

# PHYSICO-CHEMICAL ESTIMATION OF CHIKSANA CANAL FRESH WATER RESERVOIR, BHARATPUR (RAJ.)

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**Abstract**—Physico- Chemical estimation of Chiksana Canal water reservoir of Bharatpur was studied during one year from February 2012 to January 2013 and parameters (temperature, PH, dissolved oxygen, alkalinity, free carbon-di-oxide, nitrate and phosphate) were estimated. Nitrate and phosphate fluctuate between 0.76 to 2.40 and 3.42 to 7.00 in the canal, respectively and PH ranged from 6.4 to 8.3 and dissolved oxygen was measured 1.08 to 6.00 mgm/l. The Canal is receiving some type of waste but the water is used for drinking and other house hold purpose by the local inhabitants.

**Keywords:** Alkalinity; Fluctuate; Parameter; Physico- chemical.

## 1. INTRODUCTION

Ever since the pre historic times, man is intimately associated with water and it has been conclusively proved by the evident of post civilization that all historic human settlement were around inland fresh water bodies. In India, an area of about 6.5 million hectare is covered by inland water bodies including 27.359 km<sup>2</sup> of reverine systems. Such limnological work is quite merged and some studies have been conducted (Irwin 1968; Tinumus 1974; Vyas and Nama 1991; Hosetti 2002). Hence, an attempt has been done to study the physico-chemical estimation of chiksana canal water reservoir.

The physico- chemical characteristic of water is an important determination of the aquatic system. Their characteristics are greatly influenced by the climatic, vegetation and general composition of water. Investigation was carried out for a period of one year. Water samples were collected a monthly intervals from a fixed site. Temperature by simple thermometer, pH by portable pH meter, dissolved oxygen by modified Winkler's method – ALPHA, free carbon -di- oxide by Welch (1984) method, alkanity (Strickland and Parsons 1972), nitrate (Mullin and Reley 1955) and phosphate (Murphy and Reley 1955) were estimated.

The results obtained by physico- chemical analysis of all samples are given in Table 1. The present study showed that the ambient and water temperature has wide variation with 17.5 to 38.40<sup>0</sup>C and 14.8 to 36.80<sup>0</sup>C, respectively. PH value did not show much variation at the canal, it fluctuated from 6.4 to 8.3. In chiksana canal dissolved oxygen was recorded in range 1.08 to 6.00 with the maximum in August and minimum in the month of May. Dissolved oxygen is one of the abiotic factors indicating the quality of water.

Free carbon- di-oxide is found to be present in the canal. It fluctuate between 21 to 39 in the absence of the months March, June, July and October, respectively,

In present study carbonate was noticed only in the months of March, June, July and October. And bicarbonate was noticed within the limit 65 to 107 mgm/l.

The nutrients study of nitrate and phosphate were estimated. Nitrate concentration was found to range between 0.76 to 2.40 mgm/l and phosphate concentration was noticed 3.42 to 7.00 mgm/l.

The present study leads to the following conclusion that, chiksana canal's water is not much contaminated and it has some domestic or industrial waste. The study of such water bodies in the area will help for better management and water conservation.

Table 1

Month s	Air Temp .	Wate r Temp .	pH	DO <sub>2</sub>	CO <sub>3</sub>	HCO <sub>3</sub>	NO <sub>3</sub>	PO <sub>4</sub>	C O 2
Feb.	22.60	19.50	7.80	4.02	Abs.	86	0.96	5.68	2 4

Mar.	26.80	26.60	8.00	2.62	19	100	0.76	7.00	Abs.
Apr.	31.80	32.20	8.30	3.55	Abs.	74	1.28	6.41	2
May	36.40	34.50	7.80	1.08	Abs.	88	2.18	5.45	2
June	38.40	36.80	7.60	5.08	21	102	2.19	4.99	7
July	31.50	30.40	7.50	2.84	40	76	2.25	4.36	Abs.
Aug.	30.00	27.50	7.30	6.00	Abs.	82	1.88	4.82	2
Sep.	27.70	26.20	7.70	4.12	Abs.	65	1.56	3.42	1
Oct.	26.70	25.80	7.30	3.68	33	72	1.76	4.02	3
Nov.	23.30	21.50	7.20	3.24	Abs.	92	1.58	3.75	Abs.
Dec.	17.50	14.80	6.40	2.84	Abs.	98	1.83	3.56	3
Jan.	18.20	15.80	7.20	1.90	Abs.	107	2.22	3.48	9
									2
									1

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