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Abstract

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Optimization and Thermodynamics Studies on Enzymatic Milk Fat Splitting Process using Soybean Lecithin

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Abstract:

Lecithin a natural product with unique surface active properties makes it ideal in food processing particularly for fat splitting applications. In the present work the effect of initial fat content, process time, initial enzyme concentration and temperature on splitting of milk was studied using soybean lecithin. The optimum conditions for the maximum percentage fat splitting and unsaturated fatty acid formation were found to be an initial fat content 0.3 g, processing time 90 min, lecithin concentration 5 mL of 3% (v/v) and temperature 40ºC. The maximum percentage fat splitting and unsaturated fatty acid formation were found to be 6.26% (w/w) and 23.24% (w/w) respectively. Activation energy (Ea) required for the milk fat splitting using soybean lecithin was found to be 0.44 J/mol.

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