



Isolation and Evaluation of Extracellular Protease Producing Bacteria

B.C. Walpola^a and Min-HoYoon^b

^a*Department of Soil Science, Faculty of Agriculture, University of Ruhuna*

^b*Department of Bio-Environmental Chemistry, College of Agriculture and Life Sciences, Chungnam National University, Korea*

^a*buddhiwalpola@yahoo.com*

^b*mhyoon@cnu.ac.kr*

Abstract

In the present study, bacteria strains capable of producing protease were isolated and protease activity and stability were assessed under different p^H and temperature conditions. Four bacterial isolates (B1-B4) were found to have proteolytic activity on skim milk agar plates. Time course studies indicated that strains B1, B2 and B3 had the highest protease activity (36, 50 and 57 U/ml respectively for B1, B2 and B3) after 24 h of incubation and strain B4 had the highest protease activity (35 U/ml) after 18 h of the incubation. The highest protease activity (100%) was found at pH 6 in strains B1, B2 and B4 and at pH 8 in strain B3. However, the strains B1 and B3 showed optimum pH stability at pH 8, whereas strains B2 and B4 showed optimum pH stability at pH 7 and 6 respectively. The protease was active between 30 - 80°C with an optimal activity at 50°C except the strain B4 which recorded optimal protease activity at 40°C. The protease produced by all the isolated strains showed temperature stability at room temperature (30°C).

Keywords: *activity, isolation, protease, proteolytic activity, stability*