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Genotoxic Assessment of Hospital Wastewater and its Phytoremediation by Rice Husk †

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Abstract: Clearwater is an unavoidable necessity in human life aside from shelter and food. Underground and surface water are the principal sources of clean water. However, with the ever-widening enlargement of medication and health care undertakings in the hospital, large volumes of wastewater are often drained into municipal wastewater systems without pretreatment, which imposes long-term risk to human health and the environment. Hence, hospital wastewater must be adequately treated before discharge into the surroundings. Nowadays, advanced and conventional treatment methods are not constantly efficacious towards the absolute removal of water pollutants. The phytoremediation method is a division of bioremediation that implements the utilization of plants for the remediation of drain water. Rice husk, the hard coverings of the grain of rice (*Oryza sativa*), can absorb excessive contaminants present in hospital, domestic, and agricultural wastewater. The broad application of this plant is due to its availability, bioaccumulation potentiality, low-cost material, invasive mechanism, and its uses in fertilizers or fuels. This study covers the extent of contamination caused by hospital wastewater to demonstrate the physicochemical characteristics and its genotoxic prospects. It also circumscribes the efficiency and potentials of Rice husks in the Phytoremediation of wastewater.

Keywords: hospital wastewater; genotoxicity; rice husk; abatement; environmental conservation.

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Conflicts of Interest

The authors and co-authors of this study have no competing interests. The present study was based on original research work. Authors PM and KR planned and executed the experiments and contributed to writing the manuscript. Authors PM and PB supervised and reviewed the research work.