FERMENTATIVE PRODUCTION OF SYSTEMS FOR ENZYMES OF INTEREST IN FEED INDUSTRY

José Erick G. Gomes, Talita Camila E. S. Nascimento, Táyrlla P. R. Silva, Elisângela F. Soares, Polyanna N. Herculano, Cristina M. Souza-Motta, Keila A. Moreira. Universidade Federal Rural de Pernambuco – UFRPE, Rua Dom Manoel de Medeiros, s/n, 52171-900, Recife, Pernambuco, Brasil

The inefficiency in the production of certain endogenous enzymes, leads to low utilization of some compounds of plant origin rich in biomolecules which can be absorbed and used by the animal body. Becomes necessary the use of exogenous enzymes capable of degrading these compounds and make their nutrients to the animal. The present study aimed to evaluate the best conditions of fermentation for the production of phytase, xylanase, amylase, protease and cellulase with different levels of inclusion of forage palm, cassava bark and corn steep liquor, a residue from the processing of maize, in the middle the fermentative using Aspergillus tamarii URM4634 and A. japonicus URM5633 as producers. For the experiment were produced six submerged fermentation systems for each microorganism with varied concentrations of its components. The enzymatic extract obtained was used for the analysis of enzymes. A. tamarii URM4634 showed high activity (U/mg) for xylanase (485.87 ± 13.69), phytase (1104.18 ± 18.88), amylase (504.83 ± 12.50), protease (487.94 ± 14.29), cellulase (226.51 ± 5.06) the fermentative system with 5% concentration of forage palm, 2% of cassava bark and 1% of corn steep liquor, showing that even if adapted better conditions of submerged fermentation compared to A. japonicus URM5633. The A. tamarii URM4634 presented in the same conditions of fermentation enzyme production higher than that presented by A. japonicus URM5633 and may therefore be a microorganism used for this purpose.