

**FAKULTAS KEDOKTERAN DAN ILMU KESEHATAN
UNIVERSITAS MUHAMMADIYAH MAKASSAR**

**“FORMULATION OF SERUM PREPARATION FROM ETHYL ACETATE
FRACTION OF (*Moringa oleifera*) LEAVES AND ANTIOXIDANT
ACTIVITY TEST WITH UV-VIS SPECTROPHOTOMETER”**

ABSTRAK

Latar Belakang: Daun kelor (*Moringa oleifera*) mengandung flavonoid yang berperan sebagai antioksidan untuk menangkal radikal bebas penyebab kerusakan sel dan penuaan kulit.

Tujuan penelitian: Penelitian ini bertujuan memformulasikan sediaan serum dari fraksi etil asetat daun kelor serta mengevaluasi aktivitas antioksidannya menggunakan metode DPPH dengan spektrofotometer UV-Vis.

Metode penelitian: Metode penelitian ini bersifat eksperimental laboratorium dengan uji kuantitatif yaitu untuk melakukan uji stabilitas sediaan serum fraksi daun kelor (*Moringa oleifera*) dan uji aktivitas antioksidan.

Hasil : hasil evaluasi menunjukkan sediaan serum memiliki karakteristik fisik yang baik, homogen, viskositas sesuai, daya sebar baik, serta pH berada dalam rentang normal kulit (4,5–7), meskipun secara uji statistik nilai pH kurang stabil. Uji aktivitas antioksidan menunjukkan serum fraksi etil asetat daun kelor memiliki aktivitas sedang dengan nilai $IC_{50} > 150 \mu\text{g/mL}$.

Kesimpulan: Formula serum stabil secara fisik dan memenuhi kriteria sediaan topikal, namun aktivitas antioksidannya masih kategori sedang sehingga diperlukan optimasi atau pemilihan fraksi lain untuk meningkatkan efektivitasnya.

Kata kunci: (*Moringa oleifera*), fraksi etil asetat, serum, antioksidan, DPPH, UV-Vis

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ABSTRACT

Background: *Moringa oleifera* leaves contain flavonoids that act as antioxidants to ward off free radicals that cause cell damage and skin aging.

Research Objective: This study aimed to formulate a serum preparation from the ethyl acetate fraction of *Moringa* leaves and evaluate its antioxidant activity using the DPPH method with a UV-Vis spectrophotometer.

Research Method: This research method was an experimental laboratory study with quantitative tests, namely to test the stability of the *Moringa oleifera* leaf fraction serum preparation and to test its antioxidant activity.

Results: The evaluation results showed that the serum preparation had good physical characteristics, was homogeneous, had appropriate viscosity, good spreadability, and a pH within the normal skin range (4.5–7), although statistically the pH value was less stable. The antioxidant activity test showed that the ethyl acetate fraction serum from *Moringa* leaves had moderate activity with an IC₅₀ value of >150 µg/mL.

Conclusion: The serum formula is physically stable and meets the criteria for a topical preparation. However, its antioxidant activity is still moderate, requiring optimization or selection of other fractions to increase its effectiveness.

Keywords: (*Moringa oleifera*), ethyl acetate fraction, serum, antioxidant, DPPH, UV-Vis