



## Two new wild cassava species (*Manihot*, Euphorbiaceae) from the Brazilian Cerrado

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### Abstract

*Manihot luxurians* and *M. confertiflora* are herein described and illustrated. Both species were collected in the Chapada dos Veadeiros region during a taxonomic study of the genus *Manihot* in the Cerrado Biome. The morphological affinities, habitat, distribution, conservation status of both species are also provided.

**Key words:** Diversity, endemism, Manihotae

### Introduction

The Euphorbiaceae are one of the most important families of the Brazilian flora, encompassing 927 species and 64 genera (Cordeiro *et al.* 2014). Nevertheless, the knowledge of their taxonomy is still scarce (Secco *et al.* 2012), probably due to the morphological diversity and floral complexity of these taxa.

In the Brazilian Cerrado, a biome with rich diversity (over 11,000 plant species) but one of the most devastated areas in Brazil, the family Euphorbiaceae is represented by 23 genera and 340 species (Cordeiro *et al.* 2014). In spite of this richness, the knowledge of this family in Brazil is based mainly on the *Flora Brasiliensis* (Müller Argoviensis 1873), demonstrating that new studies of this family are needed.

Among the taxa of Euphorbiaceae present in the Brazilian Cerrado, especially in the state of Goiás, *Manihot* Miller (1754) stands out. Although this genus is Neotropical, its main center of diversity is located in Brazil, where over 80 species (Silva 2014) are distributed mainly in the Caatinga (15 spp.), Amazon (15 spp.), and Cerrado (50 spp.) biomes (Duputié *et al.* 2011, Silva & Sodr e 2014). Still, the taxonomy of *Manihot* is poorly known in this country (Secco *et al.* 2012), especially in the mountainous areas of the northern part of the state of Goiás, such as the Chapada dos Veadeiros, Complexo Serra da Mesa, and Terras Altas do Tocantins, where new species have been discovered recently (Silva *et al.* 2013, Silva 2014, Silva & Sodr e 2014).

During the taxonomic studies of *Manihot* in the Midwest Region of Brazil, two new species were discovered in the Chapada dos Veadeiros, an area comprising a mountain range interspersed with plateaus. The flora in this region shows a great diversity (2,661 spp.) and is composed of numerous endemic, rare, or little known plant species (Munhoz & Proen a 1998, Mendon a *et al.* 2007). These new species (*M. confertiflora* and *M. luxurians*) are herein described, illustrated, and their morphological affinities, habitat, and distribution, as well as their conservation status are also provided.

### Material and Methods

The species were described based on their morphological variations observed in the field and in the collection of the herbarium CEN and UFG [acronyms follow Thiers (2014, continuously updated)]. The voucher specimens collected in the Chapada dos Veadeiros, including the holotype, are deposited in the herbarium UFG, and the isotypes are going to be sent to the herbaria K, NY, P and UB. Photographs were taken in the field and illustrations were made based on the holotype. The conservation status of the species follows IUCN (2014). The terminology used to designate inflorescence types follows Rogers & Appan (1973).