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Physico-chemical analysis of water of seevan river (M.P.) India

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ABSTRACT

In the present study physico-chemical parameters of water of Seevan river has been done during 2009 in different seasons.

Key words: Physico-chemical, observed, aspects, contamination, microbiological condition.

INTRODUCTION

Sehore town is one of the major district head quarter of Bhopal division and it is located at 23°12'N longitude and 76°05' East latitude. Water in Seevan river flows whole year, this river divided the city into two parts. Sewage water of lotia nallah mixes into Seevan river. The river is originated from village Titora Barkhedi of Bilkisganj and after covering the length of 29 Km. it joins to Parvati river near village Kararia Bheel. Sehore district hast eh population of about 92,000. The Seevan river is being polluted mainly by dumping of municipal wastes as well as sewerage inflow. Presently there is a need to give proper attention and analysis of Seevan river's water to improve environmental conditions.

S. M. Mishra (2002) analysed the Seevan river's water under Bhoj Wetland Project, the analysed parameters are T-H Ca-H, Mg-H, M.O., B.O.D., C.O.D. and heavy metals Fe, Cu, Zn. Jain Praveen et. al., (1996) worked on microbiological condition physico-chemical aspects of Parvati river (Sehore). The great danger to public health is due to presence of excremental bacteria contaminated in water, hence it becomes very important to monitor and assess the water quality of river that will help for further planning and sustainable development.

In this present study sampling stations has been chosen are Titora, Barkhedi, Chandari (Bhagwanpura), Mahuakhedi, Pipaliya Miran, Biglan, Sehore, Gopalpura village and after Karari Bheel village for different physico-chemical parameters as results are summarised in Table-1. The methods for analysis of different physico-chemical parameters has used as prescribed by APHA (1985) and NEERI (1986).

Temperature influences the biological reactions in water. Its rise accelerates the chemical reactions in water and also reduces solubility of gases and D.O. (Dissolved Oxygen). In this study temperature and pH ranged from 25.8 – 32°C and 6.4 – 7.5 which is similar with the finding of Kataria et. al., (1977).

Total hardness in caused by divalent cations. Hardness is found higher in monsoon. T-H, calcium and Mg-H ranged from 112-172, 82-142 and 28-34 ppm in this study. All the gasses of and COD has observed in the range of 4.2 – 6.0, 3.2 – 4.82 and 32.2 42.6 ppm respectively at different – sampling stations. High values of nitrates are due to domestic sewage and lotia nallah. Phosphate has ranged of 0.72 – 1.4 are found from 0.008 -0.024 and 0.04 – 0.59 ppm respectively in this study. Chloride concentration increases due to the increase of mineral content. Iron is present in the soluble from in soil. WHO recommends the iron range of 0.3 mg/L. The findings are similar with those of Patel et. al., (1986), Shukla, B. D. et. al., (1989), Upadhyay and Ray (1982), Kataria, H.C. (1994, 1995, 1996, 1997, 2008).

Table 1: Physico-chemical parameters of Seevan river water (2009) in ppm

Sampling Stations Parameters	Unit	1	2	3	4	5	6	7	8	9
Temperature	°C	28.4	26.6	25.8*	30	31.2	29.8	30.1	32**	31
pH	-	6.4*	7.0	7.2	7.3	7.5**	7.4	7.2	7.0	6.8
Total Hardness	ppm	112	122	130	128	170	172*	168	164	160
Ca-H	ppm	82*	91.4	100	96	142**	140	134	132	132
Mg-H	ppm	30	30.6	30	32	28*	32	34**	32	28
D.O.	ppm	4.2*	4.34	5.2	5.4	4.9	5.8	5.4	5.8	6.0**
B.O.D.	ppm	3.2*	5.2	4.8	3.2	4.52	4.6	4.82**	3.8	4.6
C.O.D.	ppm	39.4	38.0	42.6**	41.8	32.6	38.4	36.2	32.2*	36.8
Nitrate	ppm	1.74	1.60*	1.70	1.92	2.24	2.08	2.88	2.9	3.0**
Phosphate	ppm	0.78	0.74	0.72*	0.86	0.90	0.82	1.04	1.40**	0.82
Chloride	ppm	50.4	48.6	27.8*	49.2	39.8	52.0**	48.0	46.5	40.2
Cu	ppm	0.008*	0.01	Nil	0.024**	0.024	Nil	-	0.02	Nil
Fe	ppm	0.36	0.49	0.59**	0.50	0.35	0.04*	0.08	0.30	0.42

*Minimum values **Maximum values.

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