TITLE: FILAMENTOUS FUNGI ISOLATED FROM *Manihot esculenta* FOR PRODUCTION OF EXTRACELLULAR ENZYMES PRODUCED OF BIOTECHNOLOGICAL APPLICATIONS

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ABSTRACT:

A diversity of endophytic fungi is found in Amazon region with potential for biotechnological products. Studies have shown that the molecules produced by these microorganisms can be used by industry. Currently, the production of enzymes by microorganism is one of the main areas of Industrial Biotechnology, among them, as amylases and lipases. Amylase and lipase are two very important enzymes that have been vastly studied and have great importance in different industries, being the main food, textiles and chemicals. The airm of these work was to evaluate the production of extracellular enzymes from 14 endophytic fungi isolated from *Manihot esculent.* The experiment was realized with a protocol for isolation and standard enzymatic tests. The enzyme extract was filtered with glass fibrer membran (44 mm) and kept in separate test tubes. The tests were performed in triplicate: 150µL of extract was pipetted into petri dishes containing culture medium with inducer extract and incubated at 37 °C for 36 hours. Lipolytic activity was evidenced with a presence of small crystals released around each cup-plate. The amiolytic activity was revealed with 0.1% iodo solution on the plate. They showing the non-solid purple coloration and a translucent halo formation formed around each sheet cup. The results were represented by enzymatic indices (EI), microorganisms that presented IE $\geq$ 2.0 were good producers. This research showed that 14 fungi were isolated, and six were positive for especific activity to both enzymes. Three fungis (M1C11, M2S1 and MS14) showed (EI) 3.3, 3.6 and 3.5 to amylase, and three fungi (M1C15, M2S5 e M2S1) showed (EI) 3.3, 3.6 and 3 to lipase. The results obtained demonstrate the great biotechnological potential of filamentous fungi isolated from Amazonian tubers, especially the endophytic fungi of toxic plants of the *Manihot esculenta*, justifying future researches into the characterization of these enzymes from the Amazon fungi, which will later can be beneficial to humanity in its relevance.

Keywords: Enzymatic extract, endophytic fungi, amylase, lipase