

SPECIES DELINEATION IN DICTYOTA, A COMBINED MOLECULAR AND MORPHOMETRIC APPROACH

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Delineating species based on morphology remains problematic in numerous marine macroalgae due to a low degree of external dissimilarity among the species and at least in some groups a high morphological plasticity. The brown algal genus *Dictyota* represents a prime example to address species delineation in marine macroalgae, since exclusive diagnostic characters do not exist for the majority of the species. Diagnostic descriptions, therefore, consist of a circumscription of the gross morphology followed by a series of continuous numerical characters relating anatomical features (sizes and dimensions of cells) and reproductive characters (spores size). Our study aims to evaluate the suitability of multivariate methods based on morphometric data for species delimitation and to detect which morphological variables contribute most to the discrimination of species in this genus. Results based on a combination of morphometrics and molecular analyses have allowed us to recognise cryptic species from the Canary Islands. The morphometric analysis of a large amount of variables demonstrates that *Dictyota* species have a high degree of intraspecific morphological variation. Analyses of similarity (ANOSIM) confirm the existence of significantly different groups of individuals, observed in the n-MDS ordination. SIMPER analysis reveals that specimens differ most in anatomical characters. Morphometric data fit in properly with molecular results. Morphometrics turns out to be a decisive tool to help bringing an objective approach together with molecular evidences to solve taxonomic problems on genera with such morphological variation.

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