Determination of Algal Toxins (Domoic Acid & Okadaic Acid) Producers in Persian Gulf Waters from Hormozgan Province

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Abstract:

Hormozgan province possesses rich sources of aquatic resources from marine protein suppliers in Iran, and also faces a high rate of industrial development and urbanization. This process has led to the release of untreated or semi-refined wastewater into the marine environment which are effective in promoting the marine ecosystem to phytoplankton bloom, which in some cases releases ASP and DSP toxins. The toxins can enter the marine food chain, and, accordingly, aquatic consumers are also at risk of getting toxins from contaminated aquatic animals. In the present work, the aim was to determine the phytoplankton species producing the Okadaic acid and Domoic acid in coastal waters of Bandar Abbas city. Sampling was performed in summer 2016 and winter 2015from four stations facing the urban and industrial effluents, as well as the control area. During the winter time, Bacillaryophysis with 46 species, Dinophyceae with 18 species and Cyanophyceae were present with one species. Among the species belonging to Bacillaryophysis, species *Coscinodiscus wailesii* with 82% had the maximum frequency. But in summer period, Bacillaryophysis and Dinophyceae were with 23 and 13 species, respectively. Among the species belonging to Bacillaryophysis, the species with *Leptocylindrus danicus* percentage had a higher frequency than other species. The Dinoflagelles are made of *Protoperidinium quienqurium* with 98.9 percentage. Identified phytoplankton species have also contained species capable of producing algal toxins. These species include *Nitzschia punges and Pseudonitzschia delicatissima* in the production of toxin ASP and species Dinophysis *caudate* and *Prorocentrum lima* in the production of toxin DSP.