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UJI AKTIVITAS ANTIOKSIDAN NANOEMULSI BUNGA TELANG (*Clitoria ternatea* L.)

ABSTRAK

Latar Belakang : Bunga telang (*Clitoria ternatea* L.) merupakan tanaman yang memiliki potensi sebagai antioksidan. Berdasarkan penelitian sebelumnya bunga telang mempunyai kandungan metabolit sekunder diantaranya yaitu, alkaloid, flavonoid, tanin, saponin, terpenoid, polifenol dan steroid. Bunga telang dapat dibuat sediaan nanoemulsi untuk mempermudah pemakaian. Tujuan dari penelitian untuk mengevaluasi karakteristik fisik pada sediaan nanoemulsi ekstrak bunga telang dan menganalisis aktivitas antioksidan nanoemulsi bunga telang dengan menggunakan metode DPPH.
Metode: Metode penelitian yang dilakukan adalah eksperimental. Bunga telang di ekstraksi dengan metode maserasi menggunakan pelarut etanol 96%. Skrining fitokimia dilakukan secara kualitatif dengan pengujian alkaloid, flavonoid, tanin, saponin. Sediaan nanoemulsi dilakukan pengujian karakteristik fisik pada parameter % transmitan, uji organoleptis, uji pH, pengukuran partikel (PSA) dan indeks polidispersitas (PDI). Pengujian aktivitas antioksidan menggunakan metode DPPH dengan parameter lC_{50}. Data dianalisis secara statistika menggunakan uji One Way Anova.
Hasil : Ekstrak bunga telang positif mengandung alkaloid, flavonoid, saponin, tanin. Hasil pengujian karakteristik fisik % transmitan nanoemulsi pada F1 dan F2 berturut-turut sebesar 97,155% dan 98,653%. Hasil uji organoleptis kedua formula berwarna hijau kekuningan bening, bau khas VCO, Hasil uji pH F1 sebesar 6,143 dan F2 sebesar 6,177. Hasil uji ukuran partikel F1 sebesar 57,696 nm dan F2 sebesar 70, 393 nm. Hasil uji Indeks Polidispersitas F1 sebesar 0,423 dan F2 sebesar 0,438. Aktivitas antioksidan pada ekstrak bunga telang memiliki IC_{50} sebesar 35,292 ppm sedangkan pada sediaan nanoemulsi (F1) 39,840 ppm dan (F2) 36,322 ppm. Kategori nilai lC_{50} sangat kuat. Tidak terdapat perbedaan signifikan tiap sampel aktivitas antioksidan.
Kesimpulan : Berdasarkan evaluasi karakteristik fisik dari sediaan nanoemulsi memenuhi syarat pada parameter parameter % transmitan, uji organoleptis, uji pH, pengukuran partikel (PSA) dan indeks polidispersitas (PDI). Pada hasil aktivitas antioksidan ekstrak dan sediaan nanoemulsi termasuk dalam golongan antioksidan sangat kuat.

Kata Kunci : Bunga telang, ekstrak, nanoemulsi, antioksidan

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TEST OF ANTIOXIDANT ACTIVITY OF TELANG FLOWER NANOEMULSION (*CLITORIA TERNATEA* L.)

ABSTRACT

Background : Telang flower (*Clitoria ternatea* L.) is a plant that has the potential as an antioxidant. Based on previous research, telang flowers contain secondary metabolites, namely, alkaloids, flavonoids, tannins, saponins, terpenoids, polyphenols and steroids. Telang flowers can be made into nanoemulsion preparations to make it easier to use. The purpose of the study was to evaluate the physical characteristics of the nanoemulsion preparation of telang flower extract and to be able to analyze the antioxidant activity of the nanoemulsion of telang flower using the DPPH method.

Methods: The research method conducted is experimental. Telang flowers are extracted by maceration method using 96% ethanol solvent. Phytochemical screening is carried out qualitatively by measuring alkaloids, flavonoids, tannins, saponins. Nanoemulsion preparations are tested for physical characteristics on the parameters of % transmittance, organoleptic test, pH test, particle measurement (PSA) and Polydispersity Index (PDI). Testing of antioxidant activity using the DPPH method with a parameter of lC_{50}. The data was statistically analyzed using the One Way Anova test.

Results: Telang flower extract positively contains alkaloids, flavonoids, saponins, tannins. The results of the test of the physical characteristics of the % transmitan of nanoemulsion in F1 and F2 were 97.155% and 98.653%, respectively. The results of the organoleptic test of the two formulas were clear yellowish-green, with a distinctive smell of coconut oil. The pH test results of F1 were 6.143 and F2 was 6.177. The results of the F1 particle size test were 57.696 nm and F2 was 70.393 nm and the F1 Polydispersity Index test was 0.423 and F2 was 0.438. The antioxidant activity in telang flower extract has an IC_{50} of 35.292 ppm while in nanoemulsion preparations (F1) 39.840 ppm and (F2) 36.322 ppm. The lC_{50} value category is very strong. There are significant differences in each formula.

Conclusion: The physical characteristics of the nanoemulsion preparations did not change the results that did not meet the requirements. The antioxidant activity of the extract and the nanoemulsion preparation are included in the group of very strong antioxidants.

Keywords : Telang flower, extract, nanoemulsion, antioxidant