World Academy of Science, Engineering and Technology
International Journal of Biotechnology and Bioengineering
Vol:12, No:02, 2018

Distribution and Taxonomy of Marine Fungi in Nha Trang Bay and Van Phong Bay, Vietnam

Authors : Thu Thuy Pham, Thi Chau Loan Tran, Van Duy Nguyen

Abstract : Marine fungi play an important role in the marine ecosystems. Marine fungi also supply biomass and metabolic products of industrial value. Currently, the biodiversity of marine fungi along the coastal areas of Vietnam has not yet been studied fully. The objective of this study is to assess the spatial and temporal diversity of planktonic fungi from the coastal waters of Nha Trang Bay and Van Phong Bay in Central Vietnam using culture-dependent and independent approach. Using culture-dependent approach, filamentous fungi and yeasts were isolated on selective media and then classified by phenotype and genotype based on the sequencing of ITS (internal transcribed spacers) regions of rDNA with two primer pairs (ITS1F_KYO2 and ITS4; NS1 and NS8). Using culture-independent approach, environmental DNA samples were isolated and amplified using fungal-specific ITS primer pairs. A total of over 160 strains were isolated from 10 seawater sampling stations at 50 cm depth. They were classified into diverse genera and species of both yeast and mold. At least 5 strains could be potentially novel species. Our results also revealed that planktonic fungi were molecularly diverse with hundreds of phylotypes recovered across these two bays. The results of the study provide data about the distribution and taxonomy of mycoplankton in this area, thereby allowing assessment of their positive role in the biogeochemical cycle of coastal ecosystems and the development of new bioactive compounds for industrial applications.

Keywords : biodiversity, ITS, marine fungi, Nha Trang Bay, Van Phong Bay
Conference Title : ICBB 2018 : International Conference on Biotechnology and Bioengineering
Conference Location : London, United Kingdom
Conference Dates : February 15-16, 2018