

ABSTRACT

STUDY OF ANTIBACTERIAL ACTIVITY OF *Staphylococcus aureus* AND *Eschericia coli*, CHEMICAL TEST OF TELANG FLOWER EXTRACT (*Clitoria ternatea L.*) AND HONEY ON PHYSICAL, SENSORY, ANTIOXIDANT, AND COST OF PRODUCTION FACIAL CARE CREAM

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*Butterfly pea flowers are herbal plants containing antioxidant and antibacterial compounds such as anthocyanins and flavonoids. Honey contains antioxidant and antibacterial enzymes. Butterfly pea flower extract and honey were tested for antibacterial activity of *Staphylococcus aureus* and *Eschericia coli*, then butterfly pea flower extract was analyzed for chemical compounds using GCMS, butterfly pea flower extract and honey became natural ingredients for making face cream, then the cream was tested for physical properties, sensory tests and antioxidant activity tests. The data obtained were statistically analyzed and then a further test of the Smallest Real Difference (BNT) was carried out at the level of 5% to determine the difference between treatments. The results showed that the antibacterial activity of *Staphylococcus aureus* was strongest at the level of concentration of a combination of 50% Butterfly pea flower extract and 50% honey with an inhibition zone of 11.4 mm, while the antibacterial activity of *Eschericia coli* was strongest at the level of honey concentration of 100%. GCMS analysis of butterfly pea flowers showed 3 major compounds in the form of hexadecanoic acid, oleic acid, and octadecanoic acid with a percentage area of 32.70%; 28,92%; and 15.42%. The best formulation combination of butterfly pea flower extract and honey facial care cream is Formulation 3 (F3) with the addition of 10% butterfly pea flower extract and 10% honey in a 10 g cream preparation. Formulation 3 cream has a pH of 5.7, a dispersion of 5.20 cm, a stickiness of 5.21 cm, a texture with a score of 3.47 (somewhat thick), an aroma with a score of 4.08 (somewhat distinctive), a color with a score of 4.21 (somewhat distinctive), and an overall acceptance with a score of 3.40 (somewhat liked). The antioxidant activity of Formulation 3 facial care cream with an IC₅₀ of 9.521 µg/mL. The cost of cream production per unit is IDR 13,482, and the selling price of cream per unit is IDR 20,233,-.*

Keywords: telang flower, honey, facial care cream, antibacterial, antioxidant

**KAJIAN AKTIVITAS ANTIBAKTERI *Staphylococcus aureus* DAN
Eschericia coli, UJI KIMIAWI EKSTRAK BUNGA TELANG
(*Clitoria ternatea* L.) DAN MADU TERHADAP MUTU FISIK, SENSORI,
ANTIOKSIDAN, DAN PENENTUAN HARGA POKOK PRODUKSI
KRIM PERAWATAN WAJAH**

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Bunga telang merupakan tanaman herbal mengandung senyawa antioksidan dan antibakteri seperti antosianin dan flavonoid. Madu memiliki kandungan enzim bersifat antioksidan dan antibakteri. Ekstrak bunga telang dan madu diuji aktivitas antibakteri *Staphylococcus aureus* dan *Eschericia coli*, kemudian ekstrak bunga telang dianalisis senyawa kimia menggunakan GCMS, ekstrak bunga telang dan madu menjadi bahan alami pembuatan krim wajah kemudian krim diuji sifat fisik, uji sensori dan uji aktivitas antioksidan. Data yang diperoleh dianalisis secara statistik kemudian dilakukan uji lanjut Beda Nyata Terkecil (BNT) pada taraf 5% untuk mengetahui perbedaan antar perlakuan. Hasil penelitian menunjukkan bahwa aktivitas antibakteri *Staphylococcus aureus* terkuat pada taraf konsentrasi kombinasi ekstrak bunga telang 50% dan madu 50% dengan zona hambat sebesar 11,4 mm, sedangkan aktivitas antibakteri *Eschericia coli* terkuat pada taraf konsentrasi madu 100%. Analisis GCMS bunga telang menunjukkan 3 senyawa mayor berupa asam heksadekanoat, asam oleat, dan asam oktadekanoat dengan persen luas area 32,70%; 28,92%; dan 15,42%. Krim perawatan wajah kombinasi ekstrak bunga telang dan madu formulasi terbaik adalah Formulasi 3 (F3) dengan penambahan ekstrak bunga telang 10% dan madu 10% dalam sediaan krim 10 g. Krim formulasi 3 memiliki pH 5,7, daya sebar sebesar 5,20 cm, daya lekat sebesar 5,21 cm, tekstur dengan skor 3,47 (agak kental), aroma dengan skor 4,08 (agak khas), warna dengan skor 4,21 (agak khas), dan penerimaan keseluruhan dengan skor 3,40 (agak suka). Aktivitas antioksidan krim perawatan wajah Formulasi 3 dengan IC₅₀ sebesar 9,521 µg/mL. Harga pokok produksi krim per unit adalah Rp 13.482, dan harga jual krim per unit adalah Rp 20.233,-.

Kata kunci : bunga telang, madu, krim perawatan wajah, antibakteri, antioksidan