

Taxonomic analysis of fungal microbiota from soils of *Coffea canephora*

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Plants establish various interactions with fungal communities in their rhizosphere, which plays vital roles in their development. The quality of a coffee plant is related to environmental factors and also to the edaphic microbiota present in the plantations, and studies on coffee plant development have shown that symbiotic activities between the plant and fungi positively contribute to its performance. However, research related to the identification and abundance of fungal diversity in the soil of *Coffea canephora* plantations is still limited. Therefore, the aim of this study was to characterize the fungal community present in the soil of *C. canephora* plantations. To analyze the fungal community profile, DNA amplification reactions were conducted using the polymerase chain reaction (PCR) technique to amplify the fungal ITS1 region. Then, the sequencing of the ITS1 libraries were carried out using the Illumina NovaSeq 6000 platform. A total of 3.067.695 sequences from the ITS1 region were obtained after excluding low-quality sequences and contaminants. Taxonomic assessment revealed that the phylum Ascomycota was the most abundant in the fungal microbiota present in the coffee plantation soil. The phylum Ascomycota is known for its diversity and widespread distribution and exhibit a variety of varied forms and structures. These fungi play important roles in agricultural soil, such as organic matter decomposition and nutrient cycling. In terms of genera, *Trichoderma* stood out; however, there was notable variation in the diversity of other genera. This genus belongs to a diverse group of filamentous fungi, which are significant in agriculture and ecology due to their critical role in biocontrol of plant diseases and promotion of crop growth. Widely distributed in soil and environment, these fungi represent a valuable resource for sustainable agricultural practices, enabling a reduction in dependence on chemical pesticides and the promotion of more ecological methods. However, there is a scarcity of studies that address the relationship between microorganisms and the development of conilon coffee plant and fruit, including the impact on beverage quality. Exploring the variety of fungi in the soil where *C. canephora* is cultivated can provide insights into how the activity of these microorganisms may influence the plant and, consequently, the quality of the final product.

Palavras-chave: Café conilon; Microrganismos; fungos.

Análise taxonômica da microbiota fúngica em solos de *Coffea canephora*

A qualidade do café está relacionada à microbiota no solo e simbiose com fungos. No entanto, a diversidade destes microrganismos presentes no solo do cafeeiro é pouco explorada. O objetivo deste estudo foi caracterizar a comunidade fúngica no solo de *C. canephora*. Utilizando PCR e sequenciamento de ITS, analisaram-se 3.067.695 sequências. O filo Ascomycota foi predominante na microbiota fúngica do solo do cafeeiro. Este filo é conhecido pela diversidade e importância na agricultura. O gênero *Trichoderma* destacou-se, indicando relevância no biocontrole e crescimento das culturas. É importante compreender essas interações para a sustentabilidade agrícola e a qualidade do café.

Key words: Conilon coffee; Microorganisms; Fungos.

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