

TRANSESTERIFIKASI ENZIMATIK ASAM LEMAK DARI SUBSTRAT MINYAK SAWIT DAN SANTAN KELAPA

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ABSTRACT

We have reported the potency of microbial extracellular enzyme for extracting coconut oil by fermentation. Further investigation was aimed to study capacity of the enzyme on bioprocess of crude palm oil by transesterification saturated fatty acid to fatty acid ester which is useful for industry of cosmetics, biopharmacy and natural chemistry.

*We have studied some lipases from culture filtrate of *Bacillus subtilis* FM-9101, *Pseudomonas aerogenes* FM-9201, *Pseudomonas fluorescens* FM-9202, *Pseudomonas stutzeri* FM-9203 and *Candida rugosa* FM-9301. Those five strains shown different activities during the hydrolysis of substrates which resulted in decreasing or increasing free fatty acids those were liberated from media containing crude palm oil, coconut milk or mixed of both. The optimal transesterification condition were at temperature of 45-50°C and at pH 4.5 for *C. rugosa* and pH 6.0 to 7.0 for *P. aerogenes*, *P. fluorescens*, *P. stutzeri* and *B. subtilis*. Under the enzyme concentration of 25% (v/v), the transesterification was effectively occurred, while at the concentration of 20% (v/v) the enzymatically biosynthesis required longer incubation period.*

Key words : *biosintesis enzimatik, transesterifikasi, lipase, minyak sawit, santan kelapa.*
