

Treatment of Wastewater by Using Chemical and Microorganism: A Review

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Abstract: This present review paper focus on the Treatment of wastewater. As a fresh water is a need of all living thing, hence it is necessary to available in large quantity but nowadays water resources getting polluted due to liquid and solid waste produced by various industrial and domestic activities. Conventional Treatment of wastewater includes various processes due to which it is costly, required large space and also difficult in maintenance. hence there is need of introducing another treatment process such as treatment of wastewater using chemical and microorganism. In this treatment process chemical eco clean 2300, and microorganism bacillus is use. For 1 litre of waste water 40 ml of eco clean 2300 required. It is herbal chemical used to settle down all the impurities present in wastewater and make it usable.

Keywords: resources, conventional, microorganism, costly, herbal, impurities, settle.

I. Introduction

As the requirement of water is increase with increasing population. But due to the industrial development and solid waste produced by human settlement most of the water resources getting polluted. In some arid region of the country, there is a need of development of low cost and low technology method for the availability of water to the increasing population. As the conventional treatment processes are costly and required large space and maintenance. Hence the new method of treatment is implemented in this method chemical and microorganism use to treat the waste water.

The chemical use for the treatment is herbal does not contain any harmful chemicals because the eco clean 2300 is made up of combination of Azadirachta indica (Neem), Moringa olifera (Drumstick), Strychnos potatorum (Cleaning nut), Occimum sanctum (Tulsi), and Melaleuca alternifolia (Tea Tree Oil) and this products is mixed together by using organic solvents and stabilizers. By mixing this chemical in waste water of required proportion it reduces the concentration of BOD, COD and Suspended particles.

The bacteria bacillus is available in many different species according to function. The bacteria bacillus is use to decompose the sludge present in the wastewater and secrete the enzymes. It is economical method it reduces the cost of aeration.

As the water obtain after treatment is free from hardness, chemical, impurities hence it is use for the various purposes such as agricultural purpose, industrial purpose, recharge of groundwater, washing, gardening, etc.

II. Literature Review

S. V. Maruti Prasad et. al. (March 2016): This paper based on the study of coagulation and flocculation process, which are used for treatment of waste water. The use of conventional method required complex operation and costly. So here plant- based coagulants like "Moringa olifera" and "Tamarindus Indica" are used for coagulation process. Which reduces the impurities like PH, alkalinity, turbidity and heavy metals. This Plant-based coagulant is herbal, and natural. It improves the quality of water and make water usable.

Saima Hanif et. al (2016): The waste water coming from toilets, urinals, cloth washers, dishwasher, bathtub, shower comes in the contact with fecal content the harmful disease-causing bacteria and pathogen produced. hence to overcome the various diseases, treatment of wastewater is required for which the technique of composting toilets is used. This treatment based on the aerobic process, in which decomposition of compound carbohydrates, proteins, organic content, content of lipids takes place. which result into formation of manure.

Moses Kolade David: This paper work on the treatment of wastewater by using methods such as aerobic, anaerobic and combination of both. The waste water coming from various industries contain acids, bases, toxic material, and matter having high biological oxygen demand also other organic and biodegradable matter. For

removal of this matter technique of treatment at source developed. Textile waste water includes variety of dyes and chemicals and major pollutants in textile wastewater are high suspended solid, and other soluble substances, hence it required to treat at source.

Shailendra Kumar Yadav (march 2016): This review paper focus on the study of wastewater management for smart cit. As urbanisation increase day by day, due to which production of waste also increases proportional. To overcome the production of large quantity of waste smart city work on the ecological awareness. Which helps to reduce pollution and improve quality of life.

Andre Castro Lundin (2017): This review paper based on the study of waste management and waste monitoring technique. In this system wireless node and sensors are used as we know that the collection and disposal of waste is one of the major issues facing by the urban cities, hence required to improve the technique of monitoring and management which is depending upon the needs and requirement of people.

H. S. surti (2016): This review paper based on the analysis and treatment of wastewater. In this paper physio-chemical technique used for treatment. physio - chemical treatment include sedimentation, filtration, coagulation, and flotation. The wastewater coming from different industries treated by using this method focused on removal of pH, colour, TDS, SS, BOD, COD, oil and grease, chloride, sulphate, total coliform. Also,treatment of wastewater water done with the help of bacillus subtilis, and microorganism which reduces organic matter from wastewater.

Jayashree dhote et. al. (5 July 2012): This review paper based on the variety of option for the treatment of wastewater. The wastewater treatment techniques referring to the process of removing pollutants, toxic material, dyes, from wastewater coming fromvarious industries, municipal wastewater, agricultural waste. There are various techniques use for the wastewater treatment. In which removal of organic matter by adsorption, for which fly ash is use as absorbent it removes toxic material and colour, also remove copper compound. The active filtration through alkaline media used for removal of phosphorus. These technologies treat the wastewater upto certain level.

TAGUCHI, Kazuyuki et. al: Developed a new technology called treatment of wastewater by using bacillus bacteria by Fuji Electric. By using this solution which contain bacillus bacteria reduces the cost of electric power for the aeration and sludge disposal. This method stated that there are many bacillus species available in nature and many of them having a high waste water purifying capability to decompose concentrated organic matter in a less time it also have ability to secrete a large quantity of enzymes which decomposes the excess sludge by selecting proper bacillus fuji electric reduce both the cost of running and it also improve the performance.

III. Conclusion

The chemical echo clean 2300 was analyzed and tested. Based on the test results, it is concluded that, the wastewater after treatment does not contain hardness, also reduces alkalinity, and impurities present in wastewater and make it usable for the various purposes.

From the results it is ensure that the treated water should be free from chemical as well as impurities. This treatment of wastewater using chemical and microorganism is economical than the conventional treatment also required less maintenance and low technology. It is beneficial for the arid region to overcome the scarcity of water supply.

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