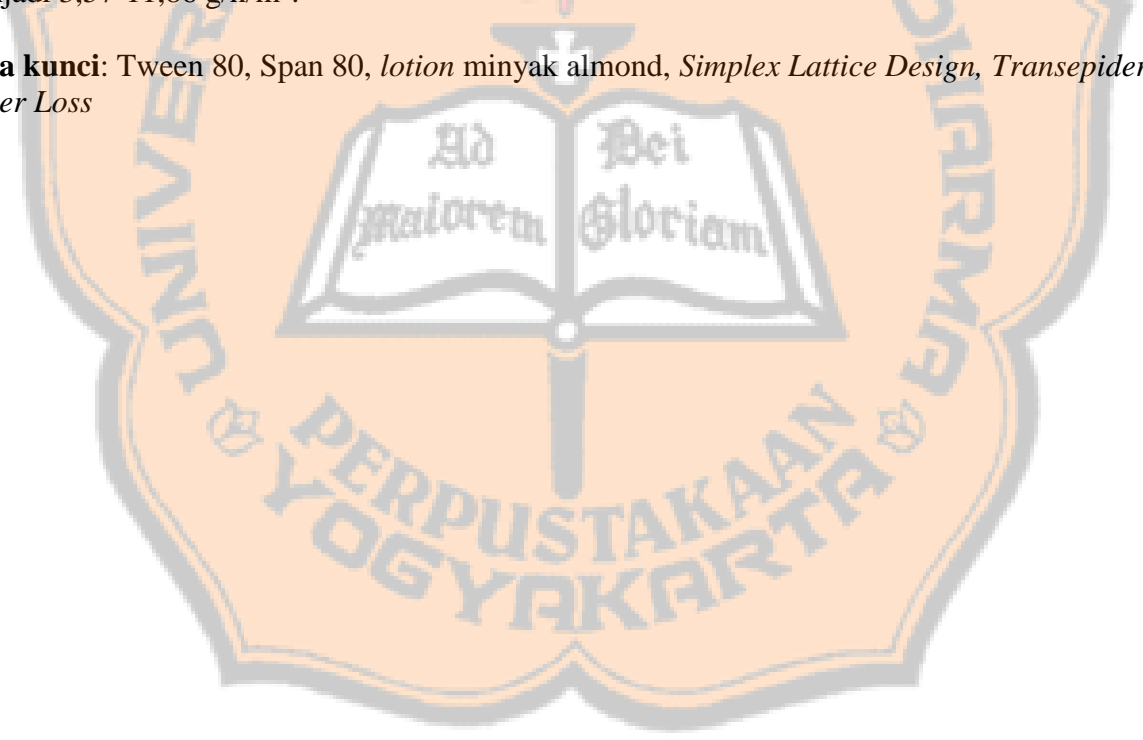


ABSTRAK

Emulsifying agent memiliki peran penting dalam menjaga stabilitas fisik pada sistem emulsi. Tujuan penelitian ini yaitu menemukan komposisi optimum Tween 80 dan Span 80 sebagai *emulsifying agent* dalam *lotion* minyak almond dengan pengolahan respon uji menggunakan metode *Simplex Lattice Design* (SLD) dan menguji kemampuan formula optimum *lotion* minyak almond untuk melembapkan kulit dengan mengukur *Transepidermal Water Loss* (TEWL) pada permukaan kulit. Penelitian ini merupakan penelitian eksperimental murni menggunakan metode SLD dua faktor yaitu Tween 80 dan Span 80. Optimasi dilakukan terhadap 5 formula dengan respon uji berupa viskositas, daya sebar, dan pergeseran viskositas.

Berdasarkan penelitian, diperoleh komposisi optimum Tween 80 dan Span 80 sebagai *emulsifying agent* dalam *lotion* minyak almond dengan pengolahan metode *Simplex Lattice Design* berada pada formula V dengan perbandingan Tween 80:Span 80 yaitu 1:0 dan nilai sebenarnya yaitu Tween 80 sebesar 8% b/b dan Span 80 sebesar 2% b/b. Formula optimum *lotion moisturizer* minyak almond terbukti mampu melembapkan kulit subjek secara signifikan ($p < 0,05$) dilihat dari menurunnya nilainya TEWL subjek dengan nilai awal antara 5,37-15,53 g/h/m² menjadi 3,57-11,86 g/h/m².

Kata kunci: Tween 80, Span 80, *lotion* minyak almond, *Simplex Lattice Design*, *Transepidermal Water Loss*



ABSTRACT

Emulsifying agent has an important role in maintaining physical stability of emulsion system. This study have two purposes. The first is to find optimum ratio of Tween 80 and Span 80 as emulsifying agent in almond oil lotion by using Simplex Lattice Design method. The second is to examine the ability of sweet almond oil lotion to moisturize skin by measuring Transepidermal Water Loss (TEWL) on the surface of the skin. This is a pure experimental study using Simplex Lattice Design with two factors: Tween 80 and Span 80. Optimization performed on five formulas with different ratio of Tween 80 and Span 80. Physical properties which have been observed are viscosity, spreadability, and shift of viscosity.

In this study, the optimum ratio of Tween 80 and Span 80 as emulsifying agent in lotion obtained on formula five with the ratio of Tween 80: Span 80 is 1:0. The real value of each component is 8%w/w for Tween 80 and 2%w/w for Span 80. The optimum formula of almond oil lotion proved to has moisturizing ability by reducing TEWL significantly ($p < 0,05$) with the score from 5,37-15,53 g/h/m^2 to 3,57-11,86 g/h/m^2 after lotion applied.

Keywords: Tween 80, Span 80, sweet almond oil lotion, Simplex Lattice Design, Transepidermal Water Loss

