

The Effect of Environmental Factors on the Abundance of Dinoflagellate Cysts in Sediments of the Southeastern Coast of Iran in Hot and Cold Seasons

Attaran Fariman, Gilan^{1*}; Loghmani, Mehran²; Mirkazehi Rigi, Aslam³

1- Associate Professor of Marine Biology, Faculty of Marine Sciences, Chabahar Maritime University, Chabahar, Iran. Email: gilanattaran@gmail.com

2- Assistant Professor in Marine biology, Faculty of Marine Science, Chabahar Maritime University, Chabahar, Iran. Email: loghmani_mehran@yahoo.co

3- MSc. Student in Marine Biology, Faculty of Marine Sciences, Chabahar Maritime University, Chabahar, Iran. Email: mirkazehia@gmail.com

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*Corresponding Author

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Abstract

Dinoflagellates are one of the main groups of phytoplankton and have two forms of autotrophic and heterotrophic in marine ecosystem. In this paper, the sediment samples were collected using Ekman Grab 225 cm². The cyst samples were identified and counted by invert microscope. Diversity and abundance of dinoflagellates cysts in recent sediments of the southern coast of Iran in winter and spring 2014 were studied. Totally, 25 species of dinoflagellate belonging to the 9 genera were identified. *Protoperidinium* (51.53%) and *Scrippsiella* (15.16%) had the highest abundance and *Zygabikodinium* (0.67%) had the lowest abundance. ANOVA results showed that dinoflagellate cysts abundance were significantly different among stations ($P>0.05$) and showed no significant difference between the two seasons ($P<0.05$). Physical and chemical characteristics of the sediment and water column were also measured. The result showed that the type of sediments and organic matters had a positive correlation. But other environmental factors such as temperature, salinity, pH and depth showed negative correlation. The Gwatar station with the smallest grain size (clay) and highest total of organic matter (5.24) had the highest frequency of the 510 cyst.10g. Also, values of diversity and richness of Gowater stations were 4.32 and 2.47 that were higher than other stations. In total, the results of this study showed that the diversity and abundance of dinoflagellate cysts were affected by the sediment type and the amount of organic matter.

Keywords: *Cysts, Dinoflagellates, Abundance, Sediment, Southern coast of Iran.*
