TITLE: ENDOPHYTIC FUNGI ASSOCIATED WITH *Araucaria angustifolia* (Bert.) O. Ktze

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ABSTRACT:
Araucaria angustifolia, one of the few native gymnosperms from southern Brazil, is a critically endangered species of the Araucaria Forest, Atlantic Forest biome. This species is considered at risk of extinction due to its previous exploration and decimatizon, mainly for its valuable wood. Although *A. angustifolia* nowadays occupies only a very restricted area of the state of Paraná, this ecosystem exhibits high biodiversity of plants, animals, and microorganisms. However, studies with endophytic fungi related to *A. angustifolia* are scarce. In this study, specimens of *A. angustifolia* from a native forest fragment in Guarapuava-PR were studied to determine the populations of endophytic fungi. The branches of the *A. angustifolia* were superficially sterilized and inoculated in Sabouraud Agar (BDA) at 28 ºC to isolate the endophytes. An isolate of each morphotype was selected and the ITS region of the rDNA gene was sequenciated. In total, 61 endophytic fungi morphotypes were isolated from 90 branches of five individuals of *A. angustifolia*. Of these, only 37 strains could be identified at the species level by this molecular marker. All strains belong to the phylum Ascomycota and the genera *Annulohypoxylon*, *Aspergillus*, *Colletotrichum*, *Coniochaeta*, *Diaphorte*, *Fimetariella*, *Fusarium*, *Hypoxylon*, *Mycoleptodiscus*, *Muyocopron*, *Neofusicoccum*, *Neopestalotiopsis*, *Pestalotiopsis*, *Phyllosticta*, *Phomopsis*, *Preussia*, *Trichoderma*, and *Xylaria*. Fungi of the class Sordariomycetes and the genus *Xylaria* comprised the largest number of species. Some isolates showed low identity in the ITS sequences to those of fungal species deposited in GenBank, suggesting that these fungi could be new species. Our results show that *A. angustifolia* is a promising source of diversity of endophytic fungi, which can be explored for biotechnological purposes.

Keywords: Araucaria forest, endophytes, fungal diversity

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