



Production of Biosurfactants by two different Isolates of *Bacillus* species

• Nausheen Moin • Mahreen Jalil

• Anjali Kumari • Jaya Philip

Received : November 2012

Accepted : March 2013

Corresponding Author : Anjali Kumari

Abstract : To assess the potential of the two different isolates of *Bacillus* species (ST-1 and ST-2) isolated from oil contaminated soil and chicken farm to produce biosurfactant as the aim of this work. ST-1 was isolated from chicken farm and ST-2 was isolated from oil contaminated soil. 10% v/v and 20% v/v inoculums were used. The ability to produce biosurfactant was examined by oil spreading technique, emulsification activity and emulsification stability test using different types of oils (almond oil, olive oil, coconut oil and kerosene). Difference in the ability to emulsify oil were observed among the bacterial isolates. The best results were obtained with ST-2(20%) for all type of oils and the maximum emulsifying activity was recorded on kerosene. The microbial biosurfactant was extracted and detected by Thin Layer

Chromatography (TLC). Antifungal activity of bacterial isolates were also tested to know that both or any of these two strains posses the antifungal activity. The result show no antifungal activity in any of the two isolates.

Key words: *Bacillus*, biosurfactant, emulsification, substrate.

Nausheen Moin

B.Sc. III year, Industrial Microbiology (Hons.),
Session : 2010-2013, Patna Women's College,
Patna University, Patna, Bihar, India

Mahreen Jalil

B.Sc. III year, Industrial Microbiology (Hons.),
Session : 2010-2013, Patna Women's College,
Patna University, Patna, Bihar, India

Anjali Kumari

Assistant Professor, Deptt. of Industrial Microbiology,
Patna Women's College, Bailey Road,
Patna – 800 001, Bihar, India.
E-mail : jun10anj@gmail.com

Introduction :

Biosurfactants are amphiphilic compounds produced by microorganisms with pronounced surface and emulsifying activities (Singh *et al.*, 2007). Biosurfactants can be divided into 4 groups base on their overall structures. They are glycolipids, phospholipids, lipoproteins or lipopeptides and polymeric (Healy *et al.*, 1996). Microbial surfactants comprise a diverse group of surface-active molecules which are categorized by their chemical composition and microbial origin. They include glycolipids, lipopeptides, polysaccharide–protein complexes, protein-like