International Journal of Chemical Studies

P-ISSN: 2349–8528
E-ISSN: 2321–4902
www.chemijournal.com
IJCS 2018; 6(2): 3741-3743

Received: 05-01-2018
Accepted: 09-02-2018

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Analysis of Impact of polluted water on ground water in Buhana tehsil of Jhunjhunu district in Rajasthan

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Abstract
The Ground water in Buhana tehsil is unfit as a source of drinking water due to the chemical and bacteriological pollution of surface water. It describes the important results of water quality analysis of the ground water samples of the TW, OW and hand pumps of the Buhana tehsil in Jhunjhunu district in Rajasthan. When a systematic study has been carried out on the impact of polluted water on ground water then it is found that a lot of parameters like's TH, TDS, pH, EC etc are present in higher concentration compared to ICMR standards. The interesting fact is that the high Value of polluted particles is making ground water unfit for drinking.

Keywords: WQI, water quality parameters, Buhana, Jhunjhunu, Ground water, physio-chemical parameters, water born disease, blue baby disease

Introduction
There are very critical conditions of floor water for sustenance of lifestyles but it is very essential for herbal resources. Nearly 90% of Indian population which lives in rural areas population used ground water for ingesting and home capabilities. When floor water is used for herbal aims than it has no pollution but artificial sports activities are considerable for its pollution and make it useless for life. There are many factors which affect the excellence of ground water. These factors are the sports activities of Herbal and anthropogenic life, weather, geology of the location and irrigation practices. The open water of our body is responsible for suffering from infection and pollutants.

Since a few natural impurities are incorporates in rain water. These impurities are gets eliminated when it passing through the soil layers. Such type of ground water is used for drinking, irrigation, and commercial purposes. At present time there are a extensive alternate with respect to contamination of heavy metals.

The residential study of physico-chemical contents of ground water provides its geological profile. Some perspectives of environment related to interaction between soil and water, pollution fame, human and animal health problems etc can be explained on the basis of this geological profile. The process of sewage disposal in water and releasing effluent from numerous industries in to clean water aquifers is a vital reason of ground water pollution. The remarkable report of Essential ground water board (EGWB) proposed in India on 30 November 2011 to examine the floor water. The report concluded that the first rate of floor water in shallow aquifers is appropriate for domestic uses but in few areas the report related to floor water is not appropriate because some components are stated to the excessive attention in floor water bodies.

Impact of polluted water on ground water
The report of EGWB stated that in deeper aquifers the content of arsenic, fluoride and iron varies from place to place with respect to exploration paintings and public awareness. The exploration painting contains the changing in salinity model located in the inland and coastal place. The report explain that in India 199 districts in 19 states have been diagnosed the excessive value with hassle. The quantity of arsenic pollutants inside the intermediate aquifer is found at drastic level in water bodies of seventy nine blocks of eight districts in West Bengal. The volcanic formation process is responsible for high quantity of arsenic element in water aquifers. In some states of India the quantity of iron lies at high attention level.

In 1995 Central Pollution Control Board (CPCB) have been suggested a report which tell us that in few part of country a lot of ground water pollutants are present in the form of heavy steel together with chromium, lead, nickel etc. These pollutants come from unplanned disposal of enterprise effluent. The report of CPCB (1995) states that the ground water of three special states are highly polluted by heavy metals and pesticides. These three states are Delhi, Uttar Pradesh, and Haryana.
The water examined becomes located to be the polluted water under examination is located above the most permissible range determined by Bureau of Indian Standard. The important aim of examination was to understand the significance and capabilities of pure underground water for consuming agricultural purpose. But it was relying a doubt on the creativity of consciousness on toxic power of metals which caused approximately water borne disease.

What is the effect of water pollution on a plant's existence cycle?
Water pollutants have harmful effect on various component of biosphere. The various component of biosphere are plants, animals and human beings. Effects of these pollutants depend on what types of pollutant enter the environment. The motivation of plant boom was exposed from time to time by water pollution. The way of manner of presentation of vitamins and food also depends on it. Due to the changing in developing condition like elevating or lowering in surrounding acidity, the flowers could damaged or killed in extraordinary time.

Fertilizers: To grow well the vegetation takes the nutrients from the environment present surrounding it. The use of nitrogen and phosphorous has increased abruptly due to its additional benefit of usage in photosynthesis. This is the reason that they are commonly used elements in plant fertilizers. Water bodies are polluted with the agricultural runoff. With this agricultural waste elements like nitrogen and phosphorous also goes in water bodies often causing sea blooms. Excessive growth of algae in water causes algal bloom in polluted water which results in oxygen deficiency in water. It is highly needed to grow plant in that seaweed farms which have highly runoff problem. Seaweed can take within the extra nutrients and be harvested for consumption.

Marine particles: It is the garbage of ocean which accumulates inside the water of it. Plastic debris are manufactured near the water's floor impedes in the presence of daylight or electricity. Flora is also a part of plant life which depends on Sunlight. It is the pressure of photosynthesis way. It also help in creating the molecules of glucose. With the aid of blockading daylight, Marine particles create a barrier in photosynthesis process of plants. Hence they can't be used their complete capability in the formation of glucose, which stunts their growth.

Acid rain: In environment there are a lot of herbal and man-made resources which emits the harmful sulfur dioxide and nitrogen dioxide gases which caused acidic rain. The excessive quantity of these gases caused water pollution that alters for plant's surrounding pH value, which also helps in acid rain, can damage or kill the plant. Acid rain is office work due to atmospheric sulfur dioxide and nitrogen dioxide, which is probably emitted from herbal and human-made resources. These sources also possess volcanic phenomena and fuels of burning fossil. There are interaction between these sources and the dangerous atmospheric acid containing hydrogen and oxygen atoms. These acids are sulfuric and nitric acids that are represented as H_2SO_4 and HNO_3 respectively.
The sulfuric and nitric acids are formed by the reaction of SO_2 and NO_2 with water and comes down with rain and moves lower back to earth via precipitation. The acid particles which present in acid rain reached the floor and mixed into the groundwater and reached the home via water supply finally into our bodies and damaged it. When the water of acid rain collects in aquatic environments than create lowering in water pH which caused killing vegetation because extra acidic conditions is not good for aquatic animals.

Phytotoxicity: At present the aquatic or terrestrial environments suffering from chemical pollution boom. These chemicals are soaked up by the roots of plants. Phytotoxicity has a poisonous effect on plants life by their toxic chemical substances. Phytotoxicity is caused a lot of change in plants like bad growth, loss of life seedlings and dead spots on leaves. Mercury is a very toxic metal because it has phytotoxic effect on humans associate with fish and on aquatic plant life.

Trace element: The elements such as Cu, Fe, Mnetc are known as trace element because these are required in few quantity. Thus those elements which are present in very small quantity on earth are known as trace element. Due to the irrigation of waste water in ground there was no proper change in trace elements concentration in plants. The manganese element present in the range of 1.51 to 7.95 ppm in polluted water effluent treated plants while the range of copper in ground water effluent irrigated plants was found between 0.83 and 3.65 ppm.
Iron is one of such trace element that is present in highest range. In ground water polluted effluent irrigated plant iron element is present in the range of 58.53 ppm as minimum & 561.76 ppm as maximum. Boron is a specific element which present in all the ground water polluted effluent treated plants. The study of trace element present in plants also showed that ground water pollution effluent treated plants absorbed the elements from soil only.
The role of micro nutrient in crop production was proved along time before. It is proved that a certain concentration of micro nutrient is useful for plants while at higher concentration all the micronutrient exhibit some toxic effect on plants as well as human being. All nutrients are present in soil from which the plants absorb these nutrients for their growth and their metabolic activity. Zn, Cu, Fe, Mn and Mo are some essential micronutrients which present in plants organ. In these elements some promote the absorption, while some other element inhibits the absorption. On the other hand we can say that certain element exhibits both inhibition and enhancement of the absorption.
On the study of application of the effluent present in water, we found that Zn is an essential part of a number of dehydrogenases and peptidases enzymes. These enzymes as well as Zn play an important role in plant metabolism. The concentration of Zinc present in plants varied from 1.38 to 13.05 ppm. In the case of ground water effluent treated plants the maximum level of Zn was found at 5.6 ppm. Boron is also an essential micronutrients for plants growth but was found in very low quantity.

Conclusion

After the detailed study of water resources of study region we get informations that when the qualities of water under goes divergence due to the mixing of waste product in water than it is known as water pollution. There are many types of waste product like sewage, industrial waste, agricultural waste ctc. Beside this there are some additional pollutants such as insoluble solid particles, soluble salts, garbage, low level of radioactive substances, algae, bacteria etc which play a major role in water quality deviation. The water of the field that lies under Buhana tehsil is quality less with respect to drinking purpose. Since the physio-chemical parameters of water shows deviation with their desirable range. After the deep study of the field we get knowledge that the people of the study region suffering from physical disorder likes knee pain, body weakness, Diarrhoea, Blue baby syndrome, paleness of teeth, Hair loss (Alopecia), weakness in backbone, osteoporosis, heaviness stomach, malnourishment or malnutrition, impotence etc. The main cause of these problems are deviation in physico-chemical parameters of water. Beside this the other qualities of water such as lacking in sweetness lacking in transparency, stink in water, lacking in digestion capacity etc also created by deviation in water quality.

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