TITLE: SELECTION OF HYDROLASES WITH CELLULASE, B-GLUCOSIDASIC, XYLANASE ACTIVITIES IN SUBMERGED CULTIVATE OF FILAMENTOUS FUNGI ISOLATED FROM AGRO-INDUSTRIAL WASTE.

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Abstract:
Among the microorganisms with the potential for biotechnological applications, the fungi are highest potential of interest because of the diversity of enzymes that secrete into the culture medium, besides being responsible for the deterioration of various organic substrates. These microorganisms play an important role in nature, due to the capacity utilization of organic matter decomposing lignocellulosic residues and generating carbon units, as well as other minor substances. With the advancement of knowledge on the potential of fungal enzymes, various industries has been using its catalytic potential for generating new products or improving those already produced. Currently, due to the diversity of both microorganisms as enzyme, there are many researchareas involving the production of hydrolytic enzymes on a large scale for industrial purposes. In this context, are xylanases and cellulases, enzymes that can be produced by a variety of microorganisms, but nonetheless are filamentous fungi which stand out as the leading producers. The production of xylanase and cellulase on an industrial scale is presently dominated by species of *Aspergillus* and *Trichoderma*. The aim of this study was to evaluate the activities of cellulase, xylanase and β-glucosidase in strains of *Colletotrichum* and *Aspergillus*. The organism was grown in liquid medium containing cellulose plus the following mineral salts: KH_2PO_4, $(NH_4)_2SO_4$, $CaCl_2.2H_2O$, CH_4N_2O, $MgSO_4.7H_2O$, $FeSO_4.7H_20$, $CoCl_2.6H_2O$, $MnSO_4.H2O$ and $ZnSO_4.7H_2O$; maintained at 30 °C, 120 rpm for 120 hours. Aliquots of 2 mL were taken every 24 hours and analyzed for the presence of xylan-degrading and cellulolytic activities. In cellulase evaluation we observed increased activity, reaching a maximum of approximately 0.19 U/mL in 72 hours of cultivation for *Colletotrichum* and 0.32 U/ mL at 192 hours for Aspergillus. In assessing the activity β-glucosidasic, the *Colletotrichum* and Aspergillus strains showed higher activity, ranging from 0.7 U/mL and 0.18 U/mL, respectively, in period of 72 hours. The xylanase activity showed 27.0 U/mL and 5.6 U/mL, within 96-216 hours for *Colletotrichum* and *Aspergillus* respectively, showing substrate degradation potential in the culture medium. These results showed that the fungi have potential to be used in the hydrolysis of cellulose and xylan, with a view to the development of biotechnological process.

Keywords: Hydrolases, fungi, enzymes.

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