

TITLE: CELLULASE PRODUCTION BY THE ENDOPHYTIC FUNGI
TALLAROMYCES

AUTHORS: SANTOS-OLIVEIRA, A.C.A; SILVA, M.V; NASCIMENTO, F.C.S;
COSTA, L.M; COSTA, M. V. D.; LIMA, J. M. S.; CAVALCANTI, A. D.; FERRO,
L. O.; SOUZA-MOTTA, C. M.

INSTITUTION: DEPARTAMENTO DE MICOLOGIA, UNIVERSIDADE
FEDERAL DE PERNAMBUCO, RECIFE – PERNAMBUCO

ABSTRACT

The cellulase enzyme responsible for the degradation of cellulose, the main compound present in the plant cells. They are used in several areas of biotechnology, in the textile industry to give better finishing in the clothes, also act in the production of beverages, in the winemaking process, improving the aroma and flavor of the wine. Moreover, they exert great importance in the nutrition of animals, increase the digestion of the fibers of the ingested vegetables, are also applied in the production of detergents and bioethanol. This study aims to evaluate the capacity of cellulase production by *Tallaromyces* C22. The microorganism was obtained from the Biotechnology Laboratory of the mycology Department of the Universidade Federal de Pernambuco. We used an inductor submerged medium fermentation for the production of the enzyme, distilled water, KCL 3,8 g/L, K₂HPO₄.7 H₂O 1 g/L, (NH₄)₂SO₄ 1.0 g/L, extrato de malte 0.6 g/L and CMC 10.0 g/L, homogenized and 50 mL of the medium were added together with 1 mL of spore suspension of *Tallaromyces* C22 in a 250mL Erlenmeyer. After inoculation, the samples were incubated for 5 days at 30 ° C with 120 rpm. The evaluation of the production capacity of cellulase by *Tallaromyces* C22 was performed in triplicate, containing, filtered enzyme crude extract 200 µL, CMC 300 µL and citrate buffer pH 6, homogenization of test tubes was made in a vortex of solutions for 20 seconds, taken to warm water bath, for 25 minutes at 50 °C. After this process was added 1,5 mL of DNSA, taken to the warm water bath again this time for only 5 minutes at 100 °C. Subsequently, the ice bath was made for 5 minutes for the thermal shock and revealing the enzymatic activity. The reading of the activity was performed in a spectrophotometer at 540 nm, In this survey was obtained the result 1.5 U.mL⁻¹ based on the literature, there was recognition of enzymatic activity promising by *Tallaromyces* C22 possessing a good production capacity of cellulase submerged fermentation. This fungus is being indicated for further studies of optimization of cellulase production.

KEYWORDS: BIOTECHNOLOGY; FUNGI; SUBMERGED FERMENTATION

FINANCIAL SUPORT: FACEPE