

TITLE: SCREENING OF FUNGI FROM THE GENUS *ASPERGILLUS* FOR PRODUCTION OF PROTEASE WITH COLLAGENOLYTIC ACTIVITY IN DIFFERENT SUBSTRATES

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ABSTRACT:

Fungi of the *Aspergillus* genus have been constantly explored to bioprospection of proteases (pectinases, keratinases, collagenases and other) with diverse applications, mainly in the pharmaceutical industry, highlighting proteases with collagenolytic action, especially used to burn and dermatological diseases treatment, and still, in the cosmetics industry in skin treatments. The exploration of the fungi of this genus are mainly related to the ease of cultivation and maintenance, and for various species to be classified as GRAS (Recognized as safe). The proteolytic enzymes prospection by microorganisms varies according to the conditions applied, mostly nutrient substrate and production time. The objective of the study was selected the following parameters: Fungi (*Aspergillus japonicus* URM 5620 and *Aspergillus niger* URM 5838), best substrate (wheat bran, peel and tegument of Achachairú (*Garcinia humilis* (Vahl) C.D. Adam) and time (48 h and 72 h) to proteases production with collagenolytic activity. The production was made out in solid state fermentation with with 60% moisture at 30°C, to determination of protease and collagenolytic activities, and Azocase (1%) and Azocol were used as substrates, respectively. The highest index of proteolytic activity was 30.33 U/mL in the test with *A. japonicus* on wheat bran substrate at 72 h of production. While for the collagenolytic activities the same fungus presented significant results with time the of 48h obtaining 145.95 U/mL in the substratum peel of Achachairú. Therefore, were observed the significant influence and importance of analyzing the type of substrate for enzyme production, since it interferes directly in the production time and specific activity. According to the obtained results, *A. japonicus* deserves attention by the significant production of protease with collagenolytic activity being a new alternative for application in the cosmetic and pharmaceutical industry.

Keywords: Bioprospection, Collagenases, Fungi