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**LIBRO DE RESÚMENES**





## MI403

### Diversity of endophytic fungi from guarana seeds (*Paullinia cupana*) cultivated in Amazonia, Brazil

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Endophytic fungi are a potential source of important bioactive natural products. The analysis of the diversity of these microorganisms contributes to the delineation of the endophytic communities of host plants, helps in the discovery of new species of fungi and new bioactive compounds. The aim of this study was to analyze the diversity of endophytic fungi of guarana seeds. The seeds were extracted from healthy fruits of guaraná (*Paullinia cupana*), from the cultivars resistant (BRS-871) and susceptible (BRS-300) to anthracnose, were collected in the experimental fields of EMBRAPA Amazônia Ocidental located at the municipalities of Manaus and Maués (Amazonas, Brazil). The fungi were isolated, purified and identified by morphology and molecular biology technique based on the ITS1 and ITS4 regions. The calculated diversity analyzes were the Shannon-Wiener ( $H$ ), Simpson dominance ( $D$ ) and Margalef diversity indexes ( $Dmg$ ). Seventy-two endophytic fungi were isolated from guarana seeds, which were separated into different morphotypes. Classical morphology together with molecular biology results led to 40 endophytic fungi isolated from guarana seeds resulted in the identification of 11 genera, the most frequent being: *Clonostachys* sp. and *Fusarium* sp. and the others distributed in the species: *Aspergillus flavus*, *Clonostachys rosea*, *Cladosporium halotolerans*, *Colletotrichum gloeosporioides*, *Fusarium concolor*, *F. polyphialidicum*, *F. decemcellulare*, *Lentinus swartzii*, *Pestalotiopsis microspore*, *Simplicillium lanosoniveum* and *Talaromyces amestolkiae*. Four endophytic fungi were identified only at the order level, inserted in the Agaricales and Polyporales orders. Nine isolates were not identified at the species level, inserted in the genus *Bionectria* sp., *Fusarium* sp. and *Phomopsis* sp. The analyzes resulted in 0.10 of  $D$  influenced by the most abundant species of the community,  $Dmg$  of 3.75 indicating diversity of endophytic fungi, and  $H$  of 2.45 which expresses species heterogeneity. In this way, guarana seeds are colonized by a highly diverse and heterogeneous community of endophytic fungi. The endophytic community originated from BRS-300 is more diverse, where all 10 fungal species belong to the phylum Ascomycota. In the endophytic community from BRS-871, the endophytes were distributed 50% in the phylum Ascomycota and 50% in the Basidiomycota, and added 4 species, thus demonstrating less diversity in this group.

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