ABSTRACT

The present work is concerned with the production of enzyme β-galactosidase by *Aspergillus oryzae* IIB-M32 by submerged fermentation in shake flask. Six different culture media such as whey, wheat bran, soybean meal, corn steep liquor (CMC), or complex media were evaluated for the biosynthesis of enzyme. Of all the substrates tested, wheat bran (1.0 %) in distilled water gave maximum β-galactosidase activity (38.81±0.345 μM/ml) after 48h of inoculation with fungal conidia. The pH of the media was suitable for enzyme production was 5.5. Further decrease and increase in initial pH level reduced the enzyme synthesis. The volume of the fermentation medium in shake flask was also changed from 25 ml-100 ml and 50 ml per flask was most suitable for the propagation of mould, and hence for enzyme formation. Effect of the size of inoculum (conidial or vegetative) was also investigated. The yield of enzyme was maximum with the use of conidial inoculum (4 %) rather than vegetative inoculum. The amount of liberated protein (enzyme) was also estimated which was 16.61±0.514 mg/ml.