

FORMULASI DAN STABILITAS MIKROEMULSI VIRGIN COCONUT OIL (VCO) DALAM AIR MENGGUNAKAN METODE EMULSIFIKASI SPONTAN

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INTISARI

Telah dilakukan penelitian mengenai formulasi dan stabilitas mikroemulsi *Virgin Coconut Oil* (VCO) dalam air menggunakan metode emulsifikasi spontan. Penelitian ini bertujuan untuk menentukan formulasi mikroemulsi minyak dalam air dengan VCO sebagai fase minyaknya menggunakan kombinasi tiga surfaktan dan menentukan pengaruh variasi rasio VCO:air terhadap kestabilan mikroemulsi.

Mikroemulsi *Virgin Coconut Oil* (VCO) dalam air dibuat dengan menggunakan VCO sebagai fase minyak dengan kombinasi surfaktan pada variasi *Hydrophylic Lipophylic Balance* (HLB) 12, 13, 14, dan 15. Uji stabilitas dilakukan pengujian selama 3 minggu. Pengujian meliputi sifat organoleptik dan nilai turbiditasnya akibat penyimpanan pada suhu ruang, pemanasan, dan sentrifugasi. Mikroemulsi dengan HLB stabil selanjutnya diuji kadar *Free Fatty Acid* (FFA) dan divariasi VCO:air untuk mengetahui pengaruhnya terhadap kestabilan mikroemulsi yang terbentuk.

Hasil penelitian, diperoleh mikroemulsi paling stabil adalah mikroemulsi dengan HLB 14 dengan formulasi 5 mL VCO, 65 mL air, dan 30 mL surfaktan dengan komposisi 2,85 Span 80, 26,4 mL, Tween 80, dan 0,75 mL Tween 20. Sifat organoleptiknya transparan, aroma seperti Tween 80, dan 1 fase. Nilai turbiditas setelah penyimpanan selama 3 minggu maupun akibat sentrifugasi nilainya <1%. Nilai kadar FFA pada mikroemulsi HLB 14 adalah 0,021%. Besarnya variasi VCO:air berpengaruh terhadap kestabilan mikroemulsi yang dihasilkan, semakin besar perbandingan VCO:air yang digunakan, maka semakin tidak stabil mikroemulsi yang terbentuk, atau bahkan tidak membentuk mikroemulsi.

Kata kunci : HLB, mikroemulsi, surfaktan, turbiditas, VCO

***FORMULATION AND STABILITY OF VIRGIN COCONUT OIL (VCO)
MICROEMULSION IN WATER USING SPONTANEOUS
EMULSIFICATION METHOD***

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ABSTRACT

The formulation and stability of Virgin Coconut Oil (VCO) microemulsion in water using spontaneous emulsification method has been conducted. This study aims to determine the formulation of oil-in-water microemulsion with VCO as the oil phase using a combination of three surfactants and determine the effect of variations VCO:water ratio on the stability of the microemulsion.

Microemulsion of Virgin Coconut Oil (VCO) in water was made using VCO as the oil phase with a combination of surfactants at variations of Hydrophylic Lipophylic Balance (HLB) are 12, 13, 14, and 15. The stability test of microemulsion was carried out for 3 weeks. The tests included organoleptic properties, turbidity values due to storage at room temperature, heating, and centrifugation. Microemulsions with stable HLB were then tested for FFA levels and VCO:water variations were tested to determine their effect on the stability of microemulsions.

The results showed that the most stable microemulsion was a microemulsion with HLB 14 with formula is 5 mL of VCO, 65 mL of water, and 30 mL of surfactant with compositions are 2,85 mL of Span 80, 26,4 mL of Tween 80, and 0,75 of Tween 20. The organoleptic properties of microemulsion are clear appearance, an aroma like Tween 80, and one phase. The value of turbidity after storage for 3 weeks and centrifugation is <1%. The value of FFA content in HLB 14 microemulsion was 0.021%. The magnitude of variation VCO:water affects the stability of the resulting microemulsion, the greater ratio of VCO:water used, the more unstable the microemulsion is formed, or does not even form a microemulsion.

Key word : : HLB, microemulsion, surfactant, turbidity, VCO