

# Diversity and conservation of African plants: challenges and opportunities



**22nd AETFAT Congress Abstracts**  
27th of June - 1st of July 2022, Livingstone, Zambia

Edited by:

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**Keywords:** Cyperaceae, Morphometrics, Species complex, Taxonomy

**COMBINED ANALYSIS OF MORPHOLOGICAL AND GENETIC MARKERS REVEALS SIX SPECIES IN THE WIDESPREAD TAXON *KHAYA ANTHOTHECA* (WELW.) C.DC (MELIACEAE)**

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The combination of genetic and morphological markers has been shown to be highly efficient in delineating cryptic species or complexes of poorly differentiated species. Speciation is not always accompanied by sufficient divergence in morphological characteristics to enable clear separation of species. Sometimes, what is considered a single species on morphological grounds is likely to contain a complex of biological species. This is the case of *Khaya anthotheca*, one of the African mahoganies of the family Meliaceae. Due to its morphological variability, the delimitation of this taxon varies according to different authors. By combining a morphological study of herbarium specimens with the genotyping of hundreds of samples using nuclear genetic markers (SNPs), we propose an assessment of the taxonomic limits of *K. anthotheca*. Nuclear SNPs allowed us to distinguish six different genetic groups. Four of these five groups have parapatric distributions and two of them are locally sympatric. Recognition of these genetic groups was reinforced by a fine analysis of morphological characters, so that they should be considered as separate species. The majority of these species recognized by all these analyses correspond in fact to species previously described but put in synonymy within *K. anthotheca*. However, two species are described for the first time. These results are particularly important given the pressure of logging on African mahoganies, as some of these groups may correspond to cryptic species that could be threatened by overexploitation.

**Keywords:** African mahoganies, *Khaya*, Species delimitation, Genetics, Morphology