

# ANALYSIS OF PHYSICOCHEMICAL PARAMETERS OF KHADAKPURNA RIVER NEAR CHIKHALI, DISTRICT BULDANA.

RAMESH TUKARAM PARIHAR.

Department of Chemistry,  
Vidnyan Mahavidyalaya, Malkapur  
Maharashtra, India.

## Abstract

River quality of Khadakpurna near Chikhali has been assessed with respect to physicochemical parameters to detect seasonal variations in the water. Physicochemical parameters i.e. Temperature, pH. were studied. Chemical parameters i.e. Calcium, Magnesium hardness & Total hardness were studied to detect the co relationship between Temperature & hardness.

**Key words:** Khadakpurna river water quality, Temperature, Total hardness.

## Introduction

Khadakpurna river water quality is studied near Chikhali. Due to domestic sewage water quality of Khadakpurna river gets disturbed. The main purpose of this study is to detect the changes in physicochemical parameters of Khadakpurna river water during various seasons. This study was carried out from January 2016 to January 2017.

## Materials and methods

These water and water samples were collected from river sites and were analyzed in laboratory. Temperature was measured with the help of a centigrade thermometer, pH was measured by the digital pH meter. Ca, Mg and total hardness calculated by the methods given of Trivedi and Goel (1986) and Trivedi *et al* (1987). Yogesh patil & G S Chaudhari (2006) also reported the co relationship between temperature & Total hardness.

**Table 1.** Seasonal variations in physicochemical parameters

	Jan 2016	April2016	July 2016	Oct 2016	Dec. 2016	Jan 2017
<b>Temperature (<sup>o</sup>C)</b>						
	26 ±0.45	32 ± 0.20	28 ± 0.18	33 ± 0.11	30 ± 0.23	27 ± 0.21
<b>pH</b>						
	7.1±0.12	7.0±0.52	7.3 ± 0.0	6.9 ± 0.32	7.3 ± 0.11	7.3 ± 0.25
<b>Calcium hardness (mg/l)</b>						
	123.17±3.25	133.81±2.26	180.77±0.66	162.88±0.12	127.18±4.13	126.29±3.21
<b>Magnesium hardness (mg/l)</b>						
	39.12±0.32	34.76±0.94	40.37±0.05	45.17±0.34	30.66±0.24	40.00±1.05
<b>Total hardness (mg/l)</b>						
	162.29±2.17	169.47±0.28	221.14±3.29	209.05±0.30	157.84±1.20	167.29±1.05

## Result and discussion

The highest temperature (33<sup>0</sup> C) was seen during Oct 2016. The lowest temperature was 26 ° C recorded in Jan 2016. The highest pH observed July 2016, The lowest pH was 6.9 during Oct 2016.

The highest calcium hardness was observed at Oct 2016, while the lowest calcium hardness was in Jan 2016. Highest magnesium hardness was noted at Oct 2016, Lowest magnesium hardness was recorded in Dec. 2016. Highest total hardness was found during July 2016, lowest total hardness found in Dec 2016.

Determination of pH is a valuable guide to show acid, alkali balance of water. Saxena *et al* (1988) reported that the inverse correlation between pH and temperature at polluted repains. The lower pH values coincided with low calcium and low carbonate in river Khadakpurna, while pH of water is more valuable than that of the open as sea reported by Harvey (1960). Shrivastava *et al* (1998) indicated the toxicity effects of viscose rayon factory effluent increased Ca, Mg and Chloride in high quantity and so due to which the decreased growth of plants at higher concentrations. The present physicochemical study of river Khadakpurna in Buldana district area showed the similar results with earlier workers. So there is conclusion that there are wide fluctuations in the physico chemical factors of Khadakpurna river.

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