RESEARCH ARTICLE

Present and Future Prospective of Drinking Water Management

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ABSTRACT

Water resources management is a big and hot issue of all over the world population but it depend on the need of high treatment and management cost. Cost effective drinking water treatment methods (coagulation, boiling and Chlorination) developed for humans and animals (cows and buffaloes) was given in very low cost as from Rs.0.15 to Rs. 0.75 as shown in previous studies. In this study for better health and safe drinking, it is an affordable drinking water treatment cost for common people in present and future. Contaminated canal water for drinking purpose needs dose 3mg/l of chlorine for complete disinfection without residues and 1.5 mg/l dose of chlorine is required for treating the drinking water of storage tanks without any toxicity causing by chlorine residues as mentioned in research papers.

Keywords : Water Resources, Treatment Cost, Toxins, Pollutants, Disinfections

INTRODUCTION

Almost the world's population now presently facing the deficiencies of potable water with better quality, with using of correct and applicable technology or water purifications above methods for domestic water is a wonder full solution of these problems with very low prices. Increased efforts to adopt the advanced technology and methods for making potable water as free from microbes and their released toxins chemicals for all domestic purposes including the storing in house or in farms for animals drinking and also can also be national and international level used the water treatment methods in this research as removing the organic material in forms of toxins with coagulation

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process as Aluminum sulphate, ferric chloride and boiling (dosing and time details is mentioned in previous section), disinfection method involves chlorination with specific dose as described different in the section of management plane (Badar *et al.*, 2016).

Hygiene information is very important for better utilization of safe water drinking. Moreover, the procedure involved for drinking water management system and how to store at the domestic level, it is need to increase knowledge of individual and community about the awareness of water hygiene and public health. The awareness of this type is very useful to achieve and support to the final objective of research about covered and piped potable water for the World's population, then it will help to reduce water borne disease like diarrhoea and cholera in the our community (Batool *et al.*, 2016).

Coagulation experiments conducted to know actual effective and improved dose used to optimize for coagulation process for maximum removal of toxins in form of organic matter from drinking water. Selected Aluminum sulphate coagulation dosing (10mg-27mg) for treating the contaminated drinking water, this dose does not causes of toxicity to human and animal health as the Aluminum residues present in drinking water supplies (Zia *et al.*, 2016).
The objective of the present study is the assessment of safe drinking water quality in present situation and needs for future panning.

DATA ANALYSIS

Data analysis give the different field studies about management and treatment of drinking water and make it more economical and physible for populations. According to previous research much possibilities are available under different method of treatment needs suggest a strong analysis for present and future plan to adopt for minimize the drinking water risks. Previous researches on drinking water have clear vision on making the planning and policy for sustaining the water resources management (Khokhar *et al.*, 2016).

Secondary data as collect the random blood sampling from different places (animals use for meat and milk) was with the frequency of samples (116). All samples were collected by syringe in sterilized blood vessel used as container and blood sample 5 ml collected by volume and actual capacity of container was 5 ml. The temperature of the day when collect the samples was 16 ^{0}C. Serums of samples were collected after mechanical centrifugation of the samples blood, and start the analysis of clinical chemistries of blood samples. Similar way that drinking water samples are tested as same parameters as toxins and pollutants for similarity showing the pollutants in blood samples (Moghira *et al.*, 2016).

RESULTS AND DISCUSSION

Toxic effects are also appeared on animals and human population by taking the medical lab tests of blood samples for knowing the performance of liver and kidneys. From tests values, it is clearly observed that liver and kidneys have effected in same ways of both infected human and animals due to contaminated water and food taking (Badar *et al.*, 2016).In present study, it is investigate the toxins in drinking water samples from microbe's activities, very harmful health effect on humans and animals and especially their liver functions disturb badly, for this purpose draw the blood samples of both humans and animals for LFTs medical lab test. Liver abscesses in cattle and buffalos have a major economic impact on the beef and milk processing business for the reason that of liver problem can shrunk body size and animal performance (Batool *et al.*, 2016).

Inside the liver, enzymatic activity have been raised up, this is may be due to synthesis of enzymes, their low levels indicate that the enzymatic inhibition due to liver injury without specific regeneration. Among liver enzymes, amylase GOT, GPT and ALT were elevated in the samples of animals blood, it was showing acute liver damage

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(hepatitis), while in samples of animal's blood, all these enzymes were inhibited showing hypocondition or dysenzymia (Moghira *et al.*, 2016).

Small and taste of Water is normalized by using adsorption process with granular activated carbon and achieved effective 98.6% removes the organic carbon in form of toxins. The results show that coagulation techniques is very useful and cheaper for removing organic matter as compare to other techniques like as filtrations or electrolysis. Overall quality of drinking water can be maintained by monitoring microbes and their toxins and possible their reductions by adopting the methods like boiling, coagulation and chlorination (Ahsan *et al.*, 2016).Presently, very less people have known almost existence of other bacteria like C. Botulinum, algae like cyanobacteria pathogens in water body and their metabolites mean toxins under different environmental conditions that are most important understandings for active control on water borne diseases. The microbial contamination sources from human and animals is better understandings to control water borne diseases which is still a great risk for public health (Badar *et al.*, 2016).

In addition to establish the link between waterborne pathogens and toxins that is an important task for chemists and microbiologist, deliver further advanced visualization about drinking water quality checks.

CONCLUSIONS

Further introduce new and cost effective chemical compounds are needed for water treatment and make it mineralized water quality. A company or organization should be lunched for public awareness on waterborne diseases effects on general public health and its treatments. Besides that studies should also be done from mathematical and Statistical modeling angles.

This study further highlights the actual causes of water pollution in rural areas of Sheikhupura district:

❖ Lack of complete data on water and environment.
❖ Absence of civic control measures.
❖ No National water Quality Standards.
❖ Unawareness to the general public regarding environmental impact.
❖ Role of Government monitoring agencies not at the required pace.
❖ Role of city policy makers/managements has not taken up this issue as future health hazards of the habitants of the Sheikhupura District.
❖ Analysis of water quality trend indicates escalation of the pollution over the years because of population growth and increased Agriculture use.
❖ The results of the study provide significant value bases for decision makers to carry out effective air pollution control and environmental management plans.

RECOMMENDATIONS

Keeping in view the quality of drinking water of rural area under study following recommendations has been made. The drinking water of rural area under study should be boiled before drinking it.

o This reported case of waterborne pathogens and their toxins in drinking water is alarming. Government should fulfill its basic complacence of providing safe drinking water and awareness to community.
o Contaminated canal water for drinking purpose needs dose 3mg/l of chlorine for complete disinfection without residues.
o 1.5 mg/l dose of chlorine is required for treating the drinking water of storage tanks without any toxicity causing by chlorine residues.
o Florid element should be added 5 ppm in drinking water quality standards by WHO and drinking water authority of countries because it is necessary for dental normal growth.

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o The quality of drinking water related to pathogenic microbes and their toxins should be listed in the drinking water guideline established by WHO and Pakistan

o Toxins limits that should be included in WHO and Pakistan's standards of drinking water quality and it must be applied these standards all over world including Pakistan.

o The general cleanliness and hygiene of water at main storage reservoirs may be maintained at regular basis and must be established rules by the district and federal governments.

o Canal water should be treated and disinfected by adding the chlorine dose (3 mg/l) before using for drinking and domestic purposes for the general public.

o When decisions are made on water-use, the local municipality should involve suitable professional disciplines, especially environmentalists, doctors and town planners for the health protection of general public.

FUTURE WORK

The areas of environmental degradation in Sheikhupura district that have needed more on following next issues as include:

- Medical treatment of water born toxins diseases
- Effects on Soil & Agriculture Pollution due to contaminated water
- Cumulative water quality Pollution Model
- Impact, assessment, evaluation and modeling of Traffic Pollution
- Model for Water Quality
- Model for Sewage, Sludge Treatment.

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