

## ELUCIDATING THE Manihot carthagenensis SPECIES COMPLEX

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Manihot Mill. (Euphorbiaceae) is a Neotropical genus with 98 species recognized to date. Manihot carthagenensis is a very polymorphic species, thus detaining several synonyms. Currently, morphological criteria associated with geographic distribution distinguish three infraspecific taxa within the species carthagenensis subsp. carthagenensis, M. complex: M. carthagenensis subsp. glaziovii, and M. carthagenensis subsp. hahnii. Herein, we assembled multilocus sequence data and used Bayesian phylogenetic analyses to resolve this species complex further. Four nuclear loci (g3pdh, metE, nia-i3, and sts) were amplified and sequenced from a total of 48 specimens, which represented the M. carthagenensis complex and additional ten congeners. Molecular data did not support the monophyly of the M. carthagenensis complex as presently circumscribed. Manihot carthagenensis subsp. hahnii was distantly related to the remaining member of the complex. The other specimens comprised a monophyletic clade, which split further into three subclades. Two of those subclades were indistinguishable from each other based on morphology alone; we refrained from attributing them distinct taxonomic placements. In contrast, the third subclade was genetically and morphologically distinct; it corresponded to the specie M. glaziovii. Therefore, this study re-described two species (M. carthagenensis and M. glaziovii) and proposed a new combination (M. hahnii comb. nov.).

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