

ABSTRACT

This study aims to obtain the best monoacylglycerol (MAG) and diacylglycerol (DAG) characteristics through the glycerolysis-interesterification process using a mixture of palm olein and coconut oil. The process conditions were NaOH as a catalyst at 120°C, 12% molecular sieve, and high shear reactor with a speed of 2000 rpm. Factors such as the ratio of palm olein and coconut oil (70:30, 60:40, 50:50, 40:60, 30:70) with a ratio of oil and glycerol (1:3, 1:4, 1:5, 1:6, 1:7) were evaluated. The results showed that the ratio of palm olein:coconut oil (50:50) and the ratio of oil:glycerol (1:5) was the best ratio. Mono- and diacylglycerol (MDAG) are $58,28 \pm 0.45\%$, FFA of $6,75 \pm 0.26\%$, water content of $7,00 \pm 0.40\%$, hardness of $3,93 \pm 0.54$ N, slip melting point of $33,23 \pm 0,61^\circ\text{C}$, and melting point of $35,57 \pm 0,91^\circ\text{C}$. In comparison, the emulsion capacity and emulsion stability of MDAG were $62,66 \pm 0,89\%$ and $61,59 \pm 0,66\%$, respectively.

Keywords: Mono- and diacylglycerol, Palm Olein, Coconut Oil, Glycerol, High Shear Reactor

INTISARI

Penelitian ini bertujuan untuk mendapatkan karakteristik monoasilgliserol (MAG) dan diasilgliserol (DAG) terbaik melalui proses interesterifikasi gliserolisis menggunakan campuran *palm olein* dan *coconut oil*. Kondisi proses adalah 3% NaOH sebagai katalis pada suhu 120°C, *molecular sieve* 12%, dan *high shear reactor* dengan kecepatan 2000 rpm. Faktor-faktor seperti perbandingan *palm olein* dan *coconut oil* (70:30, 60:40, 50:50, 40:60, 30:70) dengan perbandingan minyak dan gliserol (1:3, 1:4, 1:5, 1:6, 1:7) dievaluasi. Hasil penelitian menunjukkan bahwa rasio *palm olein:coconut oil* (50:50) dan rasio minyak:gliserol (1:5) merupakan rasio terbaik. Mono- dan diasilgliserol (MDAG) sebesar 58,28±0,45%, kadar FFA sebesar 6,75%±0.26%, kadar air 7,00±0.40%, kekerasan sebesar 3,93±0.54 N, *slip melting point* dan *melting point* 33,23±0,61°C dan 35,57±0,91°C. Kapasitas emulsi dan stabilitas emulsi MDAG masing-masing 62,66±0,89% dan 61,59±0,66%.

Kata Kunci: Mono dan diasilgliserol, Palm Olein, Coconut Oil, Gliserol, High Shear Reactor