REVIEW OF RESEARCH

ISSN: 2249-894X
IMPACT FACTOR : 5.2331(UIF)
VOLUME - 7 | ISSUE - 1 | OCTOBER – 2017

STUDY OF WATER QUALITY PARAMETERS IN RURAL AREA NEARBY NANDGAON, MS.INDIA

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ABSTRACT:

Water quality is an essential factor for human being and all the living plants and animals. A good quality of water forms healthy and better ecosystem. Due to human activities, industrialization and urbanization, the quality of water decreases and contaminated water directly affects on overall progress of all the biotic things. In the present research work different parameters were assessed to find the water quality. The water samples were collected from nearby villages of Nandgaon. Water from bore well and river were analysed. The parameters such as pH, TDS, acidity/alkalinity, electrical conductivity, oxidisable substance were studied.

KEY WORDS: *TDS, alkalinity, pH, Ground water, electrical conductivity.*

INTRODUCTION:

Agricultural sector depends on availability of ground water. Human activities and Industrial waste contaminates the water which causes water pollution. The contaminated water is harmful to crops and causes diseases in human being. The hazardous substances present in the water disturb the biological system and ecological system which directly affects on human life [1]. Water is medium for uptake of essential constituents for plants. Food quality produced from plants depends upon the water quality absorbs. The contaminants in water like inorganic pollutants, heavy metals and pesticides are harmful to the plants.

The physicochemical parameters such as pH, TDS, acidity/ alkalinity, electrical conductivity, oxidisable substance gives the basic information about water quality. Inorganic fertilizers, pesticides, industrial waste and household effluents on mixing with water alter these parameters and decrease down the water quality. For the fulfillment of need of growing population, farmer utilizes excess of fertilizers and pesticides to increase the crop yield but it contaminates the ground water. The water quality and quantity can be improved by the proper use of rain harvesting system and diluting the concentrated chemical constituents [1].

MATERIALS AND METHODS:

The Eleven water samples were collected from nearby villages of Nandgaon. Samples collected randomly from bore well and river from the selected villages. The samples were stored in polythene bottles. The polythene bottles were cleaned and washed with distilled water before

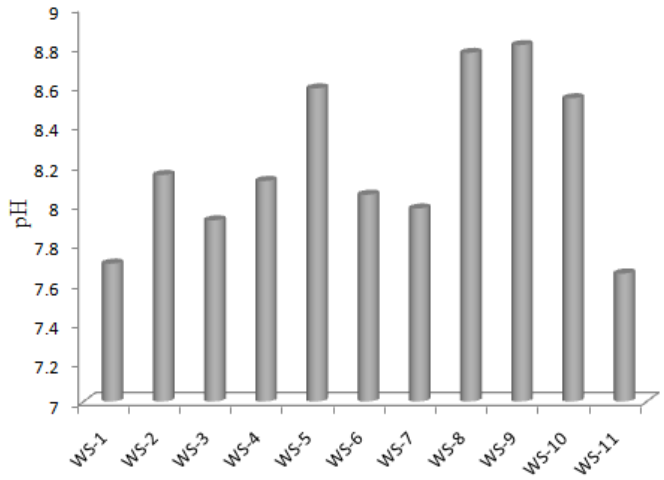
store the samples. The water samples were analysed on the same day to avoid any chemical changes. pH of the samples was determined by calibrated pH meter at constant temperature. Electrical conductivity was determined by conductometer by using 0.01 M KCl solution.

SAMPLE SITES:

The water samples were collected from the nearby villages of Nandgaon namely (1) WS-1: Mandawad (2) WS-2: Wakhari (ES) (3) WS-3: Palashi (4) WS-4: Bangaon (5) WS-5: Pimparkhed (6) WS-6: Nandgaon (7) WS-7: Panjhan (8) WS-8: Pokhari (9) WS-9: Wakhari (10) WS-10: Talwade (11) WS-11: Vehelgaon

Table: pH, electrical conductivity, TDS, acidity/alkalinity

Sample No.	pH	electrical conductivity (μScm^{-1})	TDS (ppm)	Acidity/ Alkalinity
WS-1	7.70	390	128	Alkaline
WS-2	8.15	931	313	Alkaline
WS-3	7.92	1651	546	Alkaline
WS-4	8.12	1071	369	Alkaline
WS-5	8.59	515	182	Alkaline
WS-6	8.05	966	327	Alkaline
WS-7	7.98	1161	397	Alkaline
WS-8	8.77	349	126	Alkaline
WS-9	8.81	963	523	Alkaline
WS-10	8.54	665	652	Alkaline
WS-11	7.65	861	415	Alkaline



- **Figure :1 pH of the water sample from different villages**

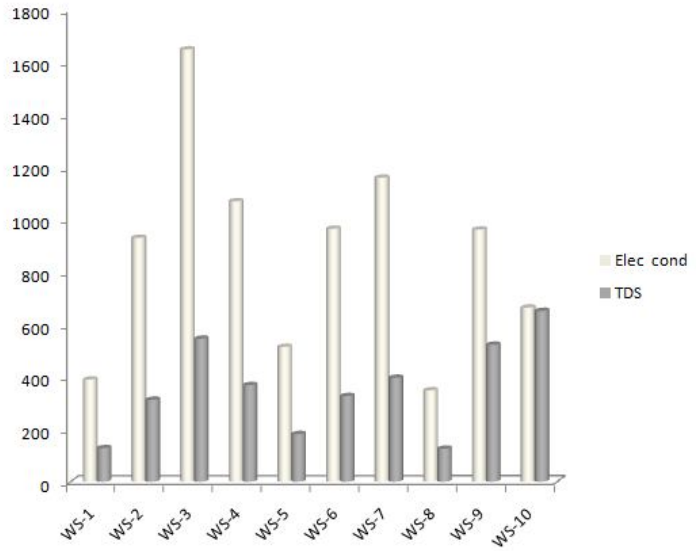


Figure: 2 Electrical conductivity and TDS values of different water sample

RESULT AND DISCUSSION:

pH values were found in between 7.65 to 8.81. Water sample 11 shows lower pH value while water sample 9 shows higher pH value among the other samples. All the pH values of the water samples were found in the acceptable limits for agricultural use. Electrical conductivity values observed in the range of 349 to 1651. Water sample 3 shows higher electrical conductivity value while sample 8 shows lower value of electrical conductivity. TDS values found for the water samples were in the range of 126 to 652.

CONCLUSION:

In the present study it was found that, all the pH values in the appropriate range. For the agricultural purpose all the observed pH values were suitable. TDS values of the water sample were found in the acceptable limit. Awareness program to the farmers should be arrange for maintaining the water quality.

ACKNOWLEDGEMENT:

The author is thankful to the Principal and Head of the Department of chemistry, Arts, Commerce and Science College, Nandgaon, Nashik for providing laboratory facilities during the work.

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