



ABSTRACT

Proteases belong to the group of enzymes whose function is to catalyze proteins in aqueous medium. These are also called proteinases or proteolytic enzymes. Culture conditions play a significant role on growth and production of protease by bacillus sp. In the present work *Bacillus sp.* was used for the production of protease enzyme. The incubation time, different carbon and nitrogen sources, pH, temperature, agitation speed were optimized to study the maximum production of enzyme. Different carbon sources such as Glucose, Fructose, Sucrose, Maltose and starch were used. Glucose was investigated as the best carbon source. Yeast extract, Peptone, Tryptone and Urea were used as nitrogen sources and peptone was investigated as best nitrogen source. The *Bacillus sp.* showed maximum production at 48 hours at 37°C at pH 7.5. The presence of different metal ions enhanced the proteolytic activity of protease produced, Ca^{2+} ion is found to be the best. The enzyme produced was purified using different purification strategies i.e ammonium sulphate, acetone, dialysis and column chromatography. Every step of purification enhanced the protease activity