

ABSTRACT

In the present study, the production of extracellular β -amylase by solid state fermentation (SSF) was investigated employing *Alternaria* sp. Corn starch was used as a solid substrate for enzyme production. Effects of various process parameters, namely: level of substrate, initial moisture content, rate of fermentation, inoculum level, supplementary carbon, nitrogen source and incubation temperature on β -amylase production were investigated and their optimal conditions were determined. It was observed that 30 g of substrate moistened with sodium citrate buffer at 1:1 resulted in the highest enzyme titre. The β -Amylase production was found maximum at 72 h of incubation period at 30°C using 1.5 ml inoculum level. Supplementation of carbon (lactose) and nitrogen (ammonium nitrate) sources enhanced the β -amylase production. The highest amount of enzyme production achieved at all the optimized conditions was recorded to be 90.6 U/g.

The crude enzyme was partially characterized by optimizing significant assay conditions: enzyme substrate reaction time, substrate concentration and incubation temperature. The highest enzyme activity was obtained at 60°C for 5 min of incubation using 1% substrate concentration.