SYNTHESIS OF METHYL ESTERS
FROM LIPID OF Bacillus stearothermophilus
BY TRANSESTERIFICATION REACTION USING BF$_3$

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Abstract

The objective of this observation is to synthesis methyl ester from lipid of Bacillus stearothermophilus by transesterification using BF$_3$ catalyst in methanol (14%). Extraction of lipid that had been done using chloroform : methanol (2:1) solvent. Total lipid content of the bacteria B. stearothermophilus obtained in this study is 0.113 g / g dry cells (11.3% of dry cells). Transesterification using BF$_3$ produced methyl ester 0.0206 g or 0.9115 g/g total lipid (91.15%). Methyl ester analyzed using Gas Chromatography - Mass Spectrometry (GC-MS) show that only one type of fatty acid methyl esters were observed in B. stearothermophilus’s lipids. The fatty acid methyl esters is methyl palmitate as much as 4.47% or 0.9208 mg of the total mass of methyl esters.

Keyword: transesterification, fatty acid methyl ester, Bacillus stearothermophilus, BF$_3$-methanol, GC-MS