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Research Article

PHYSICAL PROPERTY ANALYSIS OF TAP-WATER OF G.M.M.WOMEN'S COLLEGE, BHIWANDI

Jayashree Sharad Thakre¹, Shaziya Mohd Irfan Momin², Khan Bushra³
and Momin Fariha⁴

^{1,2}Department of Chemistry, G.M.Momin Women's College, Bhiwandi

^{3,4}S.Y.B.Sc. Scholar

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ABSTRACT

Sorghum is the fifth most important cereal crop in the world after wheat, rice, maize and barley. The grain had been used for consumption of both humans and livestock and also different genes of the plant serve many other important uses. The crop has been suffer from various types of diseases, majority of them are known to be caused by fungi, which are mostly seed borne. In present study, seed-borne fungi of sorghum in selected agroclimatic regions viz., Cuddalore, Dharmapuri, Salem and Villupuram, Tamil Nadu, India. The composite samples were collected from these regions carefully and transferred to the laboratory. And using PDA method, various fungal pathogens were isolated for the year 2016 and 2017 in the selected districts. It was observed that, species of *Aspergillus*, *Mucor*, *Rhizopus* occurrence is frequent in both the years along with *Penicillium*, *Fusarium* and *Geotrichum*. Presence of many pathogenic fungi in considerable number in the samples indicates the need of field surveys for these and other pathogens.

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INTRODUCTION

Water is one of the most important and most precious natural resources. It is essential in the life of all living organisms from the simplest plant and microorganisms to the most complex living system known as human body. Water a combination of hydrogen and oxygen atoms, with a chemical formula, H₂O and known to be the most abundant compound (70%) on earth surface. It is significant due to its unique chemical and physical properties. Access to safe drinking water is key to sustainable development and essential to food production, quality health and poverty reduction. Safe drinking water is essential to life and a satisfactory safe supply must be made available to consumers. Water is thus becoming a crucial factor for development and the quality of life in many countries. In individual arid areas it has even become a survival factor. Therefore, water intended for human consumption must not contain pathogens germs or harmful chemicals; because water contaminated with microorganisms is the cause of epidemics. That is good drinking water is not a luxury but one of the most essential requirements of life itself. However, developing countries, like Ethiopia, have suffered from a lack of access to safe drinking water from improved sources and to adequate sanitation services[2]. The WHO revealed that seventy five

percent of all diseases in developing countries arise from polluted drinking water. Therefore; water quality concerns are often the most important component for measuring access to improved water sources. Acceptable quality shows the safety of drinking water in terms of its physical, chemical and bacteriological parameters. International and local agencies have established parameters to determine biological and physicochemical quality of drinking water. The problems associated with chemical constituents of drinking water arise primarily from their ability to cause adverse health effects after prolonged periods of exposure, of particular concern are contaminants that have cumulative toxic properties, such as heavy metals and substances that are carcinogenic most common problems in household water supplies may be attributed to hardness, iron, sulfides, sodium chloride, alkalinity, acidity, and disease-producing pathogens, such as bacteria and viruses. In addition to this IARC and AWA also reported that the use of chemical disinfectants in water treatment or construction materials used in water supply system usually results in the formation of the chemical by-products, some of which are potentially hazardous[3,4]. This makes drinking water a vehicle for disease transmission. Therefore, it is desirable to control the intake of these potentially toxic chemicals from drinking water because the intake from other

*Corresponding author: Jayashree Sharad Thakre

Department of Chemistry, G.M. Momin Women's College, Bhiwandi

sources which food or air may be difficult to avoid. Like other developing countries drinking water quality is major issue in India and studies related to drinking water quality of Bhiwandi city have not conducted. Therefore, the aim of this study was to examine the levels of some physico-chemical parameters of drinking water of Bhiwandi which is located 45km apart from Mumbai.

MATERIALS AND METHODS

General description of study area

Drinking or Tap- water samples were collected from G.M.M. Women's College Building which is in Bhiwandi. The total area of the town is estimated about 1095 hectares and it lies at an altitude of 1300 meters above sea level, its average temperature is 29°C and the average annual rainfall is 900 mm.

Sample collection

Drinking water samples were collected from several sampling sites of G.M.M. Women's College Building. The potable water samples were collected in cleaned glass bottles and brought to the laboratory in an icebox jar to avoid unusual change in water quality. Prior to the sampling all the bottles are washed and rinsed thoroughly with distilled water. Standard methods were followed for sample collection and preservation.

RESULT AND DISCUSSION

Determination of physical parameters of Tap-water

Determination of pH

50 cm³ of water sample was taken for determination of pH by using clean combine glass electrode. The pH of each sample was measured with pH meter.

Table pH of sample

Water Samples	pH
Wet Chemistry Lab	8.02
Physical Chemistry lab	7.81
Canteen	6.54
R.O. Filter	7.81
Botany Lab	7.87
Zoology Lab	7.95

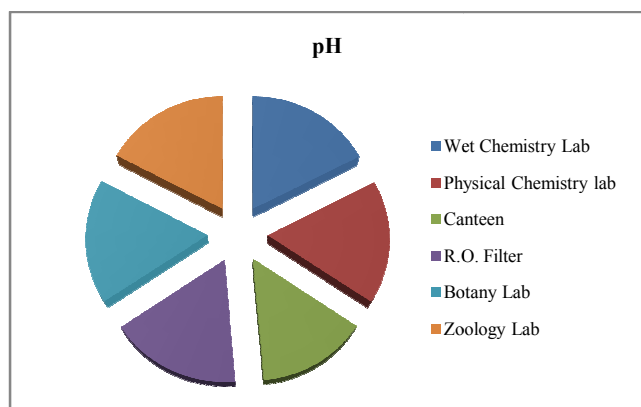


Figure pH of samples

The PH is a measure of the hydrogen ion concentration in water. Drinking water with a pH between 6.5 - 8.5 is generally considered satisfactory. Acid water tend to be corrosive to plumbing and faucets, particularly, if the pH is below 6. Alkaline waters are less corrosive; water with a pH above 8.5 may tend to have a bitter or soda-like taste.

In this study, the concentration of hydrogen ion (pH) ranges between 6.54 to 8.02 and all the water samples analyzed have concentration which is up to the limit of 6.5 to 8.5 standard set by the WHO. Thus indicated that the measured pH values of the drinking water samples can be used for drinking purpose which will not cause any harmful effect to the consumers with respect to pH and can be used for other purposes also.

Determination of Total Dissolved Solid (TDS)

Clean dried evaporating dish was taken. Filtered and unfiltered water Sample was transferred to the dish and weight were measured.

Table TS of different sample

Water Samples	Total Solid (ppm)
Wet chemistry lab	100
Physical chemistry lab	6600
Canteen	7700
R.O. filter	1000
Botany lab	3700
Zoology lab	4100

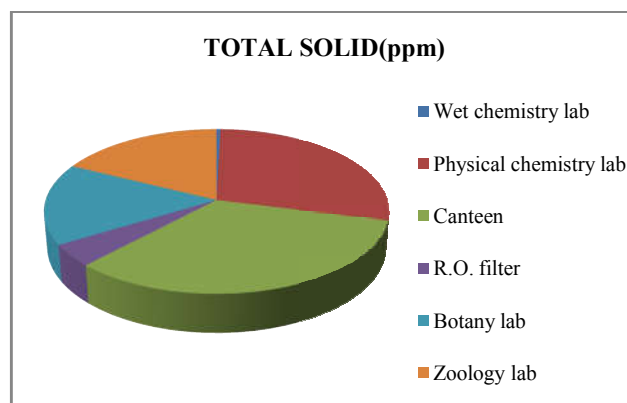


Figure Amount of TS

TDS can be taken as an indicator for the general water quality because it directly affects the aesthetic value of the water by increasing turbidity. High concentrations of TDS limit the suitability of water as a drinking source and irrigation supply. The acceptable range of TDS is 500 mg/L. In the present study the range of TDS of analyzed water samples varied between 134.4 to 147.1 mg/L. However; all the values were within the standard limit of WHO (500 mg/L). Therefore the Tap water Analyzed is safe in terms of TDS.

Total solid greater than 1500ppm would markedly impair the potability of the water. The 1963 and 1971 International Standards (WHO) retained this value as a maximum allowable or permissible concentration.

All water sample except the Wet chemistry lab water, has total solid higher than the standard value (WHO)[5].

Table Standard Values of Water Quality (1)

Quality of Water	Yearly Average	Max	Min
Color	0	10	0
PH	7.4	7.9	6.9

CONCLUSION

In this study the collected drinking water samples of G.M. Momin Women's Degree College Building were analyzed for physical parameters like pH and TDS. The result revealed that almost all sample shows the measured value of pH within the

standard drinking water quality given by WHO.

TDS of all water sample are within the permissible limit but total solids are above the permissible limit set by WHO.

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References

1. www.wsscwater.com
2. Nature, Environment and Pollution technology, Volume No.10 March 2011, Page No.156, Management of Drinking Water Quality at Malivya National Institute of Technology, Jaipur, A Case Study-Physical Chemical Quality of Drinking Water
3. Study of Physio-Chemical Characteristics of Ganesh Tank, Miraj, District-Sangli, Maharashtra.
4. Physico-Chemical Analysis of Drinking Water Quality of Arbaminch Town, *Journal of Environmental & Analytical Toxicology*
5. Guidline for drinking water quality (WHO)

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