

Phylogenetic positions of three *Amorphophallus* species natively growing in the Meratus Mountains, South Kalimantan, Indonesia

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Abstract. Mursyidin DH, Hernanda MA. 2021. *Phylogenetic positions of three Amorphophallus species natively growing in the Meratus Mountains, South Kalimantan, Indonesia. Biodiversitas 22: 2821-2828.* Information on genetic diversity and relationships (phylogenetic position) of germplasm is essential for conservation and breeding programs in the future. Here, we focused on determining the genetic diversity and phylogenetic positions of three native *Amorphophallus* species from the Meratus Mountains, South Kalimantan, Indonesia, using the *rbcL* marker. The results show that this germplasm has a medium level of genetic diversity (0.63). The phylogenetic analyses (NJ, ML, and MP) revealed that *Amorphophallus* from the region has a unique or specific relationship position. In this case, *A. muelleri* with an accession number of MT818204 and MT818205 are grouping and have close relatedness with *A. muelleri* previously deposited in GenBank (AF497087.1). Three samples of *A. paeoniifolius* (MT818202, MT818203, and MT818206) have also clustered with the same species (DQ012500.1; AF497091.1). An interesting result was shown by *A. borneensis* (MT818211) that demonstrated a close relationship with *A. tinekeae* (DQ012505.1) in NJ and ML analyses, not with a similar species (DQ012484.1) in MP analysis. Further, a bootstrap analysis on an earlier analysis supported the separation. Thus, this information is valuable in supporting the conservation and breeding programs of this germplasm, both locally and globally.

Keywords: Conservation, Genetic diversity, Phylogeny, Plant breeding, Wild species.

Abbreviations: NJ: Neighbor Joining; ML: Maximum Likelihood; MP: Maximum Parsimony.