



STUDY OF PHYSICO - CHEMICAL PARAMETERS OF KOLSUR DAM. TQ. OMERGA DIST.OSMANABAD

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ABSTRACT:

Various physico-chemical parameters were studied and analysis search as atmospheric temperature water temperature pH transparency turbidity, DO, CO₂, BOD total dissolved solids total alkalinity and total hardness of water during the period from January 2021 to December 2021 from kolsur dam Tq. omarga district Osmanabad the results revealed that there was significant seasonal variation in same physical chemical parameter and most of the parameter were in the normal range and indicated better quality of dam water and result indicate that the dam is not polluted and water can be used for irrigation and Pisciculture.



KEY WORDS: *physico-chemical parameter of kolsur dam dissolved oxygen water transparency.*

INTRODUCTION:

Water is the one of the most important compound to the ecosystem good quality of water described by its physical chemical and microbial characteristics but some correlation was possible among these parameters and the significant one would be useful to indicate quality of water the quality of water resources is usually described according to its physical chemical and biological characteristics now a day due to increased human population and man made condition rapid industrialisation and indiscriminate use of chemical fertilizers in agriculture are causing heavy and varied pollution in aquatic environment leading to determination of water quality and depletion of aquatic biota. It is difficult to understand the biological phenomenon fully because the chemistry of water reveals much about the metabolism of the ecosystem and explain the general Hyderabad logical interrelationship. the physico chemical parameter of water and the dependence of all life process of these factors make it described to take water as an environment. the study of different water parameter is very important for understanding of the metabolic events in aquatic ecosystem. Hence the present investigation involves the analysis of water quality in term of select physico-chemical parameter of Kosur dam district Osmanabad, Maharashtra constructed in 1992 the reservoir is located on North latitude and East longitude. The length of the arm is 8 98 8.00 MTS and 14 point 86 mts. Hi its storage capacity is about 8.613 Mm³. The multipurpose dam a source of drinking and irrigation water for nearly about seven villages under the canal irrigation. dam water was polluted due to domestic and agricultural waste leading to notable changes in the water quality and present investigation was carried out from January 2021 to December 2021.

MATERIAL AND METHODS :-

The surface water sample from Kolsur dam where collected from two sampling stations in the power at 11 a.m. to 1 p.m. regularly for every month during the period in in clean back 2 litres plastic cans and immediately transported to the laboratory for the estimation of various physico-chemical parameters like water temperature pH, centigrade, thermometer and where recorded at the time of sample collection using, portable kit water transparency was recorded at project. Sites with the help of disc. Turbidity, DO, TDS,BOD, total hardness, total alkalinity, where are recorded by using centigrade thermometer turbidity of water where is estimated in the laboratory by using standard methods as prescribed by Trivedy and goyal (1986), saksena (1990), APHA (1992),kodarkar(1998) and Gupta pk (2007).

RESULT AND DISCUSSION :-

The seasonal variation physico-chemical parameter of kolsur dam represented in table 1. The atmosphere temperature was recorded between 21 degree Celsius to 38 degree Celsius. It was maximum in May month. the atmospheric temperature is important and plays an important role in the environment, wild water temperature was recorded 22 degree Celsius to 34 degree Celsius the water temperature was maximum in May. pH was slightly alkaline the value begin greater than 7 at both station. The factors like air temperature bring about change in the pH of water.most of biochemical and chemical reactions are influenced by the pH it is great practical importance. The reduced rate of photosynthesis activities reduces the assimilation of carbon dioxide and bicarbonates which is ultimately responsible for increase in pH the low oxygen values coincided with high temperature during the summer month. Jayabhaye et.al.(2008) where recorded the pH value ranges from 7.5 to 8.6 during 2005 to 2006 and from 7.4 to 8.5 during 2006 to 2007 in Minor reservoir Sawana hingoli. The turbidity of water range between 229 to 288 NTU. The turbidity was recorded maximum 288 NTU in month of June where as maximum value was recorded 229 NTU in the month of January. Monsoon generally causes high turbulence and mixing of water leading to and increasing the concentration of suspended particulate matter (SPM) study of similar lines sakhivel and singhadia (2001) recorded turbidity range between from 229 to 288 mg/ lit. The dissolved oxygen was varied from 7.1 to 8.9 mg/lit. The DO was maximum 8.9 mg/lit. in the month of January where as maximum was recorded 7.1 mg/lit. In the month of May. The DO is on the most important factor in any aquatic ecosystem. The BOD were varied from 7.2 to 29.0 mg/lit. It was maximum in summer and monsoon month and minimum during winter season. BOD has been used as major of the amount of organic material in an aquatic solution which support the growth of microorganism. saxena and shrivastava (2002) were observed in the high values from the sample exposed to many people water at near sewage dam Tamlurkar and ambore (2006) we recorded value varied from 0.72 to 3.02 mg/lit. The total dissolved solids ranged from 201 to 300 mg per litre. In the sampling station and maximum in the month of March and minimum in February. Gupta 2001 were recorded PDF from udaipur lake range from 202 to 724 mg per litre. The high level of TDS in treating water causes laxative effects Mohammed musaddiq pokemoner observed value of total suspended dissolved arranged within 45 to 152 mg per litre of surface water in akola City e khobragade Sharma observe the values of TDS was in the range of of dhindhime and ambore (2004) recorded the TDS values ranged between 337 to 728 mg per litre from siddheshwar dam Jayabhaye et.al (2008) where are recorded the total dissolved solids in the minor reservoir Savana hingoli district ranged from 221 to 270 during 2005 to 2006. Total alkalinity of the dam was varied from 44 to 76.2 mg/lit. And maximum in winter season and minimum in monsoon season the alkalinity may be due to high PH the high pH may be due to the the hydroxide carbonate and bicarbonates photosynthetic activity of aquatic plant is reduces alkalinity higher alkalinity may be due to addition of waste from organic matter narasimha Rao and j Ragu (200) found the alkalinity value varied from 90 to 265 mg per litre. In sewage fed fish culture pond. Sakrand Joshi 2003 found alkalinity values from 672 to 1023 MG per litre in partners in minor wetland in tuljapur town in Maharashtra Jayabhaye et.al. (2008) recorded total alkalinity ranged from 68 to 240 mg per litre during 2005 to 2006 and 179 to 264 mg per litre during 2006 to 2007 in minor reservoir sawana hingoli. the total hardness value range

from 115 to 176 mg per litre maximum during month of June are in monsoon season and minimum in November of winter. the total hardness is the total soluble magnesium and calcium and salts present in the water expressed as it CaCO_3 equivalent. total hardness are also includes the sulphate chlorides of calcium and magnesium in most natural water the predominant ions are those of bicarbonates associated mainly with calcium to lesser degree with magnesium and still less with sodium and potassium sulphate and chlorides of calcium and magnesium bicarbonate of paramagnet caused by soluble calcium and magnesium carbonate and salts of inorganic acids. The total hardness was in the range from 115 to 176 mg per litre at harsal dam warg (1998) minimum values was recorded during monsoon.

Table 1. Physico-Chemical analysis of surface water of Kolsur dam at Station A and B from January 2021 to December 2021.

Months	Station	Parameters										
		Air Temp. °C	Water Temp. °C	PH	Transparency	Turbidity	Dissolved Oxygen	Carbon Dioxide	BOD	Total Dissolved Solid	Total Alkalinity	Total Hardness
Jan. 2021	A	21	22	7	64	229	7.26	5.1	7.6	202	75.7	152
	B	22	22	7	65	230	7.3	5.2	7.2	201	76.2	152
Feb. 2021	A	23	23	8	63	242	7.7	4.5	15	297	69	154
	B	24	23	7	64	242	7.7	4.6	14	296	69	153
Mar. 2021	A	29	29	8	65	246	7.9	4.8	25	299	59	156
	B	29	28	8	66	246	7.9	4.7	25	300	59.5	155
April. 2021	A	36	32	8	72	288	8	6	26	290	73	156
	B	36	32	8	71	288	8.2	6	26	281	73	157
May. 2021	A	37	34	8	81	258	7.8	6.2	29	291	66	159
	B	37	34	8	81	258	7.8	6.2	29	290	65	160
June. 2021	A	38	32	8	61	255	7.4	6.3	26	281	60	173
	B	38	32	8	61	255	7.4	6.3	25	281	64	173
July. 2021	A	26	26	7	62	258	8.2	5.5	27	271	44	174
	B	26	26	8	61	255	8.2	5.4	27	271	44	174
Aug. 2021	A	28	28	8	48	254	7.5	5.5	24	274	45	175
	B	26	26	8	61	255	8.2	5.4	27	275	44	174
Sep. 2021	A	28	27	8	32	248	7.1	5.7	13	281	48	131
	B	27	27	8	32	248	7.1	5.7	12	282	47	131
Oct. 2021	A	29	29	7	40	247	7	6.7	11	270	52	121
	B	29	29	7	80	247	7.1	6.6	12	271	52	121
Nov. 2021	A	25	23	7	52	242	7.2	6.5	10	238	57	115
	B	25	25	7	52	241	7.2	6.7	10	240	54	116
Dec. 2021	A	23	23	8	67	232	8.9	6.6	8.2	210	66.7	120
	B	23	23	8	67	231	8.8	6.7	8.2	210	67.6	120

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