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Health risk assessment of selected heavy metals in *Saccharomyces cerevisiae* biomass produced from Cassava mill effluents

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Cassava mill effluents are discharged into the environment in cassava producing country like Nigeria without proper treatment. It has adverse effects on the receiving ecosystem and the biota found in such environment. This study evaluated the potential health risk assessment of yeast biomass produced from cassava mill effluents. *Saccharomyces cerevisiae* (identified using cultural, morphological, and physiological/biochemical characteristics) was inoculated into sterile cassava mill effluents filtered with double muslin cloth. 10 ml of *S. cerevisiae* broth was inoculated into 100 ml of sterile cassava mill effluents. The medium was shaken intermittently between 7.00 to 19.00 time intervals. After 15 days of incubation at room temperature, the medium was decanted and subsequently filtered using Whatman filter paper. The results sludge/biomass was oven dried, digested and analyzed using flame atomic adsorption spectrometry alongside with commercial baker's yeast. Health risk was carried out by assessing the dietary intake, target hazard quotients and health index based on two scenarios viz: adult and children assuming that 7g and 5g of yeast are consumed through diets daily. Results showed *S. cerevisiae* biomass produced from cassava mill effluent have lower iron and zinc content and higher copper and manganese concentration when compared statistically at $P < 0.05$. While cadmium, cobalt, nickel, lead and chromium were not detected in both yeasts biomass. The target hazard quotient were < 1 except for copper for both children and adult indicating health concern in the consumption of yeast through food from cassava mill effluents. Therefore, analysis of other vital constituents such as cyanide, vitamins and amino acid could provide useful information of potential utilization of cassava mill effluents for *S. cerevisiae* biomass production

Biography

Sylvester Chibueze Izah is a PhD student supervised by Dr Sunday Etim Bassey and Prof Elijah Ige Ohimain at Niger Delta University, Wilberforce Island, Nigeria. He holds a Master of Science degree in Applied Microbiology (Distinction) from Niger Delta University. Between 2012 till date, he has an impressive research and publication record in the field of Applied Biology including Bioenergy, Toxicology, and Applied Microbiology, Risk Assessment, Environmental Microbiology and Pollution studies (i.e. water, air and soil). He has over a 100 publications in both international and national journals. Before now, his research interests are focused on Bioenergy and Environmental Biotechnology but currently his research is tending towards environmental/health risk assessment, toxicology, food microbiology and the conversion of food processing waste water into useful products while minimizing the attendant environmental effects

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