

STABILITAS FISIKA-KIMIA SEDIAAN KRIM DAN GEL EKSTRAK KENTAL DAUN KELOR (*Moringa oleifera*)

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ABSTRAK

Penelitian ini dilakukan untuk mengetahui dan menganalisa stabilitas fisika (organoleptis, tipe emulsi, bobot jenis, ukuran partikel, ukuran droplet daya sebar, viskositas, sifat alir) dan kimia (pH), dan aktivitas antioksidan dari sediaan krim dan gel dengan ekstrak kental daun kelor (*Moringa oleifera*) sebagai bahan aktif. Formula sediaan yang dibuat yaitu krim basis, krim ekstrak kental daun kelor 3%, gel basis, dan gel ekstrak kental daun kelor 3%. Pengamatan dilakukan selama 28 hari. Hasil pengamatan bobot jenis daya sebar, viskositas, serta pH dianalisis dengan metode analisis statistik Anova *one-way* dengan nilai signifikansi 0, lebih kecil dari $\alpha = 0,01$, sehingga hipotesis ditolak. Hasil pengamatan organoleptis, tipe emulsi, ukuran partikel, ukuran droplet dianalisis secara deskriptif. Aktivitas antioksidan dari krim basis, krim ekstrak kental daun kelor, gel basis, dan gel ekstrak kental daun kelor ditunjukkan dengan nilai % peredaman radikal bebas berturut-turut sebesar 45,94%, 93,19%, 40,83% dan 90,36%. Kesimpulan hasil analisa dari keempat formula tersebut menunjukkan ketidakstabilan baik secara fisika dan kimia, serta aktivitas antioksidan pada sediaan gel ekstrak kental daun kelor lebih tinggi dibandingkan dengan krim ekstrak kental daun kelor.

Kata kunci: krim, gel, *Moringa oleifera*, antioksidan, stabilitas

PHYSICAL AND CHEMICAL STABILITY OF CREAM AND GEL FORMULATION CONTAINING *Moringa oleifera* LEAVES EXTRACT

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ABSTRACT

The aim of the research is to observe the physical stability (organoleptic, emulsion type, density, particles size, droplets size, density, spreadability, viscosity, flow properties), chemical stability (pH), and antioxidant activity of cream and gel containing Moringa oleifera leaves extract as the active pharmaceutical ingredient (API). There are 4 formula in this research, including cream base, Moringa oleifera leaves extract 3% cream, gel base, and Moringa oleifera leaves extract 3% gel. Observation was carried out in 28 days. The results of density, spreadability, viscosity, and pH was analyzed using Anova one-way, showed that the significance values are 0, smaller than $\alpha = 0,01$, so the hypothesis was denied. The results of organoleptic, particles size, droplets size, was observed descriptively. Antioxidant activity of cream base, Moringa oleifera leaves extract cream, gel base, and Moringa oleifera leaves extract gel showed by %RSA (Radical Scavenging activity), which values are 45,94%, 93,19%, 40,83% dan 90,36%. The final conclusion are all of the formulas was not stable physically and chemically, also the antioxidant activity of Moringa oleifera leaves extract gel is higher than Moringa oleifera leaves extract cream.

Keywords: cream, gel, *Moringa oleifera*, antioxidant, stability