

BOOK OF ABSTRACTS
of
National Seminar Cum Workshop
ON
**“FEEDING BEYOND THE PLATE: A
COMPREHENSIVE GUIDE TO ENTERAL AND
PARENTERAL NUTRITION”**

Organized By
Department of Nutrition and Dietetics (UG and PG)
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Book of Abstracts

**“FEEDING BEYOND THE PLATE: A
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MICROBIAL BIODEGRADATION AND ELECTRO-OXIDATION TREATMENT OF HOSPITAL WASTEWATER: A COMPARATIVE STUDY

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ABSTRACT

Effective management of hospital wastewater is essential due to its significant organic load and the presence of pathogenic microorganisms. This study explores integrated treatment approaches, assessing the efficiency of microbial biodegradation and electrochemical oxidation in addressing hospital wastewater contaminants. We analyzed the microbial communities present in the waste water and evaluated their biodegradation capabilities using various substrates typical of hospital effluents. Bacteria *Priestia flexa* was identified using 16S rRNA genome sequencing analysis assess their effectiveness in results demonstrated that specific microbial consortia significantly enhanced the degradation of organic pollutants in 48 days. The analysis study confirms the TOC of 86% removal was achieved after the bio degradation process. The degradation process was confirmed using FTIR for the removal of functional groups. GCMS for identification of organic pollutants and volatile compounds in bio degradation process. Phyto toxicity studies in plants seed such as Clitoria and Coriander were used for the identification levels of growth in the control water, raw water and Treated water. The growth of the plants was measured from day 1 to day 20. Toxicity studies in Zebra fish Embryo is used to identify the survival of the fish embryo from 24 hrs, 48 hrs and 72 hrs. This study is used to identify the various comparison studies between the raw water sample and treated water sample drug concentration in 5, 10, 15, 20, 25 ml and with control value drug samples. The combined approach showed improved treatment efficiency compared to individual methods and potential effective of hospital waste water management and sustainable treatment options that can mitigate the environmental impacts of hospital waste water.

Keywords: Bio Degradation, Electro-Oxidation, 16S rRNA, Phyto Toxicity, Fish Embryo