

PENGARUH KONDISI PENYIMPANAN TERHADAP STABILITAS SIFAT FISIK DAN AKTIVITAS TABIR SURYA KRIM W/O EKSTRAK DAUN KERSEN

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INTISARI

Latar Belakang: Indonesia sebagai negara tropis, menghadapi paparan sinar UV tinggi yang merusak kulit. Krim tabir surya efektif melindungi kulit, dan daun kersen (*Muntingia calabura* L.) berpotensi sebagai bahan aktif karena kandungan flavonoid dan fenolik. Stabilitas sediaan krim sangat penting, untuk memastikan efektivitas krim selama masa penyimpanan.

Tujuan Penelitian: Penelitian ini bertujuan menguji stabilitas sediaan krim ekstrak daun kersen dan mengevaluasi pengaruh suhu serta waktu penyimpanan terhadap sifat fisik dan aktivitas tabir surya krim.

Metode Penelitian: Krim ekstrak daun kersen dibuat dan disimpan pada suhu dingin ($4\pm 2^{\circ}\text{C}$), ruang ($25\pm 2^{\circ}\text{C}$), dan tinggi ($40\pm 2^{\circ}\text{C}$ RH 75%) selama 2 bulan. Evaluasi meliputi organoleptis, viskositas, pH, dan aktivitas tabir surya (SPF, %Te, %Tp). Data dianalisis secara statistik.

Hasil Penelitian: Ekstrak daun kersen mengandung flavonoid, saponin, fenol, alkaloid, dan steroid. Semua krim memenuhi syarat viskositas dan pH. Suhu penyimpanan memengaruhi stabilitas nilai viskositas, pH, SPF dan %Tp krim. Waktu penyimpanan mempengaruhi stabilitas nilai viskositas, pH, dan SPF krim. Penyimpanan pada suhu 4°C menunjukkan stabilitas paling baik.

Kesimpulan: kondisi penyimpanan signifikan memengaruhi stabilitas sifat fisik (viskositas, pH) dan aktivitas tabir surya (SPF, %Tp) krim ekstrak daun kersen. Kondisi penyimpanan pada suhu 4°C lebih optimal daripada suhu 25°C dan 40°C .

Kata Kunci: krim tabir surya, *Muntingia calabura* L., stabilitas, suhu penyimpanan, waktu penyimpanan.

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**THE EFFECT OF STORAGE CONDITIONS ON THE STABILITY OF
THE PHYSICAL PROPERTIES AND SUNSCREEN ACTIVITY OF A W/O
CREAM CONTAINING *Muntingia calabura* L. LEAVES EXTRACT**

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ABSTRACT

Background: Indonesia, a tropical country, faces high UV exposure causing skin damage. Sunscreen creams effectively protect skin, and *Muntingia calabura* L. leaves show potential as active ingredients due to their flavonoid and phenolic content. Cream stability is crucial, to ensure the effectiveness during storage.

Objective: This study aimed to assess the stability of *M. calabura* leaves extract cream preparations and evaluate the impact of temperature and storage time on the cream's physical properties and sunscreen activity.

Method: *M. calabura* leaves extract cream was prepared and stored at cold ($4\pm 2^{\circ}\text{C}$), room ($25\pm 2^{\circ}\text{C}$), and high ($40\pm 2^{\circ}\text{C}$ RH 75%) temperatures over 2 months. Evaluations included organoleptic properties, viscosity, pH, and sunscreen activity (SPF, %Te, %Tp). Statistical analysis was performed on the data.

Result: *M. calabura* leaves extract contains flavonoids, saponins, phenols, alkaloid, and steroids. All creams met viscosity and pH requirements. Storage temperature significantly affected viscosity, pH, SPF, and %Tp. Storage time affected viscosity, pH and SPF. storage at 4°C showed the best stability.

Conclusion: Storage conditions significantly influenced the stability of the physical properties (viscosity, pH) and sunscreen activity (SPF, %Tp) of *M. calabura* leaves extract cream. Conditions at 4°C were more optimal than at 25°C and 40°C .

Keywords: Sunscreen cream, *M. calabura* leaves, stability, storage temperature, storage time.

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