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Environmental risk assessment of hospital wastewater in Federal Medical Center (FMC), Umuahia, Nigeria

Chioma Nwakanma and Obi O

Michael Okpara University of Agriculture, Nigeria

The study on environmental risk assessment of hospital wastewater at Federal Medical Center (FMC), Umuahia, Nigeria was carried. To this end, the microbial load and heavy metal analyses of the hospital wastewater were determined using established procedures. The wastewater samples were collected directly from the outlet of different wards (surgical, children and emergency wards), with pre-cleaned sterile and dried containers. The result show that they were significant varieties in the bacteria and fungi load of the hospital waste water from the different wards. The bacteria load was on the range of 192×10^7 cfu/ml to 275×10^7 cfu/ml (1.92×10^7 cfu/ml to 2.75×10^7 cfu/ml) while the fungi load ranged from 1.3×10^3 to 4.0×10^3 cfu/ml as shown in the result; the total aerobic viable bacteria count (TVC) was highest 275×10^7 in the wastewater for children ward and lowest, 192×10^7 in the wastewater from the surgery ward. The concentration of lead was in the range 0.02 mg/l to 0.09 mg/l while cadmium concentrations varies between 0.02 to 0.15 mg/l, chromium and copper were in the range of 0.00 to 0.03 and 0.07 to 0.2 mg/l respectively, while zinc was found to be between 0.07 to 0.09 mg/l and mercury was 0.02 mg/l. The result shows that the concentration of the different wards varied with significant from difference ($p < 0.05$). In general, the physicochemical properties of the hospital wastewater samples show that, their disposal into the environmental will impact significantly on the environment.

Biography

Chioma Nwakanma has completed her PhD from University of Port Harcourt, Nigeria. She is a Senior Lecturer in the College of Natural Resources and Environmental Management. She has published more than 55 papers in reputed journals and has Professional affiliations both local and international and has been serving as an Editorial Board Member of reputable journals.

dr.nwakanmac@gmail.com

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