conferenceseries.com

Global Summit on ENVIRONMENTAL HEALTH

August 01, 2023 | Webinar

Influence of environmental factors on the occurrence and abundance of dinophysis in the coastal waters of Bangladesh

Nowrin Akter Shaika

Bangladesh Agricultural University, Bangladesh

There is a big concern about the proliferation of toxic dinoflagellate species that may be increasing in frequency and expanding their distribution under the climate change effect and anthropogenic activities in modern times. Most dinoflagellates have cyst-forming stages, which are in a dormant state until environmental factors, such as temperature, salinity and light intensity, favour their growth, resulting in abundant proliferation in a short period of time. Therefore, this study aims to provide key information about the harmful dinoflagellate Dinophysis occurrence and abundance in respect of dynamic environmental conditions of the Bay of Bengal, Bangladesh region. Accordingly, the study was conducted by collecting samples from 12 selected locations in the Bakkhali River Estuary, Maheshkhali Channel, Laboni Point and Deep-sea part of the Bay of Bengal. The abundance of dinoflagellates was dominated by several genera like Dinophysis, Ceratium, Prorocentrum, Protoperidinium, Noctiluca, Spatulodinium, Alexandrium, Gonyaulax, Cochlodinium, Karenia, Pyrophacus and Scrippsiella. Dinophysis caudata, D. mitra, D. homunculus were mostly encountered among Dinophysis genera. During the study period, Dinophysis was found in large quantities in April with a cell density of 52×103 cells/L in Bakkhali River Estuary and 65×103 cells/L in Maheshkhali Channel. Some environmental factors such as water temperature, salinity, dissolved oxygen, pH, nitrate-nitrogen (NO3-N) and phosphate-phosphorus (PO4-P) were monitored regularly at fixed intervals. These measured environmental factors that have impact on the abundance of Dinophysis were analyzed in this study. From the evidence, it was revealed that the occurrence and abundance of Dinophysis were comprehensively influenced by environmental factors of water bodies that may have deleterious effects on the coastal waters of Bangladesh.

Biography

Nowrin Akter Shaika is a Lecturer at the Department of Fisheries Management, Bangladesh Agricultural University in Bangladesh. She obtained her undergraduate degree in Fisheries Science (2020) from Bangladesh Agricultural University. She successfully completed her Master's degree from the Department of Fisheries Management in 2022 under the supervision of Professor Dr. Saleha Khan and Professor Dr. Md. Mahfuzul Haque. She got President Gold Medal Award – 2023 for her outstanding academic results and research work in Masters. The prestigious Fellowship of National Science and Technology (NST) –2021 validated her strong academic background and research work. Shaika worked as a Research Assistant in the Ministry of Education (MoE) funded research project for about 18 months that facilitated her research interest in microalgal culture. Her publications considered her research interest on live feed for aquaculture, marine HABs, eutrophication and climate change with a greater interest in the Blue Economy perspective.