



Water Quality & Pollution

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Abstract

The most important use of water in agriculture is for irrigation, which is a key component to produce enough food. Irrigation takes up to 90% of water withdrawn in some developing countries and significant proportions in more economically developed countries (in the United States, 30% of freshwater usage is for irrigation). Fifty years ago, the common perception was that water was an infinite resource. At this time, there was fewer than half the current number of people on the planet. People were not as wealthy as today, consumed fewer calories and ate less meat, so less water was needed to produce their food. They required a third of the volume of water we presently take from rivers. Today, the competition for the fixed amount of water resources is much more intense, giving rise to the concept of peak water. This is because there are now nearly seven billion people on the planet, their consumption of water-thirsty meat and vegetables is rising, and there is increasing competition for water from industry, urbanisation and biofuel crops. In future, even more water will be needed to produce food because the Earth's population is forecast to rise to 9 billion by 2050.

Keywords: pH level, palms, spider plants and nutrient plants.

1- INTRODUCTION

Water is considered a purifier in most religions. Faiths that incorporate ritual washing (ablution) include Christianity, Hinduism, Islam, Judaism, the Rastafarimovement, Shinto, Taoism, and Wicca. Immersion (or aspersion or affusion) of a person in water is a central sacrament of Christianity (where it is called baptism); it is also a part of the practice of other religions, including Islam (Ghusl), Judaism (mikvah) and Sikhism (Amrit Sanskar). In addition, a ritual bath in pure water is performed for the dead in many religions including Islam and Judaism. In Islam, the five daily prayers can be done in most cases after completing washing certain parts of the body using clean water (wudu), unless water is unavailable (see Tayammum). In Shinto, water is used in almost all rituals to cleanse

a person or an area (e.g., in the ritual of misogi). Hydrology is the study of the movement, distribution, and quality of water throughout the Earth. The study of the distribution of water is hydrography. The study of the distribution and movement of groundwater is hydrogeology, of glaciers is glaciology, of inland waters is limnology and distribution of oceans is oceanography. Ecological processes with hydrology are in focus of ecohydrology. The collective mass of water found on, under, and over the surface of a planet is called the hydrosphere. Earth's approximate water volume (the total water supply of the world) is 1,338,000,000 km³ (321,000,000 mi³). Liquid water is found in bodies of water, such as ocean, sea, lake, river, stream, canal, pond, or puddle. The majority of water on Earth is sea water. Water is also present in the atmosphere in solid, liquid, and vapor states.

It also exists as groundwater in aquifers. Water is important in many geological processes. Groundwater is present in most rocks, and the pressure of this groundwater affects patterns of faulting. Water in the mantle is responsible for the melt that produces volcanoes at subduction zones. On the surface of the Earth, water is important in both chemical and physical weathering processes. Water, and to a lesser but still significant extent, ice, are also responsible for a large amount of sediment transport that occurs on the surface of the earth. Deposition of transported sediment forms many types of sedimentary rocks, which make up the geologic record of Earth history.

2- MATERIALS AND METHODS

The samples were collected during the month November 2011 to December 2011. 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

Pollution to the water, air and soil is harmful to plants and animals. It causes injury and inhibits the growth of plant species. The benefits of plants inside are more than aesthetic. They bring oxygen, take in chemicals and just plain make the air better to breathe. Plants have been proven to remove harmful airborne harmful contaminants and increase oxygen level which can lead to increased concentration and productivity levels. 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.

Hardness of water is due to presence of calcium ion and magnesium ion. Plants require 150 ppm hardness in water, but samples had hardness range from (92- 150) ppm; which disturb the calcium and magnesium ratio in water which should be 3:5. If calcium is excess it blocks the ability of Plants to uptake magnesium which cause. Magnesium deficiency, whose sign are yellowish green patch near the base of the leaf between the midrib and the outer –edge; with acute deficiency leaves may become entirely yellow –bronze and eventually drops and if in hard water magnesium is excess, it will cause calcium deficiency in plants, whose sign are young leaves are affected first and become small and disorted or chlorotic with irregular margins. Spotting or necrotic areas, bud development is inhibited blossom end root and internal decay may also occur and root may be developed.

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 from the return flow of irrigation and disposal of industrial and urban wastes. 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 Chloride in the form of chloride ion is one of the major inorganic anions in water and wastewater. The salty tasted produced by chloride concentrations is variable and dependent on the chemical composition of water some water containing 250mg chloride per liter may have a detectable salty taste. The chloride is troublesome in irrigation water and harmful for aquatic life.

Parameter	pH	T.H.	Ca ^H	Na ⁺	K ⁺	Cl ⁻
Point-1	7.3	110	60	27.2	2.7	48.2
Point-2	7.8	95	45	32.2	2.3	61.8
Point-3	8.0	110	50	42.4	1.8	61.1
Point-4	8.2	145	95	44.1	20	73.1
Point-5	7.6	90	55	22.1	3.1	30.2
Point-6	8.0	140	95	32.4	2.2	61.1
Point-7	7.9	130	70	41.1	2.2	81.2

All the value are expressed in mg/L except pH, T.H. = Total hardness, Ca^H = Calcium Hardness,

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