

Production of Linamarase from *Lactobacillus delbrueckii* NRRL B-763

Authors : Ogbonnaya Nwokoro, Florence O. Anya

Abstract : Nutritional factors relating to the production of linamarase from *Lactobacillus delbrueckii* NRRL B-763 were investigated. The microorganism was cultivated in a medium containing 1% linamarin. Enzyme was produced using a variety of carbon substrates but the highest enzyme activity was detected in the presence of salicin (522 U/ml) after 48 h while the lowest yield was observed with CM cellulose (38 U/ml) after 72 h. Enzyme was not produced in the presence of cellobiose. Among a variety of nitrogen substrates tested, peptone supported maximum enzyme production (412 U/ml) after 48 h. Lowest enzyme production was observed with urea (40 U/ml). Organic nitrogen substrates generally supported higher enzyme productivity than inorganic nitrogen substrates. Enzyme activity was observed in the presence of Mn²⁺ (% relative activity = 216) while Hg²⁺ was inhibitory (% relative activity = 28). Locally-formulated media were comparable to MRS broth in supporting linamarase production by the bacterium. Higher enzyme activity was produced in media with surfactant than in media without surfactant. The enzyme may be useful in enhanced degradation of cassava cyanide.

Keywords : linamarase, locally formulated media, carbon substrates, nitrogen substrates, metal ions

Conference Title : ICFEB 2014 : International Conference on Food Engineering and Biotechnology

Conference Location : Barcelona, Spain

Conference Dates : October 27-28, 2014