

Título: Distribution of P450 monooxygenase genes isolated from endophytic fungi in different stages of the phenological cycle of *Cavanillesia arborea* and *Goniorrhachis marginata* in Tropical Dry Forest

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Resumo:

The endophytic microorganisms are those able to colonize plant tissues without causing apparent injuries. Some endophytic fungi have the ability to produce plant hormones such as abscisic acid (ABA) and this is possibly due to the interaction of these microorganisms and their hosts. The ABA is involved in plant development and responses to abiotic stresses such as drought, salinity and cold stress. The aims of this study were to verify the occurrence of genes encoding P450 monooxygenase enzyme in fungal isolates and compare the distribution of these endophytes in tree species *Cavanillesia arborea* K. Schum. and *Goniorrhachis marginata* Taub. in leafiness period, and in the run-leaf drop. For this research was carried out DNA extraction, by scraping each colony of fungi grown on PDA. For amplification of the sequence encoding the enzyme cytochrome P450 monooxygenase, primers used were (ABAF: 5'-ATCACCCTCGCGGATCTGCG-3' and ABAR: 3'-CATAATATGGATTGAGTCGACCGG-5') and *Botrytis cinerea* CCT1252 DNA sample as positive sample. The PCR mixture consisted of 50 ng of DNA, *Taq* DNA polymerase, buffer and 0.1 mM dNTPs and 1 mM each primers. The gene was amplified perform an initial denaturation at 94 °C for 4 min, followed by 35 cycles at 94 °C for 1 min, 48 °C for 1 min and 72 °C for 1 min, with a final extension at 72 °C for 3 min. The endophytes species which revealed carry the marker involved in ABA biosynthesis were *Mycosphaerella laricina* in leafiness period, and *Fusarium subglutinans* in leaf fall period, and in both sampling colonized only *C. arborea*. Were isolated *Scopulariopsis gracilis* and *Mycosphaerella pini* in periods of leafiness and leaf fall, respectively, from *G. marginata*, and these taxa, in general, they have not been characterized in the literature as producers of this hormone. ABA production by some of the fungi isolated from two tree species is justified by the endophyte's ability to produce typically endogenous metabolites and characteristic of its host. Furthermore, the presence of ABA in plant tissues may influence susceptibility to infection by fungi and some fungi begin to produce ABA or the plant is stimulated by the fungus to produce ABA to occur locking / repression of their metabolic systemic defenses.

Palavras-chaves: Endophytic fungi, abscisic acid, Dry forest

Agência Fomento: Fapemig