Free-living marine nematodes community structure in the conservation area (Chaojing Park) and its adjacent area of Keelung, Taiwan

ABSTRACT

Studies conducted in the same seas or even study sites nearby each other, showed very different community structure, implying the patchiness of free-living marine nematodes which may be related to the sedimentary environment such as sediment type and food availability of the study area. This study was motivated by the concerns about the impacts of high level of anthropogenic activities on Chaojing Park (gazetted as Wanghaixiang's Chao-Jing Bay Resource Conservation Area (WCJBRA) in 2016). The present study provides baseline knowledge of free-living marine nematode community structure in WCJBRA and identify potential marine nematodes as bioindicators to indicate possible impacts of the anthropogenic activities to the Chaojing Park. A total of 15 stations were selected in the subtidal zones of WCJBRA and its adjacent area. Marine nematode sample collection was carried out on the 13th and 14th of September 2019 using SCUBA diving technique. Results showed positive correlation between nematode density and medium sand (500μm-1.0mm). Presence of certain species such as Daptonema sp., Pomponema sp. and Innocuonema sp. indicates presence of disturbances in S12 and S13. Several species also showed potential to be introduced as indicator for healthy environment subjected to further studies on nematode-pollutants relationship, particularly on autecology as per se. Higher species diversity, H' index of S1-S8 and S11 was categorised as Good Condition; followed by station with moderate species diversity index (S9, S10, S14 –Moderate Condition) zone; and lastly S12, S13 and S15 (Poor Condition).