

Microplastics abundance in sea cucumber *Holothuria scabra* from Pulau Malawali, Sabah, Malaysia

ABSTRACT

The growing amount of plastic waste in the environment is a result of the increased use of plastics in numerous areas of our daily lives. These plastics are broken down into microplastics (MPs), which are 5 mm or smaller in size. Sea cucumbers are consumed as an exotic delicacy worldwide, however, it is suspected that they could ingest the microplastics due to their nature as filter feeder. In this study, we have identified the MPs presence in the intestines of sea cucumber *Holothuria scabra*. A total of 30 sea cucumber *H. scabra* were collected during low tide at a muddy sandy area at Pulau Malawali using bare hands. The gastrointestinal tracts of *H. scabra* were removed and digested in NaOH. MPs were identified using light microscope and categorized into shapes and colours. Micro-Fourier Transform-Infrared Spectroscopy (μ FTIR) analysis was carried out to identify the types of polymers. The majority colours of MPs were black (69.84%) and blue (18.65%). Fibres (98.38%) made up the majority of MPs followed by fragments (1.37%) and films (0.25%). Ethylene Vinyl Acetate (EVA), Melamine-Formaldehyde (MF) and Rayon were among the polymers identified. In conclusion, MPs were found in the intestines of the sea cucumber *H. scabra* and this could be from the ingestion of polluted sea bed. The importance of studying the presence of these MPs in sea cucumber allows us to assess the impact of plastic pollution on marine animals and ecosystems and understand the potential risks to both sea cucumber and human as consumers.