

## **Analysis of amylase production by filamentous fungi collected and isolated in the North of Minas**

### **Gerais**

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A search of the richest sources of enzymes has been of great value to the branch of biotechnology. Thus, there is need to explore the microbial biodiversity varied environments, including the search for new sources of enzymes of industrial interest. Among the enzymes can be mentioned amylases, which are widely used in industrial textiles, paper, beer making, bread, among others. The study aimed to carry out collection and isolation of filamentous fungi, analyze the macroscopic morphology of the isolated, analyze the amylase production and the influence of temperature on the growth of these microorganisms. The collect of material for isolation of micro-organisms was held in the North of Minas Gerais, in Janaúba, and the collected materials were tree bark, fruit peel and decaying tree leaf. For isolation, the samples were placed in Petri dishes containing oat solid at 30°C for 4 days and analyzed every 24h. The analysis of fungal growth temperature was made with the inoculum of the microorganism on Potato-Dextrose-Agar at 35°C to 50°C with 5°C range. The distance measuring colonies of fungi was performed after 48h of growth and the growth rate calculated in centimeters per hour. After measuring the radius of growth of micro-organisms, was added a solution of 10mM iodine and 10mM iodete to the culture medium, revealing the substrate degradation halo. From the isolation, it was obtained a total of 21 filamentous fungi, which are developed in different temperatures, rather at 35°C, however 13 fungi grow at 40°C, and 10 at 45°C. Regarding the enzyme production it was found that the 21 fungi were good producers of amylases, obtaining 2 cm enzymatic radius at 35°C. Thus, it can be concluded that the bioprospeção is crucial for the isolation of fungal potential biotechnological applications, especially in the production of amylases as seen in the study.

**Keywords:** bioprospection, filamentosuos fungi, amylases, enzymes, industrial appllications

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