

KINETIC PRODUCTION OF LIGNINOLYTIC ENZYMES BY *Pleurotus sajor-caju* IN FRUIT HUSKS OF *Syagrus-coronata*

Authors: Santos, M. B.¹, Aragão, U. S.¹, Santos, J. S. D.¹, Kamida, H. M.¹, NETO, A. G.¹

¹ Universidade Estadual de Feira de Santana (Avenida Transnordestina, s/n - Novo Horizonte, Feira de Santana - BA, 44036-900).

Abstract:

The use of enzymes is considered today one of the largest sectors of the biotechnology industry and they are widely used as producers of economic interest substances. The use of agro-industrial wastes is an alternative to the biotechnology industries obtain hydrolytic and oxidative enzymes at a lower cost compared to enzymes that are on the market. The ligninolytic enzymes such as laccase, manganese peroxidase, lignin peroxidase, are widely used and produced by many species of Basidiomycetes of genus *Pleurotus*. This study aimed to quantify the production of laccase (Lac), manganese peroxidase (MnP), lignin peroxidase (LiP) by the fungus *Pleurotus sajor-caju* (CC-72) in *Syagrus coronata* residue (fruit husks). The experiment consisted in Erlenmeyer flasks (250ml) containing 15g of *Syagrus coronata* residue (fruit husks), 5,19g of wheat bran (40/1), 0.4g of calcium carbonate (2% of dry weight) and 40,22ml of distilled water (70% of moisture). The media were inoculated with four 'plugs' (0.5cm) of *Pleurotus sajor-caju* (CC-72), incubated in BOD chamber at 28 ± 2 °C in the dark. For the enzymatic assessment, the cultures were stopped every 7 days until the end of the incubation period (28 days). In determining the Laccase (420nm; ϵ :36000 mol⁻¹.cm⁻¹), the lignin peroxidase (310nm; ϵ :9300 mol⁻¹.cm⁻¹) and manganese peroxidase (610nm; ϵ :4460.mol⁻¹.cm⁻¹) was used the methodology of D'Agostini et al. (2011), Tien and Kirk (1988); and Kuwahara et al. (1984), respectively. The analyzes were performed in triplicate. Under these studied conditions, Lac ranged from 8.14 to 12,39 UI/L with a peak on the 28th day, was not detected LiP and MnP ranged from 6.19 to 19,46 UI/L with a peak on day 21. It notes that the Lac and MnP enzymes were expressed simultaneously in different intensities throughout the study period.

Key words: ligninolytic enzymes, *Pleurotus sajor-caju*, *Syagrus coronata*.

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