

Morphology and Genetic Studies of *Cymodocea* Seagrass Genus in Tunisian Coasts

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Abstract: Specimens of *Cymodocea* (Viridiplantae, Magnoliophyta) collected on the Tunisian coasts showed a particular morphological and anatomical difference with the classical descriptions of *Cymodocea nodosa* (Ucria) Asch. the only species of this genus reported in the Mediterranean Sea. In order to precise the taxonomic identity of the new specimens we aimed in this work (i) to verify the identity of the new forms, (ii) to evaluate the genetic diversity of the population, (iii) to test the validity of the existing identification keys of the Tunisian *Cymodocea* populations. Four stations located in two regions of the Tunisian coasts were sampled. Leaf morphological and anatomical characters used in taxonomic identification were measured (e.g., number of cross veins, shape of the apex). The genetic study was performed using three most common chloroplast markers for plant characterization (DNA barcodes *rbcL*, *matK* and *trnHpsbA*). The morphological study revealed the presence of three *C. nodosa* morphotypes, described here for the first time, while the molecular characterization did not allow the discrimination of these morphological types. In regard to these results, it would be wise to review the classical identification keys of the *Cymodocea* genus.

Keywords: *Cymodocea*; DNA barcoding; morphology; mediterranean; taxonomy