

**SINTESIS MONOASILGLISEROL DAN DIASILGLISEROL DARI  
STEARIN SAWIT DAN STEARIN AYAM : KAJIAN TERHADAP SUHU  
REAKSI DAN RASIO STEARIN DAN GLISEROL**

**INTISARI**

Oleh:

**DEWI SETIANINGSIH**  
**14/365770/TP/11004**

Monoasilgliserol dan diasilgliserol merupakan *emulsifier* yang banyak digunakan pada produk roti, susu dan margarin. Selain sebagai *emulsifier*, monoasilgliserol dan diasilgliserol dapat digunakan sebagai pengganti lemak coklat. Monoasilgliserol dan diasilgliserol dapat disintesis melalui reaksi gliserolisis antara stearin sawit dan stearin ayam dengan gliserol. Stearin ayam memiliki kandungan asam stearat tinggi, sehingga diharapkan mampu menghasilkan mono- dan diasilgliserol yang memiliki karakteristik mendekati lemak coklat. Penelitian ini bertujuan untuk mendapatkan kondisi proses reaksi gliserolisis terbaik yang menghasilkan mono- dan diasilgliserol tinggi. Faktor yang dievaluasi yaitu suhu reaksi dan rasio mol minyak : gliserol terbaik. Produk yang dihasilkan dianalisa komposisi mono- dan diasilgliserol, *slip melting point*, *melting point*, kapasitas emulsi, stabilitas emulsi dan tekstur.

Hasil penelitian menunjukkan bahwa kondisi reaksi gliserolisis terbaik untuk menghasilkan mono- dan diasilgliserol tinggi memerlukan suhu 50 °C dengan rasio stearin : gliserol 1:5 (mol/mol), melalui reaksi gliserolisis dengan katalis NaOH 3 % stearin (b/b), rasio stearin : pelarut 1:3 (b/v), *molecular sieve* 12 % stearin dan gliserol (b/b), menggunakan *stirrer batch reactor* dengan pengaduk bentuk V dan kecepatan 300 rpm. Produk yang dihasilkan mengandung monodan diasilgliserol sebesar 29,67 % dan 47, 66 % serta memiliki *slip melting point*  $36,57 \pm 0,81$  °C dan *melting point*  $42,5 \pm 0,35$  °C. Sedangkan kapasitas emulsi produk yaitu 95,69 % dan stabilitas emulsi 97,34 % serta memerlukan gaya penekanan sebesar 4,69 N.

Kata kunci : monoasilgliserol, diasilgliserol, stearin sawit, stearin ayam, suhu, gliserol

**SYNTHESIS OF MONOACYLGLYCEROLS AND DIACYLGLYCEROLS  
FROM PALM STEARIN AND CHICKEN STEARIN : STUDY OF  
REACTION TEMPERATURE AND RATIO OF GLYCEROL AND  
STEARIN**

**ABSTRACT**

**By:**

**DEWI SETIANINGSIH**

**14/365770/TP/11004**

Monoacylglycerol and diacylglycerol are emulsifier that widely used in bakery, dairy products and margarine. Beside that, monoacylglycerol and diacylglycerol were used as a cocoa butter replacer. Monoacylglycerol and diacylglycerol can be synthesized by reacting a blended of palm and chicken stearin with glycerol through chemical glycerolysis reaction. Chicken stearin was a rich source of stearic acid, so it was expected to produce mono and diacylglycerol which had similar characteristics to cocoa butter. The objectives of this research were to obtain the best conditions of glycerolysis reaction to produce high of mono and diacylglycerol. The evaluated factor were reaction temperature and ratio of glycerol and stearin. Mono and diacylglycerols composition, slip melting point, melting point, emulsion capacity, emulsion stability and texture were the characteristics which were analyzed.

The result showed that the best conditions of glycerolysis reaction to produce high of mono and diacylglycerol were at temperature of 50 °C with glycerol and stearin ratio at 1:5, through glycerolysis reaction with NaOH 3 % oil as a catalyst, solvent and stearin ratio 1: 3 (w/v), molecular sieve 12 % of stearin and glycerol (w/w) using stirrer batch reactor at agitating speed 300 rpm. The result of mono and diacylglycerol was 29,67 % and 47,66 % . The product has a slip melting point at  $36,57 \pm 0,81$  °C -  $42,5 \pm 0,35$  °C and melting point  $42,5 \pm 0,35$  °C. The emulsion capacity was 95,69 % and emulsion stability was 97,34 %. The emphasis force of product was 4,69 N.

**Keywords** : monoacylglycerol, diacylglycerol, palm stearin, chicken stearin, temperature, glycerol.