

ABSTRACT

Thirty two bacterial cultures were collected from the culture bank of IIB and screened for amylolytic and proteolytic activities. The screening was based on the determination of the H/C ratio and shake flask fermentation. Of all the cultures tested, IIB-14 gave the maximum production for alpha amylase (275.3U/ml) and protease (26.8U/ml). The selected strain was found to be Gram +ve, motile, rod, catalase +ve, starch hydrolysis +ve, casein hydrolysis +ve, aerobic suggesting that it belongs to *Bacillus* sp. Physical and nutritional requirements for optimized protease and alpha amylase production by this strain were investigated, such as fermentation period, initial pH, incubation temperature, carbon source, nitrogen source and size and age of inoculum. The *Bacillus* sp. gave its maximum protease activity at 48hrs of incubation period, pH 9.0, at 40°C, 0.5% peptone as optimized nitrogen source and 1% lactose as optimized carbon source with 4% inoculum of 24hrs of age. The *Bacillus* sp. gave its maximum alpha amylase activity at 72hrs of incubation period, pH 7.0, at 40°C, 1% yeast extract as the optimized nitrogen source, and 2%soluble starch as the optimized carbon source with 2% inoculum of 24hrs of age.