



COMPARATIVE VARIATION IN HYDROGEN ION CONCENTRATION OF THREE WELL WATER SAMPLE IN LOHARA TALUKA (M.S.) INDIA

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Abstract:-

The present study of comparative variation in Hydrogen ion concentration of Three well water sample in Lohara Taluka (M.S.) India during a year June 2020 to May 2021. Its located about 42 Km. towards East from District head quarter Osmanabad . Its geographical coordinates are 17^o- 59'—0" North 76^o-20'-0" East and about 47 Village in Lohara Taluka. Comparative variation in Hydrogen ion concentration of three selected village well water sample Jawali, Ashta kasar, and Dastapur. The Hydrogen ion concentration (pH) is a very important term used to express the intensity of acid or alkali condition of solution Hydrogen ion concentration scale range from 0 to 7 as neutral, below 7 being acidic and above 7 as a alkaline. The measuring of Hydrogen ion concentration are selected water sample from Jawali well is found that 6.41, Ashta kasar well is found 6.84 and Dastapur well is found 6.80 averages are recorded in the present investigation of some selected well water sample in lohata Taluka.

Keyword:-

Three well water sample, pH Meter.

Introduction

Water is a universal solvent and renewable source. The properties of water on the earth is not clear so for availability of water on earth is only 1% and 2% water occurs always in frozen state. While 97% water is the sea water. Water is important resource and basic need of human being. Human uses water for different purpose, in the industry, Agriculture, in Home and for recreation. In one way or the other we use all available sources in land water ground water, well water and even ocean water. Hydrogen ion concentration (pH) is a very important term used to express the intensity of acid or alkali condition of

solution. It's a means of hydrogen concentration or more presently the hydrogen the ion activity. Hydrogen ion concentration is the term which is defined as the Logarithm (base 10) of the reciprocal of the hydrogen ion concentration. Hydrogen ion concentration is an important factor in water chemistry since it enters into the calculated of acidic and alkalinity and process such as coagulation disinfection softening and corrosion control. The normal acidic and alkali depends on excess of H or OH ions over the other and measure it normality and gm equivalent of acid or alkali. Hydrogen ion concentration scale range from 0 to 14 with 07 as neutral, below 7 being acidic and above 7 as alkaline he Hydrogen ion concentration is also an important factors which maintain carbonate and carbonate system of fresh water hydrogen ion concentration is the factor which can be used for defection of pollution Lagler (1967) .

Hydrogen concentration of water also affects on solubility and biological availability of nutrient and heavy metal in aquatic ecosystem. The values of hydrogen ion concentration are recorded with respect to season Rainy, winter and summer from a year June 2020-May 2021. The recorded values are compaired with international standard such as WHO, IS- 10500 as well as SIS 1982. Hydrogen ion concentration is considered as one of the pollutants as it leads to made water unsuitable for drinking purpose for human being. Natural water hydrogen ion concentration is alkaline. It contain sufficient amount of carbonates. Natural water in hydrogen ion concentration is range from 4 to 9 (APHA, AWWA, 1980). The present investigation has been carried out on three well water sample in lohara Taluka . The study comparative variation of hydrogen ion concentration (pH) in three season i.e. Rainy, winter and summer in lohara Taluka.

Material and Method:-

The water sample selected for physico- chemical analysis is belong to drinking sector leading to water pollution consequently Irrigation purpose and harmful to health of human being as well. The Hydrogen ion concentration of these well water samples are recorded with the help of digital field pH meter (Hanna) in morning time. For the measuring of hydrogen ion concentration average of three

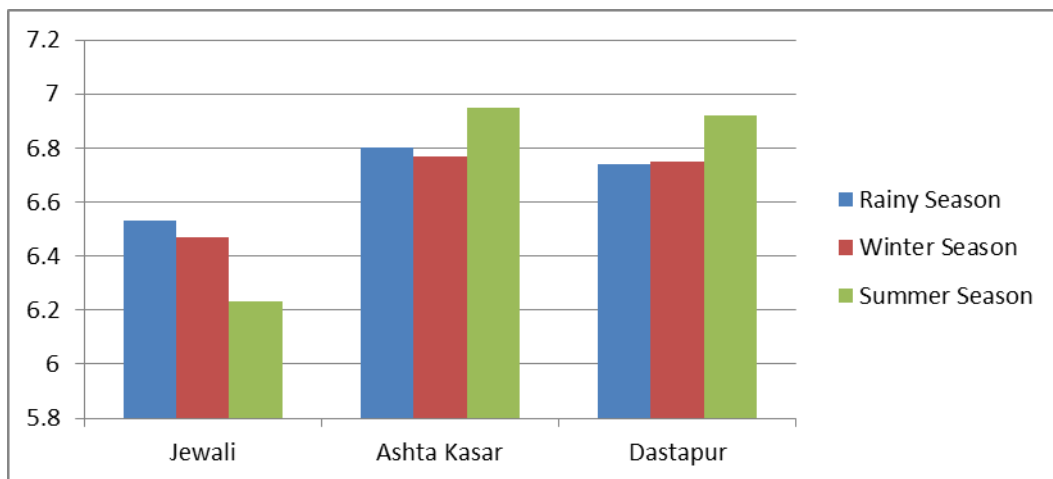
well water sample in Lohara Taluk.. Standard method for the examination of water use of APHA (1980), Kodarkar (1998).

Result and Discussion :-

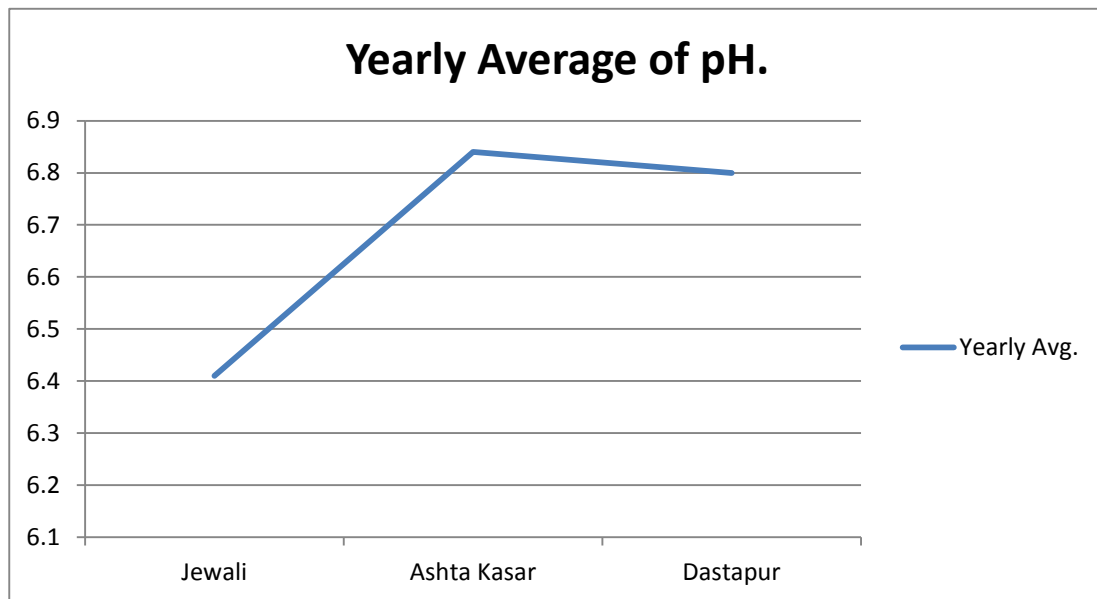
Table: 1 Comparative variation in hydrogen ion concentration of three selected well water sample in Lohara Taluka (2020-21)

Sr. no.	Name of well Water sample	Rainy season	Winter season	Summer season	Average
1.	Jawali	6.53	6.47	6.23	6.41
2.	Ashta kasar	6.80	6.77	6.95	6.84
3.	Dastapur	6.74	6.75	6.92	6.80

Graph No :-1 Seasonally & Comparative variation in hydrogen ion concentration of three selected well water sample in Lohara Taluka (2020-21)



Graph No :-2 Graphical study of yearly average in hydrogen ion concentration of three selected well water sample in lohara Taluka (2020-21)



Average comparative variation of hydrogen ion concentration of three different well water samples recorded in Table no.1 and Graph no 1&2. It's found that the average hydrogen ion concentration of Jewali well is found in 6.41, Ashta kasa 6.84, and Dastapur well is found 6.80 from these observation it is found that jawali well water sample is showing the lowest hydrogen ion concentration. While other Ashta kasar and Dastapur well water sample are showing nearly 6.84 and 6.80 respectively. World Health Organization (WHO) suggests the permissible limit for drinking quality within hydrogen ion concentration 6.5 to 8.5. IS- 10500 also suggest the permissible limit for drinking purpose. In this study it is found that only jawali well water sample hydrogen ion concentration value less as compare to the International standard. Hence found unsuitable for drinking purpose on the basis of hydrogen ion only. While other means Ashta kasar and Dastapur well water sample are showing the hydrogen ion value nearly 6.84 and 6.80. So it can be concluded that these water sample are suitable for drinking purpose on the basis of hydrogen ion concentration only WHO, IS -10500 & ISI-1982. It's concluded that all well water are suitable for irrigation & drinking purpose. In this type of fluctuation in hydrogen ion concentration range was recorded by Kumbhar A.C.(2006), Gaikwad et,al (2008). Hydrogen ion concentration is an index for suitability of environment and is one of the most important factor affecting the productivity of

water body (Kumar & Gupta 2002) .The hydrogen ion concentration range of 6.00 to 9.00 is most suitable for fish culture (Swing 1967). Baskaran et,al (1988) reported that water become alkaline after the morning hours during the rest so day. Nadeem Ahmed (1999) showed highest hydrogen ion concentration is in winter and low value in summer into fresh water reservoirs. Kanwate (2002) Hydrogen ion concentration (pH) value is found maximum in summer and minimum in winter.

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