

**TITLE: ISOLATION, IDENTIFICATION OF FILAMENTOUS FUNGI IN TAILINGS FROM CASSAVA ROOT AND ENZYMIC EVALUATION OF AMYLASE, CELLULASE AND XYLANASE.**

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**Abstract:**

Hydrolytic enzymes are among the main targets of the research currently due to the large potential of application in the industrial sector. Of the various technologies employed to reduce or minimize such waste, the use of biological processes are one of the alternatives since they can be used as biomass for cultivation of fungi of economical interest. For the industrial sector, the isolation, characterization and identification of microorganisms with ability to produce biocatalysts is important to introduction of "new" enzymes in the market. Therefore, this study aimed to isolation, identification and enzymatic evaluation of amylase, cellulase and xylanase in microorganisms. The tailings from cassava roots used in the isolation of the microorganisms were collected in particular area, located on the roadside PA 391, Km 11 (-1.251285 S and -48.278057 W, altitude 14m) in Mosqueiro district (Belém-PA). Different strains of microorganisms were isolated using the GPY and PDA media from cassava root (*Manihot esculenta* Crantz). The strains were evaluated in semi-solid medium APY, CMC and XPY as the capacity to secrete amylolytic, cellulolytic and xylanolytic enzymes, respectively. After 72h incubation at 30 °C the plates with APY medium were revealed with a Lugol solution, while the plates with XPY and CMC medium used Congo red solution, followed by 0.1M saline solution. The translucent halo around the colony was indicative of the presence of enzymes. The isolated strains were identified by classical taxonomy methods. They were isolated 10 strains of fungi from the waste, these being belong to genera *Paecilomyce*, *Basidium*, *Demacia*, *Colletotrichum*, *Aspergillus* and *Fusarium*. The strains were tested for secretion of enzymes, and among these, six fungal strains MC04, MC05, MC06, MC08, MC011, MC015 and MC045 were positive to the secretion of amylase enzyme with halo until 1.0 cm. They were also selected two producers microorganisms of cellulose MC02 and MC02A with halos of 2.0 cm and four producers of xylanase MC05, MC06, MC07 and MC08 with halos until 4.0 cm, the other strains tested negative for all enzymes. The fungal isolates have higher capacity degradation in CMC and XPY medium, depending on the observed halo around their colonies.

**Keywords:** Isolation, Fungi, Enzymes

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