Morphological characteristics, shoot density and biomass variability of Halophila sp. in a coastal lagoon of the east coast of Malaysia.

ABSTRACT

This study in a coastal lagoon of Merchang Terengganu, east coast of Peninsular Malaysia evaluated the morphological characteristics, shoot density and biomass for Halophila in pure and mixed population with Halodule pinifolia (Miki) den Hartog. Both species inhabited the silt and sand substrates at depth of about 1.9 m to 2.0 m. They are well adapted and tolerated a range of micro-ecology; pH of 6.57–7.32, wide salinity differences of 9.42–34.47 psu, conductivity 16.14–52.27 ms/cm, and light availability of 446.63–624.1 lux. Morphologically, there are two forms for Halophila (a) small-leaved in pure population and those mixed with the short-leaved, (b) big-leaved with the long-leaved Halodule pinifolia. Both forms have variable leaf shapes, a respond to the wide and frequent fluctuation in water salinity. Leaves possessed red or purplish spots or blotches with more spots and blotches in leaves of Halophila in pure population. Shoot density of 79.08 38.02 shoots/100cm2; is comparatively higher in pure Halophila population compared with 26.33 13.20 shoots/100cm2 and 64.00 17.09 shoots/100cm2 for small-leaved and big-leaved Halophila sp. respectively. Halophila biomass (AG and BG) exhibit similar trend as those observed for shoot density. In pure or mixed Halophila population the majority of the biomasses (63–77% of the total) were in the belowground parts (rhizome and roots). Although Halophila sp. is a smaller size seagrass, for propagation they would need extensive rhizome networks buried in the substrates.

Keyword: Seagrass; Halophila; Morphology; Shoot density; Biomass; Malaysia