ABSTRAK

FORMULASI SEDIAAN *SELF NANOEMULSIFIYING DRUG DELIVERY SYSTE*M EKSTRAK ETANOL DAUN KASTURI (*Mangifera casturi* kosterm.). (Oleh Munawarah; Pembimbing Aristha Novyra Putri dan Karunita Ika Astuti; 2021; 133 Halaman)

Daun Kasturi (*Mangifera casturi* Kosterm.) mengandung senyawa flavonoid dan steroid yang berperan sebagai antioksidan. Ekstrak Etanol 96% daun kasturi memiliki aktivitas sebagai afrodisiaka pada dosis 200 mg/ml. Penelitian ini bertujuan untuk mengetahui pengaruh tween 80 dan PEG 400 sebagai surfaktan dan kosurfaktan terhadap sifat karakteristik fisika kimia dari sediaan *Self nanoemulisifying drug delivery system* (pH, viskositas, bobot jenis, persen transmitan, *emulsification time*, ukuran partikel, PDI, zeta potensial) dan untuk mengetahui formula optimum dari sediaan SNEDDS menggunakan metode *Simplex Lattice Design.* Sediaan SNEDDS dibuat dengan metode emulsifikasi energi tinggi yaitu emulsifikasi ultrasonik, data kuantitatif dianalisis menggunakan ANOVA. Hasil menunjukkan keseluruhan formula berwarna hitam pekat, bau khas daun kasturi, rasa agak pahit. Sediaan formula I, III, IV dan V tidak mengalami pemisahan fase, pH sediaan 6,77-7,06, viskositas 134,0-322,5 mPa, bobot jenis 1,0640-1,1440 g/ml, % transmitan 36,5-85,6%, *emulsification time* media *aquadest* 7-33 detik, media AGF 5-48,6 detik, media AIF 7,6-38,6 detik, ukuran partikel 17,26- 186,26 nm, PDI 0,306-0,521, zeta potensial -21,73 sampai -56,96 mV. Hasil analisis menggunakan ANOVA pada metode *Simplex Lattice Design* nilai signifikasi pada keseluruhan hasil respon faktor yang didapat (*p-value* < 0,05) menunjukkan perbedaan komposisi tween 80 dan PEG 400 mempengaruhi sifat karakteristik sifat fisik sediaan SNEDDS. Formula optimum yang didapatkan berdasarkan metode *Simplex Lattce Design* menunjukkan konsentrasi tween 80 berada pada 45,916% dan PEG 400 24,084% dengan prediksi sifat fisik sediaan dengan nilai pH 6,923, viskositas 237,836 mPa, bobot jenis 1,074 g/ml, *emulsification time* media *aquadest* 17,016 detik, media AGF 9,989 detik, media AIF 19,290 detik, persen transmitan 80%, ukuran partikel 73,310 nm, PDI 0,420 dan zeta potensial -22,640 mV.

Kata kunci : Daun kasturi (*Mangifera casturi* Kosterm.); SNEDDS*; Simplex Lattice Design;* Formula Optimum

ABSTRACT

FORMULATION OF *SELF NANOEMULSIFIYING DRUG DELIVERY SYSTEM* ETHANOL EXTRACT KASTURI LEAVES (*Mangifera casturi* kosterm.). (By Munawarah; Advisor Aristha Novyra Putri and Karunita Ika Astuti; 2021; 133 Pages)

Kasturi leaves (*Mangifera casturi* Kosterm.) contain flavonoid and steroid compounds that act as antioxidants. Ethanol extract 96% kasturi leaves have activity as an aphrodisiac at a dose of 200 mg/kgBB. This study aims to determine the influence of tween 80 and PEG 400 as surfactants and cosurfactants on the characteristic properties of chemical physics of *self nanoemulisifying drug delivery system preparations* (pH, viscosity, density, percent transmit, emulsification time, particle size, PDI, zeta potential) and to know the optimum formula of SNEDDS preparations using Simplex Lattice Design method. SNEDDS preparations are made by high energy emulsification method i.e. ultrasonic emulsification, quantitative data is analyzed using ANOVA. The results showed the overall formula is solid black, the distinctive smell of kasturi leaves, the taste is rather bitter. Formula I, III, IV and V preparations do not undergo phase separation, preparation pH 6.77-7.06, viscosity 134.0-322.5 mPa, type weight 1.0640-1.1440 g/ml, % transmitant 36.5-85.6%, emulsification time media aquadest 7-33 seconds, AGF media 5-48.6 seconds, AIF media 7.6-38.6 seconds, particle size 17.26- 186.26 nm, PDI 0.306-0.521, zeta potential -21.73 to -56.96 mV. The results of the analysis using ANOVA in the *Simplex Lattice Design* method of signification value in the overall response result of the factors obtained (p-value < 0.05) showed differences in tween 80 composition and PEG 400 influenced the characteristic properties of the physical properties of SNEDDS preparations. The optimum formula obtained based on the Simplex Lattce Design method shows tween concentration 80 at 45.916% and PEG 400 24.084% with predicted physical properties of preparations with a pH value of 6,923, viscosity of 237,836 mPa, type weight 1,074 g/ml, emulsification time media aquadest 17,016 seconds, AGF media 9,989 seconds, AIF media 19,290 seconds, percent transmitant 80%, particle size 73,310 nm, PDI 0.420 and zeta potential -22,640 mV.

Keywords: Kasturi leaves (Mangifera casturi Kosterm.); SNEDDS; Simplex Lattice Design; Optimum Formula