

ABSTRAK

UJI AKTIVITAS ANTIOKSIDAN EKSTRAK ETANOL DAUN MELATI (*Jasminum sambac* (L.) Aiton) DAN APLIKASINYA UNTUK SERUM WAJAH

Kulit wajah berperan penting dalam melindungi tubuh dari paparan sinar ultraviolet (UV) yang dapat memicu terjadinya penuaan dini. Serum wajah yang mengandung antioksidan digunakan untuk melindungi dan menutrisi kulit setelah terpapar sinar UV. Daun melati diketahui memiliki aktivitas antioksidan yang dapat menghambat laju stres oksidatif dan menangkal radikal bebas. Penelitian ini bertujuan untuk mengembangkan serum wajah berbasis ekstrak etanol daun melati serta mengetahui kandungan fitokimia, kadar total fenolik, dan aktivitas antioksidan ekstrakanya. Ekstraksi dilakukan dengan metode maserasi, dilanjutkan uji fitokimia, uji kadar fenolik total dengan metode Folin-Ciocalteu, dan uji aktivitas antioksidan dengan metode *Ferric Reducing Antioxidant Power* (FRAP). Serum diformulasikan dalam konsentrasi ekstrak 0; 0,5; 0,75; dan 1%. Kemudian dievaluasi mutu sediaan, uji iritasi, dan uji hedonik. Hasil penelitian menunjukkan bahwa senyawa yang terkandung dalam ekstrak etanol daun melati yaitu alkaloid, flavonoid, saponin, tanin, dan steroid. Ekstrak menunjukkan adanya kandungan senyawa aktif dengan kadar total fenolik 121,450 mg GAE/g dan nilai IC_{50} sebesar 32,63 $\mu\text{g/mL}$ yang termasuk kategori sangat kuat. Aktivitas antioksidan sediaan serum F0, F1, F2 dan F3 masing-masing menunjukkan nilai IC_{50} sebesar 195,93 $\mu\text{g/mL}$, 46,56 $\mu\text{g/mL}$, 44,15 $\mu\text{g/mL}$, dan 40,76 $\mu\text{g/mL}$. Formula F1, F2, dan F3 termasuk kategori sangat kuat, sedangkan F0 termasuk kategori lemah. Seluruh formulasi serum memenuhi persyaratan evaluasi mutu berdasarkan SNI 16-4399-1996, namun uji daya sebar belum memenuhi standar. Hasil uji iritasi menunjukkan seluruh formulasi serum tidak menyebabkan iritasi pada kulit. Berdasarkan uji hedonik, formulasi serum dengan konsentrasi 0,5% (F1) menjadi formula yang paling disukai panelis.

Kata kunci: Antioksidan; Daun melati; FRAP; Fenolik; Serum.

ABSTRACT

ANTIOXIDANT ACTIVITY TEST OF ETHANOL EXTRACT FROM JASMINE LEAVES (*Jasminum sambac* (L.) Aiton) AND ITS APPLICATION IN FACIAL SERUM

Facial skin plays an important role in protecting the body from exposure to ultraviolet (UV) rays that can trigger premature aging. Facial serums containing antioxidants are used to protect and nourish the skin after exposure to UV rays. Jasmine leaves are known to have antioxidant activity that can inhibit the rate of oxidative stress and ward off free radicals. This study aims to develop a facial serum based on jasmine leaf ethanol extract and determine the phytochemical content, total phenolic content, and antioxidant activity of the extract. Extraction was carried out using the maceration method, followed by phytochemical testing, total phenolic content testing using the Folin-Ciocalteu method, and antioxidant activity testing using the Ferric Reducing Antioxidant Power (FRAP) method. The serum was formulated in extract concentrations of 0; 0.5; 0.75; and 1%. Then, the quality of the preparation, irritation test, and hedonic test were evaluated. The results showed that the compounds contained in the jasmine leaf ethanol extract were alkaloids, flavonoids, saponins, tannins, and steroids. The extract showed the presence of active compounds with a total phenolic content of 121.450 mg GAE/g and an IC_{50} value of 32.63 $\mu\text{g/mL}$ which is categorized as very strong. The antioxidant activity of serum preparations F0, F1, F2 and F3 showed IC_{50} values of 195.93 $\mu\text{g/mL}$, 46.56 $\mu\text{g/mL}$, 44.15 $\mu\text{g/mL}$, and 40.76 $\mu\text{g/mL}$, respectively. Formulas F1, F2, and F3 are categorized as very strong, while F0 is categorized as weak. All serum formulations meet the quality evaluation requirements based on SNI 16-4399-1996, but the spreadability test has not met the standard. The results of the irritation test showed that all serum formulations did not cause skin irritation. Based on the hedonic test, the serum formulation with a concentration of 0.5% (F1) was the most preferred formula by the panelists.

Keywords: Antioxidant; FRAP; Jasmine leaves; Phenolic; Serum.