

CHAPTER I INTRODUCTION

1.1 Background

The skin is the outermost part of the organ that covers the entire surface of the body of living things and functions to protect from external influences. Basically, each individual has a different skin condition which is influenced by various factors such as lifestyle habits and hormones. There are many skin types that must be given special care, namely dry, oily, normal, acne-prone, and combination¹.

Dry skin is a common problem that can be experienced by anyone for some people, dry skin conditions can cause discomfort and can even trigger the development of diseases such as atopic dermatitis which is characterized by inflammation of the skin. There are many factors that can cause dry skin including climatic conditions, genetic factors, and the surrounding environment. One of the effective solutions to overcome dry skin problems is to use moisturizing products that are specifically designed to hydrate and maintain skin moisture optimally².

Cream is a semi-solid form of preparation that contains one or more drug ingredients dissolved or dispersed in a dissolved ingredient or dispersed in a suitable base ingredient. Creams have become a very basic necessity for women today³. In addition, cream preparations have several advantages, including having great aesthetic heat because of its non-greasy and non-sticky nature, having a more even spread so that it can negate into the skin faster⁴.

Juwet fruit (*Syzygium cumini* L) is a plant that has antioxidants or that is like benefits. Based on the description above, research was carried out on juwet fruit extract (*Syzygium cumini* L) which will be formulated or made into preparations in

¹ Tarra Ainul Mardhiyah & Linda Rosalina, 2023 Feasibility of Facial Toner of Green Tea Leaf Extract (*Camellia Sinensis*) and Gotu Gong Leaf (*Centella Asiatica*) for Acne-prone Facial Skin, *Journal of Education and Science*.

² Fahma Shufyani, Muhammad Andry, Rida Evalina 2023 Tarigan Formulation of Scrub Cream Preparation from Carrot Juice (*Daucus carota* L.) As Antiaging *Journal Of Phamaceutical And Sciences*.

³ Apriliani, E., 2016, Analysis of the Role of Media in Influencing Adolescent Women in Their 20s in Using Korean Style Make-up in Dki Jakarta, 56–57.

⁴ Putri Rahayu, Eva Monica, Fibe Yulinda Cesa 2023 Formulation and Evaluation of Moisturizing and Antioxidant Cream Preparations Combination of Mangosteen Fruit Peel Extract (*Garcinia Mangostana* L.) And aloe vera (*Aloe Vera* L.) *Scientific Journal of Science & Technology*.

the form of topical preparations, namely face cream preparations and physical evaluation of the cream preparations was carried out.

The quality of the active compounds contained in the juwet plant (*Syzygium cumini* L) can be influenced by two factors. Internal factors affect the age and genes of the plant, while external factors affect the state of the plant such as: land conditions, climate, height of the growing place⁵. In addition, antibacterial compounds that can be produced by juwet plants (*syzygium cumini* L) can be aided by the production of endophytic molds. Endophytes are beneficial microorganisms that can live by symbiosis in the host growing tissue⁶. The use of juwet plants has not reached its optimal potential, so the cultivation of this plant is declining⁷.

Through this study, a formulation and physical quality evaluation test of face cream based on juwet fruit extract will be carried out to determine its effectiveness in overcoming dry skin problems. The physical quality evaluation test includes homogeneity, pH, spreadability, adhesion, cream type and viscosity, which aims to ensure that the formulated cream is of good quality and safe to use on the skin. Thus, this research is expected to produce innovative products that are natural, effective, and beneficial for skin health.

1.2 Problem Formulation

The formulation of the problem in this study is:

1. What are the results of the phytochemical screening test on juwet fruit extract (*Syzygium cumini* L)?
2. What are the results of the physical quality evaluation of the formulation of juwet fruit extract facial cream (*Syzygium cumini* L)?

1.3 Research Objectives

The objectives of this study are:

1. To find out the results of phytochemical screening tests on juwet fruit extract (*Syzygium cumini* L).

⁵ Himyatul Hidayah, Winda Aryani, Malvian Noordiansyah, Annis Fathurrohman Meikahestina, Putri Andini Widyaningsih 2022 "The Potential of Jamblang Plant (*Syzygium Cumini* L) as an Anti-Bacterial Based on Active Compound Content: Literature Review Article" *Journal of Education and Counseling* Volume 2 Number 6 of 2022

⁶ Ibid.

⁷ Manoj Kumar et al., "Juwet (*Syzygium cumini* L) Seed Bioactives And Its Biological Activities: A Review" *Food Bioscience* 50 (2022)

2. To find out the results of the physical quality evaluation of the formulation of juwet fruit exected face cream (*Syzygium cumini* L).

1.4 Research Benefits

1. Theoretical Benefits

The results of this study can be used as reference material for further research on the benefits of bauh juwet (*Syzygium cumini* L).

2. Practical Benefits for

The results of this research are expected to add to the treasures of science and increase the reader's insight, especially in the community that juwet fruit (*Syzygium cumini* L) has good benefits.

1.5 Research Authenticity

Research on the manufacture of creams has been carried out by several researchers as seen in table 1.

Table 1. Research Authenticity

Research Title	Research methods	Variable	Result	Research differences
Formulation of antioxidant cream preparation of ethanolic extract of avocado leaves (<i>Persea americana</i> Mill). ⁸	Experimental	Dependent: The cream formulation uses avocado leaves. Intro: Extract avocado leaves with a concentration of 0.02%	The higher the concentration of tween 80 and the lower the concentration of span 80, the higher the viscosity and adhesion value, while the lower the dispersion value. Formula 3 with a ratio of emulsifier concentration	Dependent: The formulation of the face cream uses juwet fruit extract. Independent: Juwet fruit extracts with concentrations of 2%, 3% and 4%.

⁸ In Mailana, Nuryanti, Harmoko "Formulation of Ethnolic Antioxidant Cream Preparation of Avocado Leaf *Extract (Persea Americana Mill)*", 2016, Journal of Acta Pharmaciae, Indonesia, September 2016,4(2)7; ISSN 2337-8433.

Research Title	Research methods	Variable	Result	Research differences
			of tween 80 and span 80 of 95%:5% is the best formula for antioxidant cream preparations of ethanolic extract of avocado leaves with a viscosity value between 25,220-43,960 cps, dispersion between 4.9-5.5 cm, adhesion between 1.41-4.65 seconds and a percentage of damping to DPPH of 69.33%.	
Formulation, Physical Properties, and Effectiveness Test of Sunscreen Lotion with Juwet Fruit Extract (<i>Syzygium</i>	Experimental	Dependent: Sunscreen Independent: Using 2.5%, 5%, and 10% juwet fruit extracts.	The resulting lotion formula on average has good physical characteristics with a homogeneous appearance with a pH of 6-7 and a viscosity of 5460-4840 cP. The dispersion and adhesion have not met	Dependent: Formulation of face creams. Independent: Using 2%, 3% and 4% juwet fruit extracts.

Research Title	Research methods	Variable	Result	Research differences
<i>cumini</i> (L.) Skeels). ⁹			the requirements. The SPF value of juwet fruit extract decreases after making a lotion preparation, which means that it cannot protect the skin and needs to be refined in its manufacture.	
Preparation of juice gel preparation (Syzygium <i>cumini</i> (L) carbopol 940 as a gelling agent ¹⁰ .	Experimental	Dependent: Gel formulation Intro: From the fruit of juwet (Syzygium <i>cumini</i> L).	Positive Duvet fruit juice (Syzygium <i>cumini</i> L) contains flavonoid compounds, polyphenols, and anthocyanins based on phytochemical screening tests. The formula of Duwet I, II, and III fruit	Dependent: Formulation of face creams. Independent: variation in the concentration of juwet fruit (Syzygium <i>cumini</i> L).

⁹ Zainur Rahman Hakim, Puteri Khazizah Isnaini, Erza Genatrika 2020 "Formulation, Evaluation of Physical Properties, and Effectiveness Test of Sunscreen Lotion of Jamblang Fruit Extract (Syzygium *cumini* (L.) Skeels)" *Indonesian Pharmacy Journal* Vol. 7no. 01 July 2020:225-245

¹⁰ Yohanes Juliantoni1, Wahida Hajrin, Windah Anugrah Subaidah "Formulation of Juice Gel Preparation for Duwet Fruit Juice (Syzygium *Cumini*) with Karbopol 940 Base as a Gelling Agent" *Sasambo Journal of Pharmacy* 2020.

Research Title	Research methods	Variable	Result	Research differences
			juice gel preparations have met the requirements of pH, homogeneity, and dispersibility. The higher the 70% ethanol concentration in the gel formula will increase the pH value and dispersibility.	