

Title: Arbuscular Mycorrhizal Fungi (AMF) abundance and seasonality distribution in *Acrocomia aculeata* (Jacq.) Lodd. Ex Mart. Groupings in the North of Minas Gerais.

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The arbuscular mycorrhizal fungi (AMF) are required symbiotic organisms that colonize about 90% of vascular plants. This interaction contributes to the mineral nutrition of plants, and promote growth, tolerance and resistance to plants affected by environmental stresses. Given the importance of this interaction for plant nutrition and the interest in species with potential for biofuel production, it is relevant to know the diversity of AMF associated with the rhizosphere of *Acrocomia aculeata* (Macaúba). Thus, the aim of this study was to analyze diversity of AMF in relation to seasonal and soil factors in clusters of *A. aculeata* in Montes Claros and Santa Cruz, north of Minas Gerais, in the rainy and dry seasons. Soil samples were collected during the dry season (September 2012) and rainy (February 2013) in the depth 0-20 cm. Ten composite samples were collected from three individuals nearest. 50g of each soil sample was subjected to the extraction process, by wet sieving, washed with water and centrifuged in sucrose gradient, supernatant for identification of glomerospores watching taxonomic characters and about the reaction in Melzer. Generalized Linear Models (GLM) were built to analyze if the richness and abundance of AMF vary between Macaúba groupings in Montes Claros and Santa Cruz and between seasonality, that was not significant (> 0.05). A total of 4.090 AMF glomerospores were counted, 1.981 were sampled in Macaúba grouping of Montes Claros, with 910 in the dry season and 1.071 during the rainy season, and 2.109 were sampled in the grouping of Santa Cruz, 1.151 were from dry season and 958 of the rainy season. These efforts identified 13 genera, *Acaulospora*, *Ambispora*, *Cetraspora*, *Dentiscutata*, *Diversispora*, *Entrophospora*, *Gigaspora*, *Glomus*, *Intraspora*, *Pacispora*, *Paraglomus*, *Scutellospora* and *Racocetra*. The *Acaulospora* and *Glomus* were the most abundant in both groups and were present in different seasons, which corroborates with that reported in the literature, which predicts that are predominantly more adapted to environmental disturbances. The dominance of the families Acaulosporaceae and Glomeraceae in most environments denotes that these families have higher adaptive capacity in soils under different management, what was observed in this work, which features several species belonging to these two genres as a key species in mycorrhizal fungal communities associated with the Macaúba rhizosphere soil in the sampled areas.

Palavras-chaves: AMF, glomerospores, rhizosphere, *Acrocomia aculeata*, abundance.

Agência de fomento: FAPEMIG, PFRH Petrobrás, Petrobrás