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Abstract

## Analysis Of Herbicide Paraquat Degradation, By Isolated Macromycetes From Southeast State Of Chiapas.

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**Abstract:** In this study was to perform the isolation and characterization of macromycetes from the southern agricultural region of Chiapas in order to evaluate their potential use for bioremediation purposes of recalcitrant compounds to the environment, specifically the herbicide paraquat. 328 specimens were collected, of which 32.1% (105 specimens) were isolated. 23 fungi were identified to genus and species level and 48 to genus level. The most abundant species was *Hexagonia hydnooides*; and the most represented genera were *Xylaria* and *Marasmius*. All isolates were tested for laccase activity. An experiment was conducted to determine the tolerance on solid culture medium. Those strains that were tolerant were used to determine the percentages of degradation of the herbicide in the liquid culture medium at the same concentration. 10 strains with a percentage of degradation of 50 to 70% were found. These strains were monitored to determine the production of extracellular enzymes (laccase, manganese peroxidase, and aryl alcohol-oxidase), and relate the degradation of paraquat.

From eight surveys made in the coffee area of El Soconusco, Chiapas, 105 strains of macromycetes were isolated. 10 strains showed an ability to degrade the herbicide paraquat (between 50-70%) in 15 days growth at 26°C, in liquid medium.

**Keywords:** Bioremediation, paraquat degradation, enzymes, macromycetes, biodiversity.

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