

ABSTRACT

The present study is concerned with the isolation and screening of a potent mould culture for the production of alpha amylase. Forty mould cultures were isolated from soil and tested for enzyme synthesis. Of all the cultures tested, *Aspergillus niger* GCB-34 and *Saccharomyces cerevisiae* GCB-20 gave maximum production of alpha amylase. Both the strains were used to optimize the cultural conditions. Six different media were tested and M1 medium containing (g/l) peptone, 20; yeast extract, 3.0; starch, 10.0; calcium chloride, 0.2; magnesium sulphate, 0.005; ferrous sulphate, 0.1 in 1000.0 ml phosphate buffer found to be best (100 IU/ml/min) for the production of alpha amylase by *Saccharomyces cerevisiae* GCB-20. However, *Aspergillus niger* GCB-34 gave insignificant production of alpha amylase in all the media. The kinetic parametric study revealed that the yield of the enzyme by dry cell mass, volumetric rates of enzyme production and dry cell mass formation by *Saccharomyces cerevisiae* GCB-20 was highly significant ($p < 0.05$) than the *Aspergillus niger* GCB-34. Sucrose at the level of 0.5% and urea at the level of 0.2% were selected as best carbon and nitrogen sources, respectively. The production of enzyme was reached optimum 72 hours after inoculation. The pH 5.5 was found optimum for the production as well as for the activity of enzyme. However, the temperature 35°C was selected for the production of enzyme while enzyme was more active at 50°C.