

TITLE: ISOLATION AND IDENTIFICATION OF ENDOFITIC BIOACTIVES WITH BIOTECHNOLOGICAL POTENTIAL.

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ABSTRACT:

The biochemical relationship between endophytic fungi and their host is not yet fully understood. Ongoing researches about the activity of endophytic fungi expect their use as alternative sources innovative bioactive compounds production. The objective of this work was activity evaluation of endophytic fungi isolated from the leaves of a sapotacea in restinga vegetation. The fungi *Phyllosticta capitalensis*, *Xylaria feejeensis*, *Sclero stogonospora sp*, *Pestalotiopsis sp* and *Purpureocillium lilacinum* were isolated on Sabouraud agar and identified by molecular methods through ITS region sequencing. In vitro activity was analyzed using antagonistic fungi extracts, cultured in 200mL of PDA, pH 5.7 and incubated at 28°C in orbital shaker at 120 rpm for 15 days. After fermentation, fungal culture were filtered and the broth without cells was partitioned with 1:1 ethyl acetate (solvent:filtrate). Evaluation of that antagonistic activity were performed on 6mm paper disks moistened with 10µL of the fungal extract tested against Gram negative bacteria (*Escherichia coli*, *Salmonella sp.*), against Gram positive bacteria (*Staphylococcus sp.*, *Enterococcus sp.*, *Corynebacterium sp.* VD57 and 1002, both isolated from goats) and, against a yeast (*Candida albicans*). The fungus *Pestalotiopsis sp* extract inhibited the growth of two strains of *Corynebacterium* with halos 12mm and 26mm. Fungus *Xylaria feejeensis* extract inhibited the growth of *Candida albicans* with halo of 13 mm, *Staphylococcus aureus* with halo of 0.95 mm, and *Corynebacterium 1002* with halo of 18 mm. The isolates of *Sclerostogonosporo sp*. only inhibited the growth of *Enterococcus sp.* with halo of 16mm and of the two strains of *Corynebacterium VD 57 and 1002* with halos of 24mm and 21mm, respectively. Fungus *Phyllosticta capitalensis* extract was the one that performed a greater spectrum of action on all the microorganisms tested, showing formation of halos with diameters between 8mm to 25mm. Those preliminary results confirmed the potential of endophytic fungi as bioactive producers, since metabolites obtained from endophytic isolates in ethyl acetate and fermented medium could inhibit the growth of bacteria and yeasts. Further studies about the identification of the biologically active compounds of these endophytic fungi will be performed so that their potential can be fully exploited.

Keywords: endophytic fungi; bioactive compounds; antagonistic activity

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