ISBN	978-93-88122-14-6	VOL	01
Website	www.veltech.edu.in	eMail	nisdce@veltech.edu.in
Received	04-May-2020	Accepted	19-May-2020
Article ID	NISDCE140	eAID	2020.nisdce.140

COD REDUCTION IN TREATMENT OF SEWAGE WATER USING MICROORGANISMS

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ABSTRACT: In India the effluent and sewage discharged from industries and urban settlements are the major source of pollution of surface water bodies like rivers, lakes, wetlands etc. resulting in their environmental degradations. Therefore proper collection, treatment and disposal of industrial wastes and domestic sewage is an essential pre-requisite for conservation of aforesaid natural water bodies in order to maintain their environmental sustainability which is also related to the general health of the public and the improvement of quality of life. As per study carried out in 2003-04 by Central Pollution Control Board (CPCB), in India, the total waste water generation from class-I and class-II towns was 29000 million liters per day. Rainwater from roofs and roads may also drain into the sewer network. In this project work a study has been carried out on reduction of chemical oxygen demand (COD) in sewage water during its treatment process. The COD content in sewage water if left untreated, will reduce the dissolved oxygen in water bodies which ultimately results in the death of aquatic organisms. So in order to save the lives of aquatic organisms present in water bodies the COD content is reduced in sewage water. Various literatures are studied regarding the anaerobic treatment method using microorganisms to reduce the COD content in the sewage water . In the literatures microbes such as Aeromonas , Pseudomonas , Bacillus, Rhizobium etc reduces the COD content of the sewage water sample. Among that microbes which gives best efficiency is identified and it is used for reduction of COD in the sewage water through anaerobic treatment process here. Finally after the treatment process the treated sewage water COD content is compared with its standard limits and the results are discussed.

Keywords: *Chemical oxygen demand(COD), Aquatic organisms, Dissolved oxygen (DO), Microbes, Anaerobic treatment*