

FORMULASI DAN EVALUASI SEDIAAN *MOISTURIZER GEL*
EKSTRAK ETANOL DAUN KACAPIRING (*Gardenia jasminoides* J. Ellis)
SERTA UJI ANTIOKSIDAN

ABSTRAK

Paparan radikal bebas dapat menyebabkan kerusakan pada kulit sehingga diperlukan penggunaan sediaan topikal yang mampu memberikan efek melembabkan sekaligus sebagai antioksidan. Daun kacapiring (*Gardenia jasminoides* J. Ellis) merupakan tanaman yang mengandung berbagai senyawa metabolit sekunder seperti flavonoid, tanin, saponin, dan fenolik yang berpotensi sebagai antioksidan alami. Penelitian ini bertujuan untuk formulasi ekstrak etanol daun kacapiring dalam bentuk sediaan moisturizer gel, mengevaluasi karakteristik fisik sediaan, serta menentukan aktivitas antioksidannya berdasarkan nilai IC_{50} menggunakan metode DPPH. Penelitian dilakukan melalui beberapa tahapan, yaitu preparasi sampel, ekstraksi menggunakan metode maserasi dengan pelarut etanol 70%, karakterisasi ekstrak, skrining fitokimia, uji aktivitas antioksidan ekstrak, formulasi moisturizer gel, evaluasi fisik sediaan, serta pengujian aktivitas antioksidan. Evaluasi sediaan meliputi uji organoleptik, homogenitas, pH, viskositas, daya sebar, dan stabilitas menggunakan metode cycling test. Skrining fitokimia menunjukkan adanya kandungan alkaloid, flavonoid, saponin, tanin, dan steroid pada ekstrak etanol daun kacapiring. Sediaan moisturizer gel yang dihasilkan memiliki bentuk semi padat, homogen, dan memenuhi persyaratan evaluasi fisik. Nilai pH semua formula berada dalam rentang pH kulit, yaitu 4,5-6,5, sedangkan daya sebar berada pada kisaran 5-7 cm. Ekstrak etanol daun kacapiring memiliki aktivitas antioksidan sangat kuat dengan nilai IC_{50} sebesar 33,194 $\mu\text{g/mL}$, sedangkan formula F3 menunjukkan aktivitas antioksidan terbaik diantara sediaan gel dengan nilai IC_{50} sebesar 73,2704 $\mu\text{g/mL}$ dan termasuk kategori kuat. Berdasarkan hasil penelitian, ekstrak etanol daun kacapiring dapat diformulasi menjadi sediaan moisturizer gel yang stabil dan memiliki aktivitas antioksidan.

Kata kunci: antioksidan, DPPH, *Gardenia jasminoides* J. Ellis, moisturizer gel, daun kacapiring.

FORMULATION AND EVALUATION OF *MOISTURIZER GEL*

PREPARATION OF ETHANOL EXTRACT OF GARDENIA LEAVES

(*Gardenia jasminoides* J. Ellis) AND ANTIOXIDANT ACTIVITY TEST

ABSTRACT

Exposure to free radicals can cause skin damage therefore, the use of topical preparations that provide both moisturizing and antioxidant effects is necessary. Gardenia leaves (*Gardenia jasminoides* J. Ellis) contain various secondary metabolites, including flavonoids, tannins, saponins, and phenolic compounds, which have potential as natural antioxidants. This study aimed to formulate the ethanolic extract of Gardenia leaves into a moisturizer gel dosage form, evaluate its physical characteristics, and determine its antioxidant activity based on the IC_{50} value using the DPPH method. The study was conducted through several stages, including sample preparation, extraction by maceration using 70% ethanol as the solvent, extract characterization, phytochemical screening, evaluation of extract activity, formulation of the moisturizer gel, physical evaluation of the preparation, and antioxidant activity testing. The evaluations included organoleptic examination, homogeneity, pH, viscosity, spreadability, and stability testing using the cycling test method. Phytochemical screening revealed the presence of alkaloids, flavonoids, saponins, tannins, and steroids in the ethanolic extract of Gardenia leaves. The resulting moisturizer gel exhibited a semi-solid form, homogeneous appearance, and fulfilled the required physical evaluation parameters. The pH values of all formulations were within the normal skin pH range (4.5-6.5), while the spreadability values ranged from 5 to 7 cm. The ethanolic extract of Gardenia leaves demonstrated very strong antioxidant activity, with an IC_{50} value of 33.194 $\mu\text{g/mL}$. Among the gel formulations, F3 showed the highest antioxidant activity, with an IC_{50} value of 73.2704 $\mu\text{g/mL}$, which falls into the strong antioxidant category. Based on the results of this study, the ethanolic extract of Gardenia leaves can be successfully formulated into a stable moisturizer gel with antioxidant activity.

Keywords: antioxidant, DPPH, *Gardenia jasminoides* J. Ellis, moisturizer gel, Gardenia leaves.