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**【Online International Diatom Symposium 2021】 Confirmation of Your Abstract Submission.**

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17 luglio 2021 12:37

A: destefanomario36@gmail.com

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**【Abstract Submission】**

Submission Number:

32

Title:

Biodiversity of epiphytic diatom community on seagrasses and corals from Saudi Arabian coasts of the Arabian Gulf: a taxonomical, ecological and environmental approach

Abstract Body:

The microphytobenthic community significantly contributes to primary production in shallow waters, mainly along continental shelves where it can reach values exceeding phytoplankton biomass in the overlying water column. Diatom communities are among the dominant components in the microphytobenthos and their species composition is strongly

influenced by the nature of substrate and by their biogeographic distribution. On the other hand, these communities appear to be composed by a limited number of genera, belonging to different growth forms that can be considered fully adapted to the epibenthic lifestyle. In spite of the important ecological role played in the food chain, the biodiversity of diatom communities on seagrasses and seaweeds is still poorly studied and highly underestimated while that on corals results virtually neglected as in the literature there are only two studies on this topic.

Our study aimed to decrypt and document for the first time the hidden biodiversity of diatoms associated to seagrasses and hard corals along the Saudi coasts of Arabian Gulf. The diatom assemblages have been identified exclusively by electron microscopy so that their community structure has been analyzed in depth and the diversity have been documented at genus/species level.

Preliminary results demonstrated that both seagrasses and corals collected along the Saudi Arabian coasts hosted benthic diatom communities, which in both the case constituted the major element of their epibenthic microalgal flora. Significant differences in terms of cell density, species composition and community structure were observed between the diatom communities of seagrasses and corals and within the different sampling locations analyzed. More in detail, cell densities of seagrass diatom communities resulted more than one hundred times higher than those of corals with mean values approximately of 6000-7000 cell/mm<sup>2</sup> in the former vs 100-300 cell/mm<sup>2</sup> in the latter. Noteworthy is that the species composition of seagrasses diatom communities was characterized by the almost full dominance of adnate genus *Cocconeis* (represented by four species) exhibiting cell densities mean values more than one hundred times higher than those of all the other diatom genera present in the communities. The cell density values showed by *Cocconeis* communities epiphytic on Saudi Arabian gulf seagrasses analyzed in the present study are up to my knowledge the higher registered in any other environment and host organism studied, comparable only to some peculiar monospecific communities found on Antarctic macroalgae. Undoubtedly, the particularly challenging environmental conditions occurring in the different sampling stations selected along the Saudi coastal areas of Arabian Gulf could be responsible of some specific changes in the abundances and species composition observed in the diatom communities of seagrasses.

#### Keywords:

1. [Recent/extant diatoms] Biogeography ( [Recent/extant diatoms] - Biogeography )
2. [Recent/extant diatoms] Environmental Monitoring and DNA barcoding ( [Recent/extant diatoms] - Environmental Monitoring and DNA barcoding )
3. [Recent/extant diatoms] Taxonomy and Morphology ( [Recent/extant diatoms] - Taxonomy and Morphology )

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