

## **Hydrolases Production by *Aspergillus casingii* Under Submerged and Solid-State Fermentation Induced with Agroindustrial Sources**

**DUARTE, R.R.R.<sup>1</sup>; Osaku, C.A.<sup>2</sup>; Simão, R.C.G.<sup>2</sup>; Kadowaki, M.K.<sup>2</sup>**

<sup>1</sup>IC, Lab. Bioq. de Microrganismos - Centro de Ciências Médicas e Farmacêuticas;

<sup>2</sup>Centro de Ciências Médicas e Farmacêuticas;

UNIOESTE (Universidade Estadual do Oeste do Paraná), Cascavel, PR, Brasil.

Latin America produces more than 500 million tons of by-products and agroindustrial residues a year, and Brazil is the responsible for at least half of that. They can cause serious environmental problems, although they may be used as substrate for microbial growth and then being reduced. Among microorganisms, fungi especially can grow in a huge range of environments, besides the fact that they can secrete certain enzymes. These enzymes open new possibilities for bioconversion of agricultural wastes into easier fermentable products. The aim of this study was to investigate certain hydrolases production from *Aspergillus casingii* in submerged and solid-state cultures containing Czapeck medium while testing several agroindustrial sources as inducers. Filtrates have been obtained from those and amylases, invertases, pectinases, xylanases, cellulases, inulinases and trehalases activities have been measured in a colorimetric assay method using 3,5-dinitrosalicilic acid, according to MILLER (1959). The filamentous fungus produced a high invertase activity, and it was best induced with barley bagasse in solid-state condition (10.98 U/mL), which was the same circumstance we have obtained the highest pectinases production (3.27 U/mL). Submerged cultures were the most suitable environment to induce xylanases (11.78 U/mL) and amylases production (3.18 U/mL) when in medium with wheat bran and corn residue, respectively. However, according to our literature-based assays conditions, no cellulases, inulinases or trehalases production has been detected in medium with the current ascomycete.

**Keywords:** *A. casingii*, agroindustrial sources, hydrolases.

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