

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 \pm 38.02 shoots/100cm²; is comparatively higher in pure *Halophila* population compared with 26.33 \pm 13.20 shoots/100cm² and 64.00 \pm 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