B7

α - AMYLASE EXTRACTION FROM MOULDY MEDIUM AND ITS CHARACTERIZATION

Vasanthe Senthuran, Vasanthy Arasaratnam and K. Balasubramaniam
Department of Biochemistry, Faculty of Medicine
University of Jaffna, Sri Lanka

Aspergillus oryzae from different sources were collected and pure colonies were isolated from different samples. Isolated strains were grown in PDA plates and potent α-amylase producer which produced bigger diameter of the halos and highest α-amylase activity [9mm diameter and 417.9 U g DMM^{-1} (Dry Mouldy Medium) activity] was selected for further studies . The selected strain (*A. oryzae* B_{12}) was cultivated in solid and submerged media containing soy flour (30 g), rice bran, 5.0 g and mineral solution (30 ml, H_2O; $MgSO_4$, 0.062 gl^{-1} and 0.01gl^{-1}, $CuSO_4$. $5H_2O$). Maximum α- amylase production by *A. oryzae* B_{12} under solid and submerged conditions were 417.9 U g DMM^{-1} and 57.5 U ml $medium^{-1}$ at 96 and 114h respectively. The effect of time on α- amylase extraction from mouldy bran (mouldy bran to extractant ratio = 1:5) was studied with citrate phosphate buffer (0.01M, pH 5.0) and the enzyme extraction was increased up to 30 min and thereafter no significant increase in enzyme extraction. Effect of different extractants such as distilled water, tap water, glycerol (1%, v/v) , NaCl (1%, w/v) and citrate-phosphate buffer (0.01M., pH 5.0) and different mouldy medium to extractant ratio were studied. Finally under the optimized conditions, the pH of the best optimum extractant was determined. Enzyme was best extracted in citrate-phosphate buffer (pH 5.1) at the buffer to bran ratio of 1:8 and the optimum pH for the extraction of the enzyme was 4.5. The α- amylase activity produced was measured with time and the reaction time was fixed as 5 min. Optimum pH and optimum temperature of the α- amylase were 5.1 (at 30°C) and 55°C (at pH 5.1) respectively.