MICOLOGIA APLICADA INTERNATIONAL, 18(2), 2006, pp. 15-19

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LIGNOCELLULOSIC DEGRADATION IN SOLID-STATE FERMENTATION OF SUGAR CANE BAGASSE BY *TERMITOMYCES* SP.

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Accepted for publication March 16, 2006

ABSTRACT

The present study proposes a system whereby lignin biodegradation in lignocellulosic units may be optimized with the minimum loss of cellulose and maximum lignin loss. Losses were followed during 21 days solid-state fermentation of sugar cane bagasse with *Termitomyces* sp. Biodegradation of sugar cane bagasse, fortified with different concentrations of sucrose and glucose with and without ammonium sulphate was studied. Maximum lignin loss of 27.0%, substrate initially containing 18.6% lignin, occurred when the substrate was fortified with 5% glucose in the absence of ammonium sulphate. The lignin loss in the corresponding fermentation conditions was accompanied by the minimum cellulose loss of 8.5%. Bagasse initially contained 58.70% cellulose and the highest cow reticulo-rumen digestibility of 24.4%, compared with 11.5% of the raw sugar cane bagasse. Efficiency of the solid-state fermentation is discussed.

Key words: *Termitomyces* sp., reticulo-rumen digestibility, biodegradation, sugar cane bagasse, white-rot basidiomycete.

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