Evaluation of production of cellulase from the bioconversion of regional agricultural residues in nature by *Penicillium* spp. endophytic of Amazon.

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The conversion of agricultural residues regional are alternatives very effective in obtaining of high-value aggregate products such as enzymes, ethanol, proteins, etc. Besides being an alternative to reduce the deposition of these residues on the environment. Many microorganisms can promote such conversion, because they produce a variety of specific enzymes capable of modifying molecules through microbial transformations (bioconversions). This paper presents the preliminary results of the evaluation of cellulase production by biotransformation of six agricultural regional residues (bark/cupuaçu, bark/passion fruit, bark/cassava, bagasse/cane, bark/annatto and core/passion fruit) for four fungi endophytes of the Amazon from genus *Penicillium*. For enzyme production, were inoculated 20µL of spore suspensions of each strain in erlenmeyer of 50ml containing 5g of each residue triturated fresh and autoclaved. After 168 hours at 28°C, carried out a filtration on Millipore membrane with the addition of 10mL of autoclaved distilled water and stirred on Vortex. For qualitative assessment, we used the *cupplate* technique using carboxymethyl cellulose as a promoter and Congo red dye as indicator. The quantitative evaluation of endoglucanase (CMCase) was performed using a method described by Miller(1959). Of strains of *Penicillium* spp. studied, three have produced cellulases, considering the translucent halos observed in the qualitative tests for five different subproducts evaluated, and of these three strain sat least two have had enzyme activities above 0,1500 U/mL in two different subproducts. Therefore, by the methodology used was possible to detect the production of cellulases by *Penicillium* fungi in different regional agricultural residues as well as quantify in enzymatic activity.

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