Title: MYCELIAL GROWTH INHIBITION OF *Sclerotinia sclerotiorum* BY EXTRACTS OBTAINED FROM ENDOPHYTIC FUNGI ISOLATED FROM *Aloe vera*

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Abstract:

White mold is caused by the fungus *Sclerotinia sclerotiorum* (Lib.) de Bary, affecting mainly soybean plants. This fungus is found in soil, and symptoms are characterized by lesions covered with white cottony mycelia, that usually arise from resistance structures called sclerotia, which makes it difficult to eradicate the disease. Endophytic microorganisms inhabit the majority of plants, at least during a period of the plant life cycle, apparently causing no disease, and have been reported as protective against attack by other pathogens, insects and herbivores, due to production of toxins. They can still produce plant hormones, enzymes and other chemicals, providing benefits to the host plant, while developing inside it. Studies on the potential of endophytic microorganisms have become relevant, especially those related to the discovery of new products, both for use in biological control of pests and diseases, as for application in biotechnological or pharmaceutical industries. In order to verify the inhibition of mycelial growth of *S. sclerotiorum*, extracts were obtained from endophytic fungi isolated from *Aloe vera* (aloe), a medicinal plant with antimicrobial properties already described in the literature. Endophytes were isolated from aloe leaves and previously tested for *in vitro* activity against *S. sclerotiorum* in Potato Dextrose Agar (PDA). We selected two promising fungal strains, and crude extracts were obtained using the organic solvent ethyl acetate. The extracts were dissolved in methanol, filtered in sterile membrane, and impregnated in sterile filter paper discs, being tested against two strains of *S. sclerotiorum*, a less virulent and a more virulent one. Both fungal extracts were found to inhibit the growth of both strains of *S. sclerotiorum*. Given the great potential for biological control, the endophytic fungi were submitted to DNA extraction for molecular identification, and the fungal extracts shall be submitted to chemical analysis of their components by thin layer chromatography and mass spectrophotometry.

Keywords: antifungal, biological control, endophytes, white mold

Financial support: UEPG/Fundação Araucária