

CELLULOLYTIC ABILITY OF *PENICILLIUM* STRAINS ISOLATED FROM SOIL OF THE BRAZILIAN ATLANTIC FOREST

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Penicillium spp. are capable of degrading plant wastes by producing large amounts of enzymes such as cellulases. These form a complex capable of acting on cellulosic materials and producing sugars with industrial interest (e.g., ethanol production). Cellulases are also used for (a) pulp and paper industry (b) in the textile industry. The aim of this study was to evaluate the cellulolytic capability of 17 strains of *Penicillium* isolated from soil of the Brazilian Atlantic Forest and conserved under mineral oil at the URM Culture Collection. All strains were re-grown from mineral oil and re-identified. Each strain was grown in synthetic medium with carboxymethylcellulose as the carbon source and incubated for 5 days at 28°C. Strains were subjected to heat shock for 16h at 50°C. Thereafter, onto each colony was added 5 ml of Congo red stain solution in Tris-HCl. After 30 min this solution was removed and the cultures were washed and submerged under 0.1 M NaCl aqueous solution for 5 min. Finally, an enzymatic index was calculated from the ratio of the diameter of the halo around each colony to the diameter of the colony. All of the 17 strains tested showed a halo of cellulose degradation, indicating enzyme production. The enzymatic ratios varied between 0.2 (*Penicillium brevicompactum* URM5994) and 3.3 (*Penicillium glabrum* URM6009). Thus, *Penicillium glabrum* URM6009 is evaluated as a high producer of cellulase. It was selected for quantitative production of this enzyme and additional studies are taking place in order to verify potential industrial application for clarification of fruit juices.

Acknowledgements:

Authors thank Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco, Brazil (FACEPE) and Financiadora de Estudos e Projetos, Brazil (FINEP) for financial support.