

FORMULATION AND EVALUATION OF THE PHYSICAL PROPERTIES OF ANTI-ACNE CREAM CONTAINING METHANOL EXTRACT OF ASHITABA HERB (*ANGELICA KEISKEI*)

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INTRODUCTION

Ashitaba (*Angelica keiskei*) is a herb native to Japan and widely found in Sembalun, East Lombok, Indonesia. It contains bioactive compounds such as tannins, alkaloids, terpenoids, flavonoids, and phenolics, which exhibit antioxidant, antibacterial, and anti-inflammatory activities. These properties make Ashitaba a potential natural ingredient for acne treatment. Previous studies have shown that methanol extracts of Ashitaba effectively inhibit *Staphylococcus epidermidis* and *Staphylococcus aureus*, and demonstrate strong antioxidant and anti-inflammatory effects.

While Ashitaba extract gels have shown promising anti-acne activity, cream formulations offer advantages such as better delivery of active compounds, enhanced moisture retention, and longer skin hydration due to their emollient and occlusive properties. Therefore, this study aims to formulate and evaluate the physical properties of an anti-acne cream containing methanol extract of Ashitaba herb.

METHODOLOGY



Evaluation of Physical Properties

Parameter	Method	Result Criteria
Organoleptic	Visual observation	Color, odor, texture
Homogeneity	Slide test	Smooth, no coarse
pH	pH meter	4.5–6.5
Viscosity	Brookfield viscometer	2,000–50,000 cP
Spreadability	Glass plate method	5–7 cm
Adhesion	1 kg load test	≥4 seconds
Cream Type	Methylene blue test	O/W

RESULT & DISCUSSION

Yield of Ashitaba Herb Simplisia and 80% Methanol Extract.

Variables	Initial weight	Final weight	Yield
Simplisia	18 Kg	2,8 Kg	15,50%
Ekstrak	300 g	30,486 g	10,16%

This study used fresh Ashitaba herbs collected from Sembalun Village, located at an altitude of 1,250 meters above sea level with an average temperature of 15–20°C (Hidayati et al., 2022; Kholis et al., 2022). A total of 18 kg of samples were processed into 2.8 kg of simplisia (yield 15.5%). The simplisia were then dechlorophyllized using n-hexane and extracted with 80% methanol by sonication to obtain a concentrated extract.

Hasil Evaluasi Sediaan Krim

Evaluation	Results
Organoleptis	Thick consistency, green color and
Homogeneity	Homogeneous
pH	6,29
viscosity	37,050 cp
spreadability	5,23 cm
sticky power	4,59 detik
Cream Type	O/W



The 3% methanolic extract of Ashitaba, which has been proven to inhibit the growth of *Staphylococcus aureus* (Hidayati et al., 2023), was formulated into an oil-in-water (O/W) type anti-acne cream. The oil phase consisted of EVOO, Span 80, lanolin, cetyl alcohol, stearic acid, and propyl paraben, while the aqueous phase contained Tween 80, methyl paraben, propylene glycol, and distilled water. Tween 80 and Span 80 served as emulsifiers (7.14% and 2.86%, respectively), whereas stearic acid and cetyl alcohol enhanced the texture and stability of the formulation. Methyl and propyl parabens were used as preservatives, propylene glycol as a humectant, lanolin as an emollient, and EVOO as a natural antioxidant and moisturizer. Evaluation results showed that the cream was light green, had a characteristic aroma, homogeneous texture, pH of 6.29, viscosity of 37,050 cp, spreadability of 5.23 cm, and adhesiveness of 4.59 seconds, all meeting SNI standards. The methylene blue test confirmed that the cream was of the O/W type, indicating good stability and effectiveness as a topical preparation.

CONCLUSION

Based on the results of this study, it can be concluded that the Ashitaba herb extract cream meets the requirements of a good cream formulation. The physical evaluation showed that the cream had a thick consistency, green color, and characteristic herbal aroma. The preparation was homogeneous and classified as an oil-in-water (O/W) type cream with a pH of 6.29, viscosity of 37,050 cp, spreadability of 5.23 cm, and adhesion time of 4.59 seconds.

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