



## Intracellular laccases of *Pleurotus ostreatus* grown on wheat straw

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**Introduction.** Enzymes have advantages over chemical catalysts: are cheap, their reaction products are biodegradable, operating at moderate pressure and temperature and some enzymes are selective for one type of reaction (1). Laccase is a multicopper oxidase (EC 1.10.3.1) which reduces oxygen to form two molecules of water and simultaneously oxidized to various aromatic compounds by abstraction of four electrons (2), catalyzes the oxidation of organic and inorganic substances (3). These enzymes have a potential use in bioremediation processes and in the food industry. In this study, the intracellular laccases activity of *Pleurotus ostreatus* grown on wheat straw was evaluated.

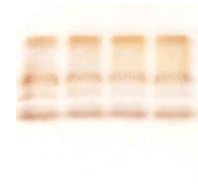
**Methods.** *Pleurotus ostreatus* ATCC 32783 was used in this study. Wheat straw bags were inoculated and incubated at room temperature. When the substrate was invaded by mycelium, the enzyme extract was obtained by macerating mycelium. Laccase activity was determined at pH of 4.5 and 6.5, using 2,6-dimethoxyphenol (DMP) as substrate (4). Zymograms were performed (4).

**Results.** Laccase activity evaluated at pH 4.5 was higher than at pH 6.5, obtaining around of 340 and 100 units per gram of dry biomass (U/g X), respectively.

Figures 1 and 2 show the zymogram pattern incubated at pH 4.5 and 6.5 respectively. In both cases, four laccases isoenzymes were observed.



**Figure 1.** Laccases zymogram incubated at pH 4.5.



**Figure 2.** Laccases zymogram incubated at pH 6.5.

**Conclusions.** High laccase activity was observed and the better pH for laccase activity was 4.5. Similar laccase isoenzymes pattern at pH 4.5 and 6.5 was obtained.

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