

Levels of Microcystin in the Coastal Waters of Nigeria

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Abstract : Blue-green otherwise called cyanobacteria, produce an array of biotoxins grouped into five categories notably hepatotoxins, neurotoxins, cytotoxins, dermatotoxins, and irritant toxins. Microcystins which are examples of hepatotoxins produced by blue-green algae Microcystins comprise the most common group of the cyanobacterial toxins. Blue-green algae flourish in aquatic environments, whether marine, brackish or freshwater, producing blooms in different forms such as microscopic, mats, or unsightly odoriferous scums. Microcystins biotoxins cause a plethora of animal and human hazards such as liver damage/cirrhosis and cancer, kidney damage, dermatitis, tinnitus, gastroenteritis, sore throat, nausea, myalgia, neurological problems, respiratory irritation and death. Water samples were collected from coastal regions of Nigeria in March 2014, June 2014, October 2014 and January 2015 and analyzed with Enzyme Linked Immunosorbent Assay (ELISA) kits. Microcystin biotoxin was recorded in all sites both during dry and wet seasons. The range of microcystins found was 0.000041- There was a seasonal trend of increasing microcystin concentrations from March till Octobers and a decrease thereafter. Generally in the oceanic waters, microcystin levels were highest at Cross Rivers in March and January, Barbeach in June and Lekki in October. In the adjoining riverine ecosystems, on the other hand, the highest concentrations of microcystin were observed at Akwa Ibom in March, June and October and in Bayelsa in January. Continuous monitoring and screening of coastal water bodies is suggested to minimize the health risks of cyanobacterial biotoxins to coastal communities of Nigeria.

Keywords : biotoxins, harmful algae, marine, microcystin, Nigeria

Conference Title : ICESE 2016 : International Conference on Environmental Sciences and Engineering

Conference Location : San Francisco, United States

Conference Dates : September 26-27, 2016