

Biosurfactant Production by *Bacillus Subtilis* using Engine Oil as Substrate

Sale, Mohammad¹ and Umar U. Z.²

¹Sa'adatu Rimi College of Education Kumbotso, Kano State, Nigeria

²Maharishi Markandeshwar University, Mullana-Ambala

E-mail: ²umarzango@gmail.com

Abstract—The study demonstrated the production of biosurfactants by the bacteria *Bacillus subtilis* using engine oil as the substrate. The test organism was isolated from engine oil contaminated soil which was collected from an automobile workshop in Samaru, Zaria. The medium used for the experiment was a mineral medium supplemented with 2% engine oil as the sole source of carbon and energy. It was prepared by dissolving 0.4g potassium phosphate, 0.4g of sodium phosphate, 0.2g iron (II) sulphate, 2g ammonium chloride, 0.4g calcium chloride, 0.2 magnesium sulphate in 250ml Erlenmeyer flask containing 200ml distilled water. The study was carried out for a period of 7 days at 120rpm in a shaker. The highest emulsification index obtained was also at 120hrs which was found to be 29.8%. The research show that engine oil can serve as the sole source of carbon and energy for the production of biosurfactant by *Bacillus subtilis*. It is recommended that further research in genetic engineering should be done to enhance the productivity of biosurfactant by the organism.

Keywords: Biosurfactant, Engine oil, *Bacillus subtilis*, Emulsification index.