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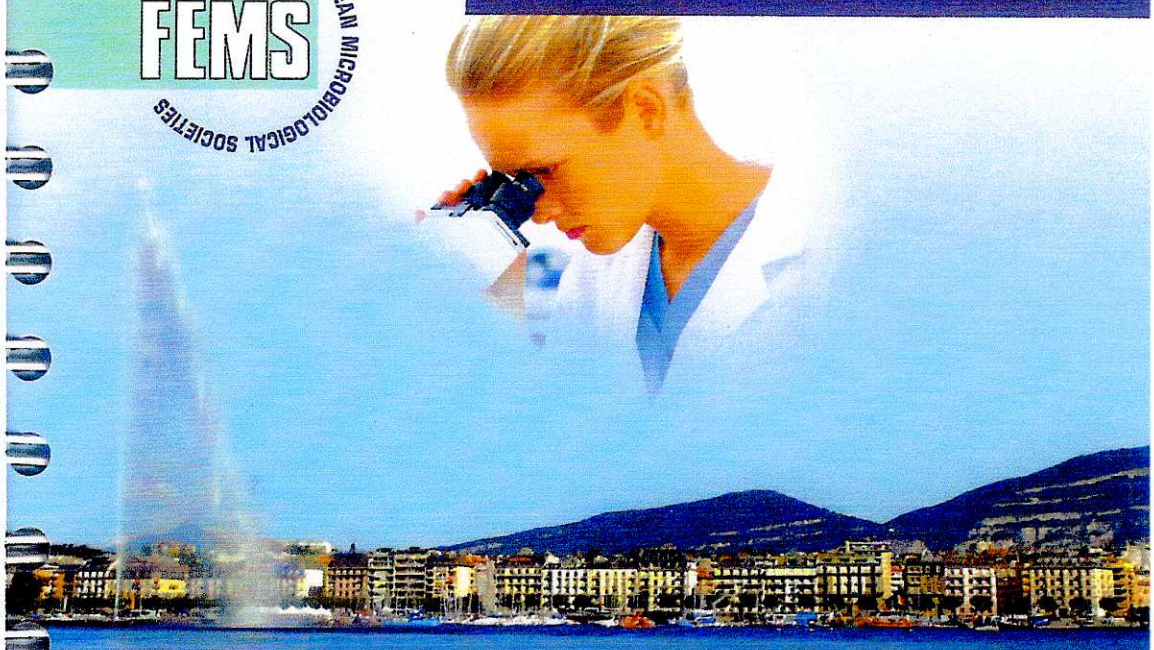

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LIGNINOLYTIC ENZYMES ACTIVITIES AND SEM ANALYSIS OF FUNGAL INOCULUM OF *ANTHRACOPHYLLUM DISCOLOR*

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Fungal inocula are used for biotechnological applications especially in bioremediation process. They are formulated with a carrier, nutrient sources, binder, and lubricant to be encapsulated for a layer of fungal mycelium. The white-rot fungus *Anthracophyllum discolor* was studied for its ability to growth actively to form these inocula and to produce ligninolytic enzymes. In this study, fungal inocula were formulated on 3 different mixtures of lignocellulosic materials: F1, F2 and F3 and, two kind of fungal inocula were produced, coated and uncoated. The ligninolytic enzymes Laccase (Lac), Manganese Peroxidase (MnP), Manganese-independent Peroxidase (MiP) and Lignin Peroxidase (LiP) were measured during the experiments. The main enzymatic activity detected was Manganese Peroxidase for F1, F2 and, F3 tested and Laccase had the lowest activity. The amount of total ligninolytic enzyme activity was approximately 40% higher on uncoated than coated pellets, demonstrating the capacity of *Anthracophyllum discolor* to growth and produce enzymes on this formulation. Uncoated pellet showed the highest MnP activity, after 15 days in average was 477,13 mmol/min/g being the pick of enzyme at the day 15 with 220,99 mmol/min/g. In contrast for coated pellets the MnP activity was 271,15 mmol/min/g. The LiP was not detected on fungal inocula studied. Based on the results of ligninolytic enzymes, the fungal ability to growth and colonization on these pellet formulations showed by scanning electron microscopy (SEM), the pellet uncoated formulated with F1 lignocellulosic materials presents high potential to be used on bioremediation processes. These results will be presented and discussed.