International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Quality of Lentic Water of Makani Pond in Latur District, Maharashtra

Jadhav S.S.

Department of Zoology, Amolak Science College, Kada, Dist Beed, Maharashtra, India

Abstract: ***The major consumptive use of water is for agriculture purpose and particularly for irrigation in the world. But in some areas irrigation is a problem because of scanty water. In some places water must be piped hundreds of kilometers for irrigation requires great deal of energy. The presently lake is used for domestic, irrigation purpose and drinking purpose. The present study deal on lake, which is situated at village Makani district Latur. The present study undertaken to study of physic chemical parameters of A Makani pond water to study like dissolved oxygen, hydrogen ion concentration, chlorides, total solids, sodium, calcium, potassium and hardness.***

Keywords: Fresh water pond, physic chemical Characteristics

1. Introduction

Water is said liquid of life and it is the essence of all living process. Water is universal solvent as it dissolves more substance than any other liquid without undergoing any chemical change. Thus water the unique component of nature has played an important role in the life from molecules to man, hence since the time unmemorable the great human civilization has originated, evolved and flourished around the water resources. Water covers about 70% of the earth surface but only 2.7% of the total water is fresh water of which 1% is ice free water in the river lake, atmosphere and as biological water.

Hence now days raw water from the water bodies is being analyzed for its utilizes like drinking, aquaculture and irrigation purpose. Considerable work has been done on physic chemical and biological assessment and their functional dynamics in aquatic environment all over the world. Water is essential for life and for its betterments continuation on earth.

The water body selected for the present investigation is a perennial natural water body at Bhategaon District Parbhani. It is perennial natural pond which receives rain water from surrounding hills. In the top sheet the position of the pond is at 19-250° latitude and 77-250°. The catchment area pond is 15.54 sq. kilometer, submerged area 46.94 hector, annual utilization 2.07 sq. kilometer top width of wall 360m. The length of earthen dam is 452 m and maximum flood lift 1.50 m irrigation was the main objective behind the pond.

Sinha *et al* (1990) carried out the assessment of drinking water quality of Santhal Pargana Bihar. Effect of mass bathing on water quality of Pushka rsarovar was studied by Lal (1996), Salaskar (1997) studied the water quality characteristics of Anehala lake, Kalyan (M.S.) Agarkar *et al* (1998) studied the water quality of analyzing physic-chemicals character of water from Buldhana District.

Present study was undertaken to ascertain lentic water quality status of a Makani pond in LaturDistrict. The impoundment is mainly used for domestic and irrigation purpose.

2. Material and Methods

During present study of Makani pond water samples were collected in the morning in the first week of each month from December to May from five sampling station Spot – S1, Spot- S2, Spot – S3, Spot-S4 and Spot–S5 considering addition of water , topography and utility of water. Water samples were collected in reutilised plastic bottles. The sample were carried immediately to the laboratory for analysis of physicochemical parameters like water temperature, PH,, were recorded at sampling sites only. Dissolved oxygen, chlorides, total solids, sodium, potassium,, hardness, calcium were analyzed in the laboratory according to the methods of APHA(1998), Kodarkar (1998), Trivedi et al., (1987). For simplicity and convenience here values interpret are means of monthly values of different physic chemical factors.

3. Result and Discussion

Table: The means of monthly values of different physic chemical parameter

Criteria	Permissible level	WHO	ISI	Range	Mean
Temperature	Narrative	--	--	26.1 to 33.5º	28.9
pH	6.0 to 8.5	7.0 – 8.5	6.5 – 8.5	7.1 – 8.5	7.95
T.S.(mg/lit)	500- 1500	1000	500	510 - 635	597
D.O. (mg/lit)	≥4.0	≥4.0	≥4.0	3.8 – 8.9	6.25
Hardness.(mg/lit)	100 - 500	500	300	130- 360	245
calcium.(mg/lit)	75-200	200	30	5.0-13.2	9.1
Chlorides.(mg/lit)	25-250	200	250	120-226	223
sodium.(mg/lit)	--	--	--	3.4- 14.2	8.8
Potassium.(mg/lit)	--	--	--	0.3 – 2.1	2.2

The present study shows that the permissible limits of colour, odour, taste and temperature are mostly narrative and the water from the present water body is acceptable for the drinking purposes, irrigation and fish culture purpose. The permissible limit of pH for potable water ranges within 6.0 to 8.5. in the present study pH ranged between 7.1 to 8.5 within. Thus pH values are permissible limits. Total solid values are also within permissible limit i. e. 510-635 mg/lit. dissolved oxygen during the present study varied between 3.8 to 8.9 mg/lit. indicating sufficient aerated state. Similar result were also reported by Agarkar (1998). In the present study of total hardness which is very important parameter determining usefulness of water in different sectors is also very much below the permissible limits 50 to 40. This denotes that water is soft and good for drinking purpose. Present result are agreement with earlier study by Sinha et al., (1990). Parameter like calcium, chlorides, sodium and potassium are also lower than the permissible limits. Phosphate and nitrates which are important nutrients are present in very low range detected by at the first time only preventing algal growth and keeping water body healthy. Similar results were also reported by Dayal Gopal (1992) and Salaskar (1997). To summaries result the water stock is mainly used for drinking purpose, domestic purpose, which fulfill all basic need of human being. The quality of water was good because all the studies physic chemical parameters were within permissible range.

References

[1] **Agarkar**S.V., A. B. Bhosle and P.M. Patil : 1998 . *J.Aqua. Biol*., 13(12): 62-63.
[2] APHA 1985 .*American Public Health Association, New York*. 11:1193.
[3] DayalGopa : 1992. *J. of Envfron.Proct*., 1220:120-104.
[4] Lal , A. K. 1996*: Indian Jr. of Envi. Prot*., 16(11):831-836.
[5] SalkarPramod, and S. *G. Vergi : 1997: Indian J. Aqua. Bio., 12(1-2):28-31*.
[6] *Sinha D. K. ; S. P. Roy and J. S. Datta: 1990: J. Environment Ecology and* Conservation.8(3):937-941.
[7] Trivedi, R. K. and P.K. Goel: 1984: *Enviro Media Publication*Karad 215.
[8] WHO:1984: Guidelines for drinking water quality. Vol. 1 6 th world Health Organization Geneva