



Lipopeptide Biosurfactant Production by *Bacillus Cereus* Mfs16 Isolated From Mangrove Forest Soil Using Pineapple Juice As Substrates

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ABSTRACT

*In the present investigation, the pineapple juice production has been tested for its suitability for biosurfactant production using *Bacillus cereus* MFS16 isolated from the crude oil enriched mangrove soil. The strain recorded maximum biosurfactant production (9.43 g L⁻¹) when cassava wastewater was used as a medium. Biosurfactant production was confirmed by standard screening methods include Hemolytic activity, Drop collapsing test, Oil displacement method and Emulsification index. The isolate *Bacillus cereus* MFS16 showed lowest surface tension reduction potential of 26.6 mN m⁻¹, an interfacial tension of 0.97 mN m⁻¹ and a CMC of 33 mg L⁻¹. The active compound was extracted with diethyl ether and fractionated by TLC and FT-IR to confirm the presence of functional groups of a lipopeptide compound. FT-IR spectrum revealed that the important adsorption bands at 3423.04, 2958.90, 1630.84, 1350.12 and 1091.92 cm⁻¹ indicate the chemical structure of lipopeptide. The results demonstrated that the pineapple juice can be a suitable medium for the biosurfactant production, which can improve the process economical.*

Keywords: *Bacillus cereus* MFS16, Biosurfactant, pineapple juice, Lipopeptide, Mangrove forest soil.
