

RENNET FROM *ASPERGILLUS NIGER* IN  
SOLID SUBSTRATE FERMENTATION

V. Shanmuganathan, V. Arasaratnam and K. Balasubramaniam

Department of Biochemistry, Faculty of Medicine,  
University of Jaffna

Rennet is used in the manufacture of cheese from milk. As the calf rennet is expensive and difficult to get in large amounts, microbial rennet has come into use. Optimization of rennet production by *Aspergillus niger* was done in rice bran medium. During solid state fermentation, production of rennet, glucoamylase, pH and moisture content of the moldy bran were monitored at intervals from the time of inoculation. Maximum activity of rennet was observed at 40 h. Moisture content of the medium decreased while the pH of the moldy bran increased as fermentation progressed. When enzyme was extracted from moldy bran with tap water, distilled water and 1% NaCl solution, highest extraction was obtained with distilled water. Kinetic properties of the enzyme were studied. The enzyme activity was assayed by the clotting of milk protein at pH 5.0 and 40°C for 10 minutes. Optimum temperature and pH for rennet activity were 40°C and pH 5.0 respectively. Stability of the enzyme in extract and in dried moldy bran (13.5% W/W moisture) were compared. The enzyme was more stable when it was stored as dried moldy bran than extract under our experimental conditions.