Evaluation of the avicelase activity produced by *Leucoagaricus gongylophorus* and its fungal microbiota associated with leaf-cutting ants - *Atta sexdens*, in Amazonas state

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The ants of the genus Atta are popularly known as saúvas and considered agricultural pests controlled by insecticides toxic that harmful to humans and other animals. Its food is obtained from the degradation of the biomass vegetal that is used to feed the basidiomyceto *Leucoagaricus gongylophorus* grown by the latter. The leaf-cutting ants are inserted in the eusocial insects and reached what can call acme of the instinct through the agriculture of mushrooms. The basis of this symbiosis between fungi and leaf-cutting ants there is more than 50 million years. Within this context, the objective of this study was to investigate the production of a avicelase by *L. gongylophorus* and its associated microbiota. For induction of enzymatic activity was used Manachini solution added avicel (appropriate substrate) in a final concentration of 0.5%. Fermented for 168 hours at 28 °C and filtered through a Millipore membrane. Qualitative evaluation was performed by agar diffusion using avicel as indicator and dye Congo Red as developer. The quantification of the avicelase was performed as described by Miller (1959). The main microorganisms isolated from *L. gongylophorus* were identified by sequencing of ITS region and 16S rDNA; *Bionectria ochroleuca*, *Aspergillus flavus*, *Trichoderma longibrachiatum*, *Fusarium solani*, yeasts and Gram-positive bacteria not cultivable. The qualitative and quantitative analyzes indicate *T. longibrachiatum* (38.33U/mL) and *A. flavus* (32.66U/mL) as the best producer compared to avicelase *L. gongylophorus* (16.00U/mL). Therefore, these results may in the future, determine a new type alternative control this ants using target inhibition of cellulases as avicelase.

Word Keys: leaf-cutting ants, avicelase, fungi

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