

عنوان مقاله:

Isolation of microorganisms and screening of heavy metals from Municipal Council's treated sewage from Nakuru sewage treatment plant in Nakuru County, Kenya

محل انتشار:

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خلاصه مقاله:

Diarrhoeal cases due to taking of contaminated water are on the increase Nakuru County. They are a leading cause of human mortality and morbidity. The current study was aimed at isolating microorganisms from Municipal's council treated sewage and screening it for heavy metals followed by testing the efficacy of *Moringa stenopetala* in removing the heavy metals and treating the sewage against the microbial isolates. In addition, susceptibility test of the microbial isolates to antibiotics and *Moringa stenopetala* was also carried out. A total of 492 samples were collected out of which 46 % (226/492) were positive for all the microorganisms isolated and heavy metals. Standard methods were used in isolating microorganisms and screening of the sewage for heavy metals. Antimicrobial susceptibility test was carried out using Karby Bauer's disk diffusion test. The percentage reduction of heavy metals was Cadmium (97 %), nickel (97 %), lead (83.17 %) and Chromium (88 %) after treatment of the Municipal council's sewage with *Moringa stenopetala*. In addition, the microbial isolates reduced by 95.3 % after treatment with *Moringa stenopetala*. There was significant difference in both heavy metals ($p=0.036$) and microbial isolates ($p=0.02$) before and after treatment of Municipals council treated sewage with *Moringa stenopetala*. There was also a significant difference ($p=0.01$) in susceptibility patterns of the microorganisms against antibiotics and *Moringa stenopetala*. Treated municipal council's sewage is highly contaminated with microorganisms that can cause diseases in addition to having highly harmful heavy metals if ingested in food. There is need for proper sewage treatment in Nakuru town in addition to in cooperating *Moringa stenopetala* in sewage treatment in the town.

کلمات کلیدی:

, Antimicrobial; Heavy metals , Microorganisms , *Moringa stenopetala* , Nakuru , Treatment

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