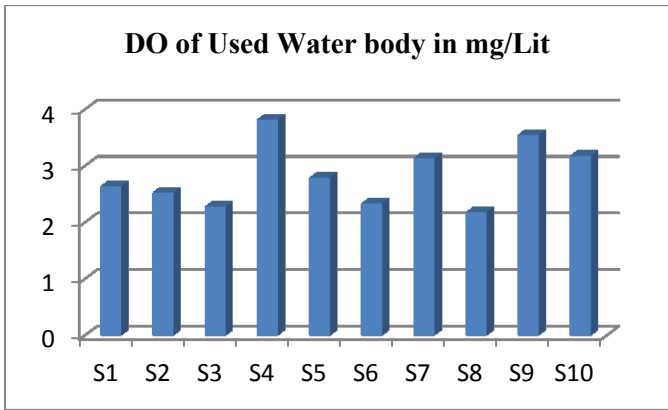


Figure 9 : Shows DO in Used water bodies

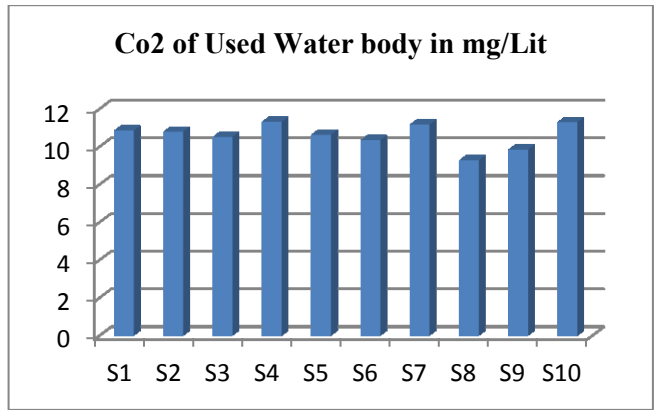


Figure 10: Shows Co2 in Used water bodies

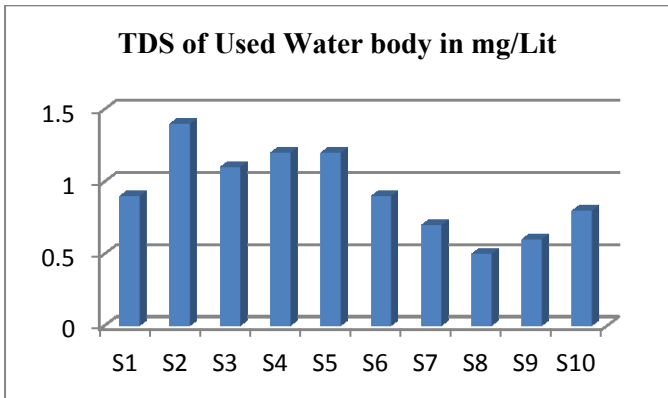


Figure 11: Shows TDS in Used water bodies

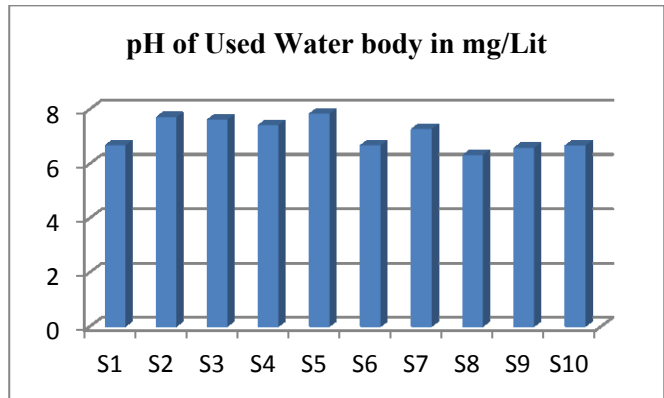


Figure 12 : Shows pH S in Used water bodies

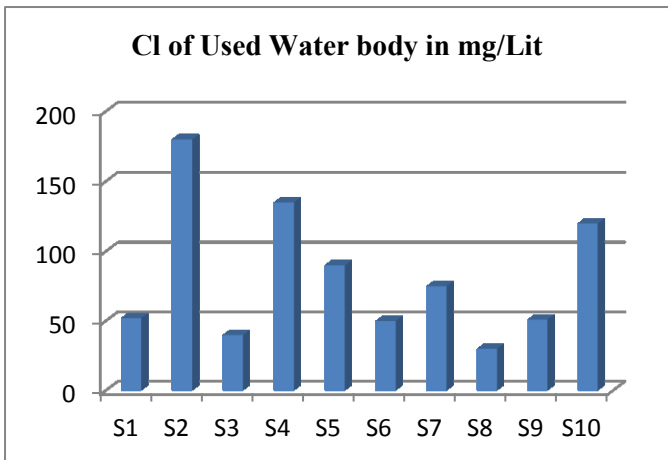


Figure 13: Shows Cl in Used water bodies

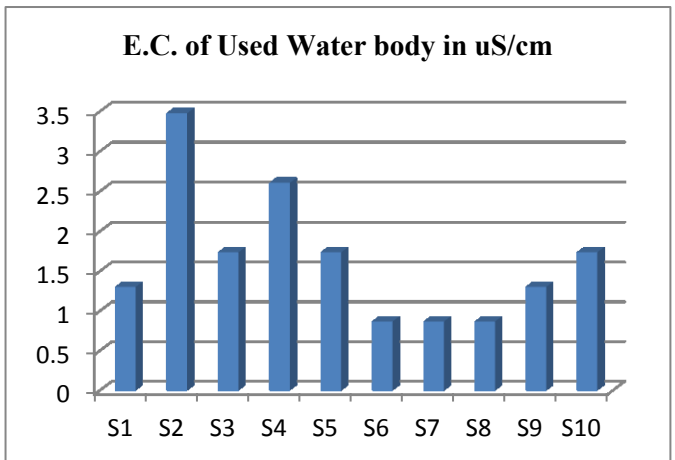


Figure 14: Shows E.C. in Used water bodies

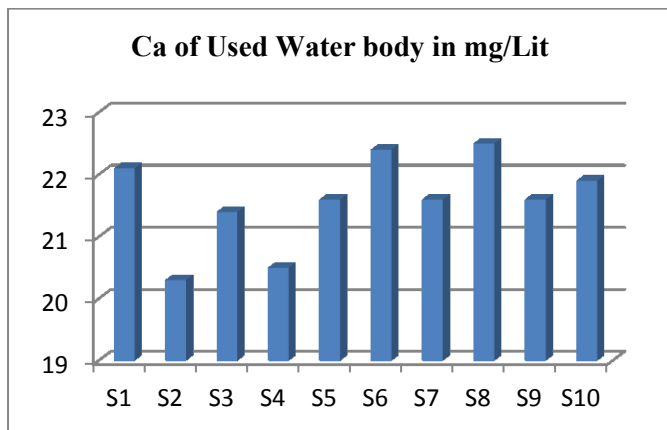


Figure 15: Shows Ca in Used water bodies

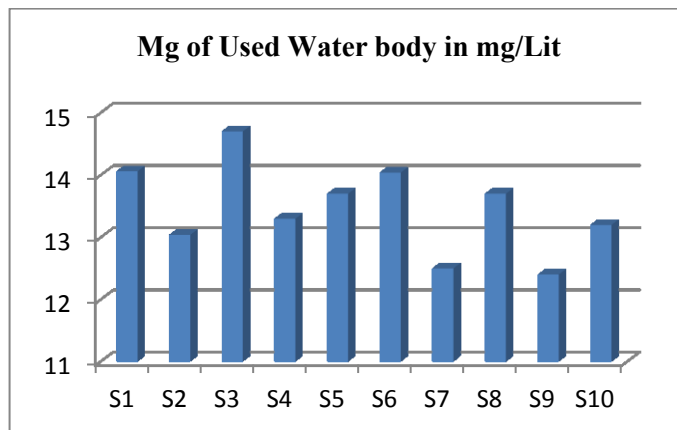


Figure 16 : Shows Mg in Used water bodies

III. RESULTS AND DISCUSSION

The Do is found between ranges of 1 to 2.90 mg/Lit. in Unused water bodies And appeared 2.28 to 3.82 mg/Lit in used water bodies reported by Savitha N. *et, al.* (2011). The CO_2 is found between ranges of 0.16 to 2.35 mg/Lit. in unused water bodies and found 9.28 to 11.32 mg/Lit. in used water bodies Bhawankar *et, al.* (2011). The CO_2 lower in unused water bodies than used water bodies due the presence of flora which is play a role of photosynthesis. The TDS is found in unused water bodies between range of 1.2 to 1.8 mg/Lit. and 0.5 to 1.4 mg/Lit. it is showing that the lot of soil particles are dissolved in surface water and these water entered in to unused water bodies Jain S.M. *et, al.* (1996). The pH is found in unused water bodies between 7.2 to 7.6 and 6.32 and 7.84 in used water bodies, it not more differential Anusha *et, al.*(2006). The Chlorides is found between ranges of 13.16 to 51.30 mg/Lit. in unused water bodies and 30 to 180 mg/Lit. Is found in used water bodies it more than unused water bodies due the used water body water sample form bore well water some bore wells are very deep and water more content of chlorides Mehari Muuz Weldemariam (2013). The electrical conductivity of unused water bodies are between 2.304 to 3.478 uS/cm and 0.869 to 3.478 uS/cm in used water bodies it is effect of more TDS in unused water bodies Qureshimatva UM *et, al.* (2015). The Calcium is appear in unused water bodies is 22.3 to 27.1 mg/Lit and 20.3 to 22.5 mg/Lit in used water bodies it partially similar slightly increase in unused water bodies B. S. Deshmukh (2012). The magnesium is found between range of 18.4 to 19.7 mg/Lit in unused water bodies and 12.4 to 14.7 mg/Lit is used water bodies Ingole S.B. *et, al.*(2009).

IV. ACKNOWLEDGEMENT:

The author is thankful of Department of Zoology, Mahatma Baswashwar College, Latur for allow to physico chemical experiment in Laboratory.

V. REFERENCES

- [1]. Anusha C. Pawar, S. Jitender Kumar Naik, Naresh Jadhav, V. Vasundhara Devi and Smita C. Pawar (2006) was Studied on Physico-Chemical Study of Ground Water Samples from Hyderabad, Andharapradeh, India J. Aqua. Biol., Vol, 21(1), 2006: 118-120.
- [2]. APHA (1989) Standard methods for the examination of water and waste water, APHA 17th Edition Washington D.C. pp.1193.
- [3]. Bhawankar A.S., Mudkhede L.M., Shivanikar S. V. (2011) was studied on Physico-Chemical Status of Kudala Dam Tq. Umari Dist. Nanded Maharashtra, India J. Aqua. Biol., Vol, 26(1), 2011: 26-30.
- [4]. B, R, Sudani was studied in Comparative Study of Chemical, Physical and Biological Analysis of Some Pond Water Ecosystem in Valsad of the State Gujarat, India. Int. Jou. Of Chem. & Phy. Sciences Vol. 4, No. 1, Jan-Feb 2015. Pp :75-82
- [5]. Deshmukh B. S. (2012) was studied on Hydrobiological Study of River Pravara In Ahmednagar District Maharashtra. Bionano Frontier (2012) Eco revolution 89-92.
- [6]. Ingole S.B. was studied on Water Quality Studies on Majalgaon Dam, Beed District, Maharashtra J. Aqua. Biol., Vol, 24(1), 2009: 71-76.
- [7]. Jain S. M. , Meenakshi Sharma and Ramesh Thakur (1996) Seasonal variations in physic-chemical paratmers of halali reservoir of vidisha district, India J. Ecobiol., 8(3): 181-188.

- [8]. Mehari Muuz Weldemariam (2013) was studied in Physico-chemical Analysis of GudBahri River Water of Wukro, Eastern Tigray ,Ethiopia. Int. Jou. Of Scientific and Research Pub. Vol.3, Issue 11, November 2013. pp: 1-4.
- [9]. Qureshmatva U.M., Maurya R.R., Gamit S.B. , Patel R.D. and Solanki H.A. (2015) was studied on Determination of Physico-Chemical Paramters and Water Quality Index (Wqi) of Chandlodia Lake, Ahmedabad, Gujrat, India. J Environ Anal Toxicol 2015, 5:4.
- [10]. Reeta Bajpai (2012) was studied in Comparative Analysis of Physicochemical Parameters of Hasdeo River Barrage & Arpa River Water Samples of Bilaspur Region. Int. J. of Scientific & Research Pub. Vol 2, Issue 9, September 2012. pp 1-5.
- [11]. Savitha N, Sadanand M., Yamakanamardi (2011) was studied on Physico-Chemical Paramters in Three Lakes in Mysore District, Karnatka, India J. Aqua. Biol., Vol, 26(1), 2011: 41-55.
- [12]. Trivedi R.K. and Goel P.K. (1986) Chemical and biological methods for water pollution studies. Environmental publications, Karad, India pp :122.