TITLE: MICRORGANISMS ASSOCIATED WITH LEAF-CUTTER ANTS: MORPHOLOGICAL PROFILE AND IN VITRO INTERACTIONS.

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ABSTRACT:

Leaf-cutter ants are quite known for symbiosis relations with some microrganisms and are part of the group of eusocial insects, serving as a model for the study of microbial community dynamics and of symbiotic coevolution processes. However, a little is known about the microrganisms that participate in this process, forming the sponge of the fungal garden symbionts. The objective of this study was to isolate, purify, identify and conserve the microrganisms associated with the fungus garden of the leaf-cutter ants *Atta laevigata*. For this purpose, foraging ants were collected from four nests in june, and september, 2018. Asepsis procedures were performed on the material and inoculated small fragments of fungus sponge and ants in PDA (Potato Dextrose Agar) medium culture. After a period of approximately seven days, cultures of monosporic colonies of the microrganisms and micro cultures were obtained that allowed macroscopic and microscopic observations of the colonies of fungi. From the isolation of this fungus garden associated with leaf-cutter ants, Gram-negative and positive bacteria and some fungi were identified by macroscopic and microscopic studies: *Chaetomium sp*., *Escovopsis sp., Aspergillus sp.* These results highlight the importance of the interaction between these microrganisms, since studies of these mechanisms may serve as incentives for the development of new antimicrobial treatments.

Keywords: Isolation, fungi, control, bacteria.

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