**Abstract**

An alkalophilic bacterium, Bacillus sp produced an extracellular alkaline protease, which was found to be active at high temperature and pH range, suitable for commercial laundry detergents. The four substrates viz., soyabean meal, egg albumin, groundnut cake and bengal gram powder were used for increasing the production of enzyme. Among the four substrate used bengal gram, the best substrate for optimization, showed the highest enzyme activity. The physical and chemical parameters were also optimized. The maximum enzyme activity under optimum conditions was obtained with incubation period 24-48h incubation temperature 50ºC, initial pH 10.0, inoculum level 2%. The enzyme was purified to homogeneity by procedures including ammonium sulphate precipitation and acetone precipitation. The purified enzyme had specific activity 7355µg of amino acid released per mg of protein.