ISSN: 2456-1363
International Journal of Scientific Research & Growth
A Multidisciplinary Peer Reviewed and Refereed International Journal
Volume-1 Issue-6 February- 2017
www.ijsrg.com
editor@ijsrg.com

Water Quality & Some Trace Elements, Bhitarwar And Near By Villages, Gwalior, M.P.INDIA

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Abstract
Water is the most vital resource for life. Approximately 97.2% water lies in oceans as salt water. While 2.15% in frozen ice from and the remaining 0.65% remain as fresh either on surface or ground water. Available fresh water resources are very limited. The demand for fresh water has increased day by day and will increase with the rapid growth of population, agriculture and industry. As a result the fresh water reserve depletes day by day too. The requirement of clean water per person is about 2.7 lit per day, thus the global requirement is about 5 billion cu. m. only for drinking purpose.
Keywords: *pH level, palms, spider plants and nutrient plants.*

1- INTRODUCTION

Water covers 71% of the Earth's surface. It is vital for all known forms of life. On Earth, 96.5% of the planet's crust water is found in seas and oceans, 1.7% in groundwater, 1.7% in glaciers and the ice caps of Antarctica and Greenland, a small fraction in other large water bodies, and 0.001% in the air as vapor, clouds (formed of ice and liquid water suspended in air), and precipitation. Only 2.5% of this water is freshwater, and 98.8% of that water is in ice (excepting ice in clouds) and groundwater. Less than 0.3% of all freshwater is in rivers, lakes, and the atmosphere, and an even smaller amount of the Earth's freshwater (0.003%) is contained within biological bodies and manufactured products. A greater quantity of water is found in the earth's interior. In societies like our India with developing economics, the optimum development, efficient utilization and effective management of their water resources should be the dominant strategy for economic growth. But in recent years unscientific management and use of this resources for various purpose almost invariably has created undesirable problems in its wake, water logging and salinity in the case of agriculture use and environment pollution of various limits as a result of mining, industries and municipal use .“Mine water is produced when the water table is higher than the underground mine workings or the depth of an open pit surface mine. When this occurs, the water must be pumped out of the mine. Alternatively, water may be pumped from wells surrounding the mine to create a cone of depression in the ground water table, thereby reducing infiltration. When the mine is operational, mine water must be continually removed from the mine to facilitate the removal of the ore. However, once mining operations end, the removal and management of mine water often end, resulting in possible accumulation in rock fractures, shafts, tunnels, and open pits and uncontrolled releases to the environment. “Ground water drawdown and associated impacts to surface waters and

nearby wetlands can be a serious concern in some areas. "Impacts from ground water drawdown may include reduction or elimination of surface water flows; degradation of surface water quality and beneficial uses; degradation of habitat (not only riparian zones, springs, and other wetland habitats, but also upland habitats such as greasewood as ground water levels decline below the deep root zone); reduced or eliminated production in domestic supply wells; water quality/quantity problems associated with discharge of the pumped ground water back into surface waters downstream from the dewatered area.

2- MATERIALS AND METHODS

The samples were collected during the month January 2012 to June2012. Samples for analysis were collected in sterilized bottles (plastic with acid washed).pH – systronic pH meter Type 361.The total hardness of the water samples were determined by complexometric titration with EDTA using eriochrome black-T as an indicator. Sodium and potassium - flame photometer (128) technique. .

3- RESULTS AND DISCUSSION

The pH required for the optimum growth of plant is 5.4 to 7.0 leaf chlorosis, reduced root growth and decay, stunted shoot growth. Poor flower development are seen in plant/crops to high pH .Appearance of these symptoms is due to influence of pH on the solubility of ions such as Iron. Due to reaction with hydroxyl ions at high pH conditions ferrous form (Fe^{2+}) of iron is transformed in ferric form (Fe^{3+}),which is inactive in plant tissues. pH ground water samples were varied from 7.6 to 8.2

Usually zinc is found in abundance in earth crust in the ore form (sphalerite – ZnS) with the associates of lead element. It is found in soil, water, air and in all food items. The process by which zinc comes in environment includes the human activity as well as natural phenomenon. The various human activities which led to entrance of zinc elements in the surrounding environment are mining, purifying of zinc, cadmium, and lead ores, coal burning, steel production, and burning of wastes. Most of the zinc in water bodies, such as lakes or rivers, settles on the bottom. However, a small quantity may remain either dissolved in water or as fine suspended particles. As the acidity of water rises the level of dissolved zinc in water may enhance. Most of the zinc in soil is bound to the soil and does not dissolve in water. However, depending on the characteristics of the soil, some zinc may reach groundwater. Zinc is an essential element in human nutrition. The daily requirement is 4-10 mg depending on age and sex. Food provides the most important sources of zinc. Zinc is a vital element in all living organisms. Almost 200 zinc-containing enzymes have been recognized, including many dehydrogenases, aldolases, peptidases, polymerases, and phosphatases14. Nutritional zinc deficiency in humans has been found in a number of countries . Drinking-water usually makes a insignificant input to zinc intake unless high concentrations of zinc occur as a consequence of corrosion of piping and fittings. Under assured conditions, tap water can give up to 10% of the daily intake.

In our earth crust manganese metal is found in plenty with iron ore therefore it is not found in pure form but as constituent of more than 100 minerals. It is a necessary element for the appropriate working of both animals and human beings because it is an important mineral for the functioning of different types of cellular enzymes. The existence of manganese is generally found in 11 oxidative states. Mn2+, Mn4+ or Mn7+ are the most environmentally and biologically significant compound of manganese. In surface and ground water manganese are found naturally. Presence of manganese in soil can leach in water sources. At various region contamination of manganese in water sources are International Science Congress Association 5 attributed by human actionsThe hazard

produced by overexposure to manganese must be weighed beside the necessity for some minimum quantity of manganese in the diet, since manganese is an essential nutrient, performing as a component of numerous enzymes and a contributor in a number of significant physiological processes. Manganese intake from drinking-water is normally substantially lower than intake from food. Manganese lack in humans appears to be rare, because
manganese is found in many general foods. Animals experimentally maintained on manganese-deficient diets exhibit impaired growth, skeletal abnormalities, reproductive deficits, ataxia of the newborn and defects in lipid and carbohydrate metabolism. The greatest exposure to manganese is generally by the food. Adult persons take manganese between 0.7 and 10.9 mg/day in the diet. The higher intake reported being associated with some vegetarian diets .

Sodium and potassium are termed, as alkali metals sodium is abundant in water, because of its compound are readily soluble. In ground water it is generally found to be
>5mg per liter .Ground water pollution by sodium salt is an unavoidable phenomenon caused form the return flow of irrigation and disposal of industrial and urban wastes. Sodium in water samples were varied from 23.3mg/L to 47.2mg/L **.**

Potassium is involved in maintaining the water status of the plant and the turgor pressure of its cell wall and the opening and closing of the stomata .Potassium is required in the accumulation and translocation of carbohydrates. Plants require 0.26 meq /L Potassium in water samples were varied from 2.1mg/L to 22 mg/L.

Parameter	**pH**	**Mn**	**Zn**	**Na^+**	**K^+**
Point-1	7.1	0.212	0.23	21.2	1.5
Point-2	7.2	0.045	0.25	22.1	1.4
Point-3	7..6	0.361	0.41	33.1	2.9
Point-4	7.8	0.034	0.25	27.2	2.2
Point-5	7.9	0.051	0.12	13.3	1.0
Point-6	7.2	0.451	0.42	25.4	1.6
Point-7	8.1	0.241	0.41	31.1	1.1

All the value are expressed in mg/L except pH,

Point-1 Kiratpura,Point-2 piperipura,Point-3 Samya,Point-4 Puri ,Point-5 Fatehpur School ,Point-6-Ladwaya,Point-7 RKC school Tapra

4- CONCLUSION

On the analysis basis it can be concluded that all the tested ground water samples are within permissible limit and ground water are suitable for Irrigation purpose and Plant uses. Reducing the amount of chemical pollution released into the water, soil and air is the easiest way to prevent harm to plants and citizens take steps such as contacting local recycling centers to dispose of toxic chemicals, and using biological methods such as ladybugs, instead of traditional pesticides, to control pests in the yard or garden.

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