

FORMULASI DAN UJI AKTIVITAS PENANGKAPAN RADIKAL BEBAS DPPH PADA LOTION EKSTRAK DAUN KERSEN (*Muntingia calabura* L.)

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INTISARI

Latar Belakang: Antioksidan bertugas sebagai penghalang penuaan dini yang dapat mengikat radikal bebas dan molekul yang sangat reaktif, sehingga kerusakan sel akan dihambat. Daun kersen (*Muntingia calabura* L.) memiliki aktivitas antioksidan karena mengandung flavonoid. Dipilihnya Sediaan lotion untuk mencegah terjadinya penuaan dini.

Tujuan Penelitian: Mengetahui pengaruh variasi konsentrasi ekstrak daun kersen terhadap sifat fisik lotion dan aktivitas penangkapan radikal bebas DPPH.

Metode Penelitian: Sampel daun kersen diekstraksi menggunakan etanol 70%. Lotion dibuat dengan konsentrasi ekstrak daun kersen 0,3%; 0,6% dan 0,9%. Evaluasi sifat fisik sediaan lotion dilakukan untuk melihat adanya pengaruh variasi konsentrasi ekstrak. Aktivitas antioksidan diuji menggunakan metode penangkapan radikal bebas DPPH

Hasil Penelitian: Nilai IC₅₀ kuersetin dan ekstrak daun kersen adalah sebesar 1,98±0,11 ppm dan 3,25±0,54 ppm. Hasil nilai IC₅₀ lotion F1 (0,3%) , F2 (0,6%) dan F3 (0,9 %) secara berturut-turut yaitu 232,00±2,89 ppm, 213,56±2,03 ppm dan 134,95±0,55 ppm. Kenaikan konsentrasi ekstrak menyebabkan kenaikan intensitas warna dari ketiga lotion. Semua sediaan memiliki tekstur semi padat dan berbau khas daun kersen. Hasil daya lekat lotion berturut-turut yaitu 4,32±0,08 detik; 4,66±0,13 detik dan 5,23±0,17 detik. Hasil pH lotion berturut-turut yaitu 7,1±0,1; 6,7±0,1 dan 6,3±0,1. Hasil daya sebar lotion berturut-turut yaitu 6,6±0,17 cm; 6,63±0,05 cm dan 6,73±0,05 cm. Hasil viskositas lotion berturut-turut yaitu 12333±1,266 cP; 12133±1,305 cP dan 11800±1,479 cP.

Kesimpulan: Peningkatan konsentrasi ekstrak daun kersen dapat menaikkan daya lekat lotion, menurunkan nilai pH lotion dan meningkatkan aktivitas penangkapan radikal bebas DPPH.

Kata Kunci: Antioksidan, *Muntingia calabura* L, Lotion

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FORMULATION AND TEST ACTIVITY OF DPPH-FREE RADICAL SCAVENGING IN LOTION OF EXTRACT *Muntingia calabura* L.

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ABSTRACT

Background: Antioxidants act as barriers to premature aging which can bind free radicals and highly reactive molecules, so that cell damage is inhibited. *Muntingia calabura* L, have antioxidant compounds that contain flavonoids. Lotion preparations were chosen to prevent premature aging

Objective: To determine the effect of varying concentrations of *Muntingia carabura* L, extract on DPPH free radical scavenging activity and the physical properties of lotion.

Method: *Muntingia calabura* leaves were extracted using 70% ethanol. Lotion is made with extract concentration of 0,3%; 0,6% and 0,9%. Evaluation of the physical properties of the lotion preparation were tested to see the effect of variations in extract concentration. Antioxidant activity was tested using the DPPH free radical scavenging method

Results: The IC₅₀ value of quercetin and cherry leaf 1.98 ± 0.11 ppm and 13.25 ± 0.54 ppm. The results of the IC₅₀ F1 (0.3%) F2 (0.6%) and F3(0.9%), respectively were 232.00 ± 2.89 ppm, 213.56 ± 2.03 ppm and 134.95 ± 0.55 ppm. The increase in extract concentration cause an increase in the color intensity of the three lotions. All preparations have a semi-solid, texture and have a distinctive smell of cherry leaves. The results of lotion adhesion were respectively 4.32 ± 0.08 seconds, 4.66 ± 0.13 seconds and 5.23 ± 0.17 seconds. The pH results of the lotion were 7.1 ± 0.1 ; 6.7 ± 0.1 and 6.3 ± 0.1 . The results of the spreadability of the lotion were 6.6 ± 0.17 cm, 6.63 ± 0.05 cm and 6.73 ± 0.05 cm, respectively. The viscosity results of the lotion were 12333 ± 1.266 cP, 12133 ± 1.305 cP and 11800 ± 1.479 cP.

Conclusion: Increasing the concentration of cherry leaf extract can increase the adhesive power of the lotion, reduce the pH value of the lotion and increase the DPPH free radical scavenging activity.

Keywords: Antioxidant, *Muntingia calabura* L, Lotion.

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