



DNA barcoding for species identification in the Palmae family

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ABSTRACT. DNA barcoding is a promising tool for species identification at the molecular level. The barcoding system is well established for species differentiation in animals, while it is less common in plants. We evaluated 2 barcoding regions, maturase K (*matK*) and ribulose biphosphate carboxylase (*rbcL*), to compare species of Palmae according to amplification success, discrimination power, and inter- and intra-specific divergence. Both regions appear to have potential to discriminate most species of Palmae, but 2 species, *Phoenix dactylifera* and *Phoenix sylvestris*, did not show variation in the nucleotides of the barcode genes. *P. sylvestris* is said to be the sister species of *P. dactylifera* according to its morphological and genetic proximity to the cultivated date palm. Thus, the status of these 2 species needs to be re-evaluated considering more genes as barcodes. Furthermore, *rbcL* has a higher discrimination power (90%) than *matK* (66.6%) and can thus be potentially used as a standard barcode to discriminate the species of Palmae.

Key words: Date palm; Ribulose biphosphate carboxylase (*rbcL*); Maturase K (*matK*); Sequencing; Cloning; Taxonomy