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Diversity and Taxonomy: Malaysian Marine Algae Genus Halimeda (Halimedaceae, Chlorophyta)

Authors : Nur Farah Ain Zainee, Ahmad Ismail, Nazlina Ibrahim, Asmida Ismail

Abstract : The study of genus Halimeda in Malaysia is in the early stage due to less specific study on its taxonomy. Most of the previous research tend to choose other genus such as Caulerpa and Gracilaria because of the potential of being utilized. The identification of Halimeda is complex by the high morphological variation within individual species due to different types of habitat and the changes in composition of seawater. The study was completed to study the diversity and distribution of Halimeda in Malaysia and to identify the morphological and anatomical differences between Halimeda species. The methods which have been used for this study are collection of Halimeda and seawater, preservation of specimen, identification of the specimen including the preparation of the temporary slide and decalcification of the calcium layer by using diluted hydrochloric acid. The specimen were processed in laboratory and kept as herbarium specimen in Algae Herbarium, Universiti Kebangsaan Malaysia. Environmental parameters were tested by using YSI multiparameter probe and the recorded data were temperature, salinity, pH and dissolved oxygen. The nutrient content of seawater such as nitrate and phosphate were analysed by using Hach kit model DR 2000. In the present study, out of 330 herbarium specimen, ten species were identified as Halimeda cuneata, H. discoidea, H. macroloba, H. macrophysa, H. opuntia, H. simulans, H. stuposa, H. taenicola, H. tuna and H. velasquezii. Of these, five species were new record to Malaysia. They are Halimeda cuneata, H. macrophysa, H. stuposa, H. taenicola and H. velasquezii. H. opuntia was found as the most abundance species with wide distribution in Malaysia coastal area. Meanwhile, from the study of their distribution, two localities in which Pulau Balak Balak, Kudat and Pulau Langkawi, Kedah, were noted having high number of Halimeda species. As a conclusion, this study has successfully identified ten species of Halimeda of Malaysia with full description of morphological characteristics that may assist further researcher to differentiate and identify Halimeda.

Keywords : Distribution, diversity, Halimeda, morphological, taxonomy
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