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Formulation of a Lip Cream Containing Asoka Flower Extract (Ixora Javanica (Blume) DC.) as a Natural Colorant

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Abstract
Lip cream is a lip coloring product in the form of a semi-solid or cream. The composition of lip cream is similar to decorative cosmetics in general, which consists of active ingredients in the form of dyes in various basic ingredients or bases. This study aims to develop a formula for herbal lip cream preparations from asoka flower extract (Ixora javanica (Blume) DC.) and provide information about evaluation tests in the form of lip cream preparations. This research began with asoka flower extract using the maceration method with 96% ethanol solvent. The extract is made into lip cream preparations with the formulas 1,2 and 3, using the melting and mixing method. The lip cream produced is evaluated and tested for stability which includes organoleptic observation, homogeneity test, pH test, dispersion test, adhesion test, application power test, and determination of the type of lip cream. The results of the physical evaluation showed that the F0, F1, F2 and F3 lip creams met the requirements for physical stability. Based on the results of the study, it can be concluded that asoka flower extract can be formulated into lip cream preparations.

INTRODUCTION

This diversity of lip color formulations is highly favored, especially among women, due to its ability to provide a more uniform hue, its resistance to damage unlike lipstick formulations, and its ability to provide long-lasting lip moisture with a wide range of attractive color options (Jessica et al., 2018). *Lip cream* is a lip pigmentation product that is semi-solid or cream-like. The composition of *lip cream* is the same as decorative cosmetics in general, which consists of active components in the form of dyes mixed with various basic ingredients or bases. (Butler, 2013). The criteria for *preparing* high-quality lip cream include being able to coat the lips and stick effectively, as well as not sticking to the skin of the lips. In addition, *lip cream* must be able to maintain its effectiveness for a long time, not cause irritation or allergies to the lips, moisturize the lips, and provide an even and attractive color (Latifah & Iswari, 2013).

Adverse reactions such as allergies, nausea, dermatitis, and dry skin can be caused by synthetic dyes. Furthermore, it can also result in lip discoloration and promote the development of lip cancer. The use of artificial pigments has the potential to have a negative impact on health and the environment. The inclusion of artificial pigments such as *Rhodamine B*, *Methanyl Yellow*, and Amaranth in food and beverages has significant health risks as it can cause cancer as well as kidney and liver disorders (Ghongade et al., 2021). Amaranth 12.5 addition; 25; and 50mg/ml indicate a positive reaction result on the *Somatic Mutation and Recombination Test*, or in other words it can potentially cause *genotoxicity*. Rhodamin B is often used to dye food, beverage, medicine and cosmetic products (Pujari et al., 2022). Therefore, natural dyes are used as an alternative to counteract the side effects of using synthetic dyes. Natural dyes are

substances derived from plant extracts, for example kesumba, suji, turmeric, ketapang leaves, secang. And from animal extracts for example: cochineal is a dark red dye made from cactus insects, is an example of an animal extract from which natural dyes are used in place of synthetic dyes due to the various adverse effects associated with synthetic dyes (Abadi et al., 2022).

The Ashoka flower, scientifically known as Ixora javanica (Blume) DC, is an ornamental plant of the Rubiaceae family. This flower has a characteristic bright color pigment. Color pigments in Ashoka flowers are known to include anthocyanins, betalains, carotenoids, cyanidin, *phycocyanin*, *phycoerythrin*, and *xanthophyll* (Pujari et al., 2022). Meanwhile, alkaloids, anthocyanins, isocatechins, catechins, coumarins, lignans, saponins, tannins, and triterpenoids are some of the secondary metabolites found in asoka flowers.

The purpose of the study, according to previous research conducted by Chintiya *et al.*in 2023 is to find out if the Asoka flower, *Ixora javanica* (Blume) DC, can be used to make lip cream preparations that meet the pharmaceutical standards of lip cream preparations. The benefits of asoka flowers are intended to increase awareness of the use of asoka flowers and show that their ethanol extract can be used as a natural dye, especially in *blush preparations* (Aulia *et al*., 2023).

Several previous studies have investigated natural dyes from plant extracts in lip cosmetic formulations. Asyifaa et al. (2017) formulated lip cream using rosella flower extract as a natural dye and demonstrated that plant pigments can be incorporated into lip preparations with acceptable stability (Asyifaa et al., 2017). Mufidah et al. (2021) reported that senggani fruit extract could be formulated into lip cream with satisfactory physical characteristics (Mufidah et al., 2021). Narki et al. (2021) also formulated lip cream using turmeric rhizome and cocoa seed extracts as natural colorants and showed that herbal ingredients can provide acceptable organoleptic and physical properties (Narki et al., 2021). Furthermore, Ghongade et al. (2021) and Pujari et al. (2022) evaluated the use of *Ixora coccinea* flower extract in cosmetic coloring preparations and confirmed its potential as a natural coloring agent. Aulia et al. (2023) also reported the utilization of asoka flower ethanol extract in blush preparations, indicating that this plant may serve as a promising cosmetic pigment source.

Although previous studies have shown the potential of natural colorants in decorative cosmetics, most of them focused on other plant materials, other dosage forms, or only limited aspects of formulation testing. Research specifically examining the use of Ixora javanica flower extract in lip cream preparations is still limited. In addition, previous studies have not comprehensively addressed whether thick extract of asoka flower meets extract quality requirements, whether it can be formulated into a stable lip cream, and whether the resulting preparation fulfills the required physical and chemical quality parameters during storage. This indicates a research gap regarding the formulation development and stability evaluation of lip cream containing Ixora javanica flower extract as a natural colorant (Anastasia & Desnita, 2023).

Based on this gap, the novelty of this study lies in the formulation of lip cream using thick extract of asoka flower (Ixora javanica (Blume) DC) as a natural colorant, followed by a comprehensive evaluation of its physical quality and storage stability. Unlike previous studies that mostly focused on other botanical materials or different cosmetic products, this research specifically explores the potential of Ixora javanica extract in lip cream dosage form through organoleptic testing, homogeneity, pH, spreadability, adhesion, type determination, and

stability observation over storage time. Thus, this study not only contributes to the development of natural cosmetic products but also provides scientific evidence regarding the feasibility of asoka flower extract as an alternative natural dye in lip cream formulation.

This study aims to answer several main questions, namely whether asoka flowers can be processed into thick extracts that meet quality standards, whether the extract can be formulated in lip cream preparations, and whether the resulting lip cream preparations meet physical and chemical quality requirements and have good stability during storage. In general, this study aims to develop a formula for herbal lip cream preparations made from asoka flower extract Ixora javanica (Blume) DC and provide information related to the evaluation of the quality of the preparation. In particular, this study aims to ensure that asoka flower extract meets quality standards, formulate the extract in the form of lip cream, determine the physical and chemical quality of the preparation produced, and obtain a stable lip cream preparation during storage. This study is based on the hypothesis that the lip cream formulation of asoka flower extract has good physical and chemical stability and is able to maintain its stability during storage. The benefit of this research is to provide scientific information about the formulation of lip cream made from asoka flower extract which has the potential to be a natural dye, as well as providing an overview of the consistency and quality of lip cream preparations based on herbal ingredients.

METHODS

Research Place and Time

This research carried out at the Laboratory of Pharmaceutical Preparation Technology and Natural Ingredients, Tarumanegara Institute DKI Jakarta Campus in June - July 2024.

Research Tools and Materials

Tools

The tools used in this study include: Analgetic scales *(Kern ABJ 220-4NM),* vacuum rotary evaporator *(Heidolph),* water baths (Memmert) pH meter *(Milwaukee Mi 150),* 5gr cream pot, 100 ml beaker *(Iwaki),* stirring sticks, porcelain cups, glass funnels, hot plates, flat glass, watch glass, object glass, mortar and stamper, horn spoons, metal spavels, glass jars, ruler *(stainless).*

Ingredients

The ingredients used in this study are asoka flower (*Ixora javanica* (Blume)DC), 96% ethanol *(Solvent Ethanol Technic),* carnauba wax *(Carnuba Wax),* candelilla wax *(Refined Candelilla Wax 7454),* castoroil, kaolin *(Yukami Breand),* phenoxyethanol (*Phenoxyethanol),* Tocopherol, and vanillin (*Vanillin for synthesis).*

Research Methods

Sample Determination

Plant determination was carried out to establish the correctness of the sample used in the study. The determination of plants is carried out at the National Research and Innovation Agency (BRIN). Cibinong Jl. Raya Bogor, Cibinong District, Bogor Regency, West Java.

Sample Processing of Red Asoka Flower (*Ixora javanica* (Blume)DC)

Asoka flowers *(Ixora javanica* (Blume)DC) were obtained from the Green Garde Complex, West Jakarta. Processing starts with the separation of pest-free flowers from all samples, then washed and dried. Drying of asoka flower samples is carried out by air drying

with indirect sunlight. The dried asoka flower samples are then separated from other ingredients that are mixed during the drying process. The sample is mashed using a blender until a powder is obtained.

Extraction Process of Asoka Flower Samples (*Ixora javanica* (Blume)DC)

Asoka flower powder (Ixora javanica (Blume)DC) is weighed and extracted by the maceration method using 96% ethanol solvent for 3x24 hours while stirring occasionally. A pureed sample of asoka flowers is added with a 96% ethanol solvent in a ratio of 1: 5 (500 grams of asoka flower powder is added 5 liters of 96% ethanol). The powder begins by adding asoka flower powder to solvent until it is completely submerged.

Then it is covered with aluminum foil to cover the glass container to protect it from light and left for 3 days, with occasional stirring or shaking of the container. After the celery extraction, the phytrates are then filtered with filter paper, concentrated with a rotary evaporator at a temperature of 50°C and until a solvent-free viscous extract is obtained.

Red Asoka Flower Extract (Ixora javanica (Blume)DC) Yield

The weight of simplisia powder and the weight of red asoka flower viscous extract were weighed for the calculation of the extract endendem. The calculation of extract yield can be calculated by the formula:

$$\% \text{ Extract Soaking x } 100\% = \frac{Berat\ Ekstrak}{Berat\ Serbuk}$$

Phytochemical Screening

Phytochemical screening was carried out to determine the compounds, alkaloids, saponins, flavonoids, tannins, triteponoids carried out at PT. PALAPA MUDA PERKASA Gg. Ceplik Kalimulya, Cilodong District, Depok City, West Java.

Lip Cream Formulation with Red Asoka Flower Ethanol Extract

The preparation of *lip cream* preparations begins with the manufacture of the best base that has passed pharmaceutical requirements. The base is then added asoka flower extract which has been dissolved with warm glycerin according to the specified concentration variation (Harjanti et al., 2022). It is then eroded until it is evenly distributed (Hasan, 2018). The basis for adding ethanol extract of asoka flower to lip cream preparations F1, F2 and F3 is to make *lip cream* from red dragon fruit *peel extract (hylocereus polyhizuz)* as a natural dye (Putri et al., 2016).

Table 1. Formula *Lip Cream* Asoka Flower Extract

Substance Name	Formula (%)				
	F0	F1	F2	F3	Remarks
Asoka Extract	0	2	4	6	Dye
Carnauba wax	1	1	1	1	Thickener
Candellia wax	2	2	2	2	Thickener
Castor Oil	30	30	30	30	Emollient
Kaolin	3	3	3	3	Anti-Aging
Tocopherol	0.05	0,05	0,05	0,05	Antioxidant
Phenoxyethanol	0.05	0,05	0,05	0,05	Preservative
Vanillin	0.02	0,02	0,02	0,02	Flavoring

Source: Formula data designed by the researcher based on the formula modification of Putri et al. (2016) and Hasan (2018)

Description:

F0 : Lip cream formula without red asoka flower extract
F1 : Lip cream formula with 2% red asoka flower extract
F2 : Lip cream formula with 4% red asoka flower extract
F3 : Lip cream formula with 6% red asoka flower extract

Manufacture *of Asoka* Flower Extract *Lip Cream (Ixora javanica* (Blume)DC)

Prepare the necessary tools and materials, weigh all the ingredients and weigh the extracts for the formula F1(2%), F2(4%), F3(6%), then melt the wax phase, namely carnauba wax, candelilla wax on a hot plate until melted after melting it is transferred to a heated mortar and add castor oil and while grinding slowly until homogeneous. Then add kaloin, tocopherol, phenoxyethanol and vanillin little by little until they are eroded until homogeneous and add extracts according to the amount of formula.

Evaluate Lip Cream *Preparations*

In the manufacture *of lip cream*, what must be considered is the evaluation test of the preparation, the evaluation of *the preparation of lip cream* is a parameter that has been set to determine the consistency of *the lip cream preparation*. [Sec. 9.

Organoleptic Observations and Homogeneity

Orgonoleptic analysis is carried out by observing changes in the shape, smell, and color of *lip cream* preparations. Homogeneity tests are carried out to see whether the prepared that has been made is homogeneous or not. The method is that lip cream is applied to the glass of a transparent object where the preparation is observed in three parts, namely the top, middle and bottom, then the glass of the glass object is covered with glass of other transparent objects. Homogeneity is indicated by the absence of coarse grains.

pH measurement

The pH measurement of *lip cream* preparations with various concentrations is carried out using a digital pH meter, by first diluting it with distilled water with a ratio of 1 : 10. The electrodes on the digital pH meter are dipped in the solution until they show a stable number.

Lip Cream Type Testing

The lip cream type test was carried out using a dilution technique by dissolving lip *cream* in water. Lip cream is M/A when dissolved in its entirety and A/M when insoluble (Purwaningsih et al., 2020).

Dispersion Testing

Dispersion testing was performed to determine the speed of *the lip cream* spread on the lips. [(Sec. 8)

Adhesive Testing

The adhesion test is the ability *of lip cream* to adhere to the skin when used. *A good lip cream* has high adhesion. The higher the stated adhesion, the better.

Stability Test of Lip Cream Preparations

The stability test of *lip cream* preparations is carried out on preparations stored at room temperature for 21 days and evaluated every 1 week including:

Organoleptic Test

Testing is carried out for 21 days, stored at room temperature and evaluated weekly. Organoleptic test examination includes aroma, texture, color.

Homogeneity Test

Homogeneity testing is carried out to determine whether the particle composition of the solution is homogeneous or not by observing the preparation including the particle texture or the uniformity of the particles on the preparation paper by applying the preparation to the glass of the object and said to be homogeneous if there are no coarse grains.

Power Oles

The power of the application is determined by applying *lip cream* to the arm 5 times then observing the color of *the lip cream* attached to the arm. Lip cream preparations are said to have a softening effect if the color that sticks to the skin of the arms is abundant and even. 7)

Dispersion Test

The preparation is weighed 1 gram and placed in the middle of the glass object and then given a weight of 100 g for 1 minute. A good spreadability for semi-solid preparations is 5–7 cm.

Adhesive Strength Test

The preparation is weighed as much as 0.5 grams and placed on the glass of objects that overlap each other. Then a weight of 1 kg for 5 minutes was then the object glass was installed on the test device with a height of 50 cm from the ground level and a weight weighing 80 grams was released which was installed on the object glass. Record the time(s) required until the object's glass comes off. The preparation is said to have good adhesion if the time is >4 seconds (Akmal et al., 2023).

PH Test

The pH test is performed with a calibrated pH meter. The preparation is dissolved in aqueducts and observed to have a constant pH value and the standard pH test is 4.5-8.0.

Preference Test or Hedonic

The preference test was carried out using 10 panelists. Panelists are female with the age of 20-23 years. The assessment of the preference test is made in the form of a questionnaire.

RESULTS AND DISCUSSION

Plant Determination

The result of the identification of plant determination is that it is declared true that the plant is a red asoka flower, with the type *Ixora javanica* (Blume) DC, and the tribe *Rubiaceae.*

Asoka Flower Extract Rendeman

Of the total powder used in this study, 500 g and 120 g of thick extract was obtained. The calculation of extract yield is in appendix 15.

Phytochemical Screening

Qualitative analysis testing of chemical compound content is carried out to determine the presence of desired compounds, including tannins, alkaloids, steroids, flavonoids and saponins. The test was carried out at PT. Palapa Muda is mighty with the following results.

Table 2. Phytochemical Screening Results

Test Compounds	Results of Asoka Flower Condensed Extract	Remarks
Saponins	The saponin test was carried out by simply heating with 5 ml of aquadest in a water bath. And a stable foam is formed for 15 minutes	+

Test Compounds	Results of Asoka Flower Condensed Extract	Remarks
Alkaloids	-Tested positive if a brick-red/orange deposit is formed (Dragendoff)	+
	Absence of yellowish-white deposits (Mayer)	-
	-Tested positive if brown deposits are formed (Wagner)	+
Flavonoids	Red deposits are formed with the addition of hot water + Mg powder + concentrated HCL + amyl alcohol.	+
Tannins	Formed a dark blackish green solution (FeCl3 1%)	+
Triterponoid	The formation of a brick-red solution.	+

Source: Results of phytochemical tests of asoka flower condensed extract conducted at PT Palapa Muda Perkasa

Lip Cream Evaluation Results

1. Results of Organoleptic and Homogeneity Examination

In the organoleptic examination of *lip cream preparations* from asoka flower extract, semisolid preparations were obtained in the form of preparations F0, F1, F2 and F3, for the color of the preparation on F0 the color of the preparation was ivory-white, for F1 it was light brown, F2 was colate, and F3 was red. The aroma in F0, F1, F2 preparations is typical of chocolate, and F3 smells of asoka flower extract. The results of the homogeneity check of *lip cream* preparations F0, F1, F2 and F3 showed homogeneous results due to the absence of small particles in the preparation.

Table 3. Results of Organoleptic and Homogeneity Examination

F0	Aroma	Texture	Color
Homogeneous	Chocolate Specials	Semi-Solid	Ivory White
F1	Aroma	Texture	Color
Homogeneous	Chocolate Specialty	Semi-Solid	A young colat
F2	Aroma	Texture	Color
Homogeneous	Typical colat	Semi-Solid	Chocolate
F3	Aroma	Texture	Color
Homogeneous	Typical extracts	Semi-Solid	Red

Source: Results of organoleptic observation and testing as well as the homogeneity of asoka flower extract lip cream by researchers

2. pH Measurement Results

The pH measurement of *lip cream preparations* at F0, F1, F2, and F3 obtained consecutive pHs, namely: 5.13, 5.12, 5.06, and 4.78. For the appendix the results of the pH measurement can be seen in appendix 19.

Table 4. pH Measurement Results

Formula	F0	F1	F2	F3
pH	5.13	5.12	5.06	4.78

Source: Results of pH measurement of asoka flower extract lip cream preparations by researchers.

3. Lip Cream Type Testing

Based on the results of *the lip cream* type test with the dilution method on formulas 1, 2, and 3 before storage and after storage, the same result was obtained, namely A /M (Water in Oil). And it can be seen in appendix 19.

Table 5. Type Testing *Lip Cream*

Types of Lip Cream	F0	F1	F2	F3
M/A and A/M	A/M	A/M	A/M	A/M

Source: Results of testing the type of preparation of asoka flower extract lip cream by researchers

Description :
M/A : Oil and Water
A/M : Water and Oil

4. Dispersion Testing

The following are the results of the dispersion test by means of *a lip cream* preparation that has been weighed as much as 0.5 g. Placed in the glass, the object is then left for 1 minute and the diameter of *the lip cream preparation is measured.* The following are the measurement results:

Table 6. Dispersion Testing

Formula	F0	F1	F2	F3
Length	5 cm	5.1 cm	5.2 cm	5.3 cm

Source: Results of the test of the dispersion of asoka flower extract lip cream preparations by the researcher.

5. Adhesive Testing

The adhesion test was carried out by weighing 1g of *lip cream*, then placed on one of the object glasses and covered with another object glass until the two plates fused. And here are the results:

Table 7. Adhesion Test Results

Formula	F0	F1	F2	F3
Time	4:30 p.m.	17.22 seconds	4:20 p.m.	5:10 p.m.

Source: Results of adhesion testing of asoka flower extract lip cream preparations by researchers

Lip Cream Stability Test Results

1. Organoleptic Test Results

Organoleptic testing of *lip cream* preparations is carried out by observing color, aroma, and texture. The results of organoleptic testing of *F0*, F1, F2 and F3 lip cream preparations did not show any changes in texture, color, and aroma within 21 days.

Table 8. Organoleptic Test Results

F0	Week 1	Week 2	Week 3
Aroma	Chocolate Specials	Chocolate Specials	Chocolate Specials
Color	Ivory White	Ivory White	Ivory White
Texture	Semi-Solid	Semi-Solid	Semi-Solid
F1			
Aroma	Chocolate Specials	Chocolate Specials	Chocolate Specials
Color	Light Chocolate	Light Chocolate	Light Chocolate
Texture	Semi-Solid	Semi-Solid	Semi-Solid
F2			
Aroma	Chocolate Specials	Chocolate Specials	Chocolate Specials
Color	Chocolate	Chocolate	Chocolate
Texture	Semi-Solid	Semi-Solid	Semi-Solid
F3			
Aroma	Typical Extracts	Typical Extracts	Typical Extracts
Color	Red	Red	Red
Texture	Semi-Solid	Semi-Solid	Semi-Solid

Sumber: Hasil uji stabilitas organoleptik sediaan lip cream ekstrak bunga asoka selama penyimpanan 21 hari oleh peneliti.

2 Homogeneity Test

The results of the lip cream *homogeneity test* showed that F0, F1, F2, and F3 showed no homogeneous changes, thus the preparations of the F0, F1 and F3 creams made remained stable at 21 days of storage. Meanwhile, F2 is not homogeneous because it occurs due to a lack of stirring in the preparation so that the preparation is not mixed homogeneously. The homogeneity check can be seen in table 9

Table 9. Homogeneity Test Results

Formula	Week 1	Week 2	Week 3
F0	Homogeneous	Homogeneous	Homogeneous
F1	Homogeneous	Homogeneous	Homogeneous
F2	Homogeneous	Homogeneous	Not Homogeneous
F3	Homogeneous	Homogeneous	Homogeneous

Source: Results of the homogeneity test of asoka flower extract lip cream preparations during 21-day storage by researchers

3. Smudge

The results of the observation test of applying *lip cream preparations* are carried out visually by applying a number of preparations to the skin of the arms three times and the results of the observation test are repeated three times the test results can be seen in the appendix.

4. Dispersion of Preparations

Data from the distribution check of preparations showed that *lip cream* preparations made with the formula F0-F3 had a spread of 5 to 5.5 cm in diameter. It can be seen in the following table 10.

Table 10. Dispersion Test Results

Formula Lip Cream	Week 1	Week 2	Week 3
F0	5 cm	5.2 cm	5.2 cm
F1	5.1 cm	5.3 cm	5.4 cm

Formula Lip Cream	Week 1	Week 2	Week 3
F2	5.2 cm	5.1 cm	5.2 cm
F3	5.3 cm	5.2 cm	5.5 cm

Source: Results of the spread test of asoka flower extract lip cream preparations during 21 days of storage by the researcher

5. Adhesion Test

The adhesion test is used to determine the adhesion of *lip cream* to the lips, and the adhesion test on *lip cream* preparations is not less than 4 seconds. By obtaining the following results.

Table 11. Adhesion Test Results

Formula	Week 1	Week 2	Week 3
F0	4:30 p.m.	5:20 p.m.	16.35 seconds
F1	17.22 seconds	4:20 p.m.	5:30 p.m.
F2	4:20 p.m.	17.25 seconds	4:20 p.m.
F3	5:10 p.m.	4:20 p.m.	17.25 seconds

Source: Results of adhesion test of asoka flower extract lip cream preparations during 21-day storage by researchers

6. pH test

The pH evaluation of *the lip cream formula* is carried out to find out whether the preparation has a pH that is in accordance with the pH standard of *lip cream preparations* according to SNI, which is 4.5 – 6.0 with the following results obtained.

Table 12. pH Test Results

Formula	Week 1	Week 2	Week 3
F0	**5.13**	5.12	5.11
F1	5.12	5.13	5.12
F2	5.06	5.06	5.13
F3	4.78	4.79	4.80

Source: pH test results of asoka flower extract lip cream preparation during 21-day storage by researchers

Preference and Hedonic Test

Hedonic testing was carried out on 10 panelists to find out the level of likability in *lip cream* preparations including texture, color, aroma and with the following results.

Table 13. Preference Test Results / Hedonic

Formula	Clearance								
	Texture			Color			Aroma		
	TS	N	S	TS	N	S	TS	N	S
F0	0	0	10	0	7	3	0	0	10
F1	0	5	5	0	1	9	0	3	7
F2	0	2	8	0	1	9	0	4	6
F3	0	3	7	0	0	10	0	2	8

Source: The results of the hedonic test of asoka flower extract lip cream preparation on 10 panelists, processed by the researcher

Description:
TS : Not Like
N : Neutral,
S : Likes

It is experimental research in the laboratory of Pharmaceutical Preparation Technology and Natural Ingredients, Tarumanegara Institute Campus DKI Jakarta. Asoka flower samples obtained from West Jakarta, and determined at the National Research and Innovation Agency (BRIN), Cibinong, Bogor. Determination is made to find out the truth of the origin of the simplicia used in the research. The result of the identification of plant determination is that it is declared true that the plant is a red asoka flower, with *the type ixora javanica* (Blume) DC, and the *Rubiaceae tribe.*

Processing starts from separating pest-free flowers from all the samples, then washing and drying. Drying of asoka flower samples is carried out by drying them by wind drying with indirect sunlight, because if exposed to direct sunlight, what will happen is that it can reduce the content of chemical compounds. The dried asoka flower samples are then separated from other ingredients that are mixed during the drying process. After that, the sample is mashed using a blender until a powder is obtained. The purpose of sempel being used as a fine powder is to facilitate the maceration process.

The extract stage uses the maceration method; the selection of the maceration method is carried out to avoid the damage of the compounds in the sample. 96% ethanol solvent is used because it is polar so that it is able to dissolve anthocyanin compounds in polar asoka flowers. Maceration is carried out for 3x 24 hours, the longer the material is macerated, the more optimal the contact of the material with the solvent. In the maceration process, stirring is carried out which aims to accelerate the contact between the ingredients and the solvent. The extracts obtained are then filtered to separate between the maserat and the pulp. The pulp is squeezed 3 times so that the compounds in the simplicia are completely withdrawn. The maserat is then thickened using *Rotary Evaporator* at 50°C. Rapid thickening can be done at high temperatures, but it will result in damage to some of the compounds it contains. So that the thickening is continued using a water bath at a temperature of 60°C until a thick extract is obtained. The condensed extract obtained is 120 g from 500 g of dry powder. Then the value of the rendition is calculated and a value of 24% is obtained. Rendeman is said to be good if the value is more than 10%.

After obtaining the thick extract, the purpose of phytochemical tests is to determine the content of active compounds contained in the plant so that it can be used as a preparation *Lip Cream* (Alydrus et al., 2023). And the phytochemical content of asoka flower extract was identified to see the presence of the desired compounds, namely flavonoid compounds that are antioxidants that are positive for red precipitation, tannin compounds that are antioxidant are positive for green solution, alkaloid compounds that are antifungal are positive for red precipitation to form, saponin compounds that are amphiphilic are positive for stable foam (Akmal et al., 2023). The phytochemical screening examination was carried out at PT. Palapa Muda Perkasa is due to limited Reagents in the Laboratory of the Tarumanegara Institute.

Preparation evaluation is carried out to determine the stability of a preparation *Lip cream.* Organoleptic is carried out to determine changes in aroma, color, and texture in preparations. The results of organoleptic testing showed that the form of semisolid preparations

in preparations F0, F1, F2 and F3 for the color of the preparation in F0 was obtained in ivory white, because it did not contain asoka flower extract. F1 is light brown because it contains 2% extract, F2 is brown because it contains 4% extract and F3 is red because it contains 6% extract. The aroma in the preparations F0, F1, F2 has a distinctive smell of chocolate. And F3 has a distinctive aroma of asoka flower extract.

Homogeneity testing is carried out to determine the mixture of ingredients in the preparation *Lip Cream*. The results of the homogeneous nitas test showed that each lip cream preparation remained homogeneous and there were no small particles or lumps. This shows that all the ingredients used in the formulation can be mixed well.

pH testing is done to find out if the preparation is safe and does not irritate the skin when used. Due to the preparation requirements *Lip Cream* which is good according to the skin's natural pH which is 4.5-6.5. The pH test results showed that F0, F1, F2 and F3 got neutral pH results of 5.13, 5.12, 5.06 and 4.78. Type testing *Lip Cream* carried out to find out type A/M or M/A, type test results *Lip Cream* shows that F0, F1, F2 and F3 have a type *Lip Cream* A/M because it cannot be soluble in water, the test is carried out using the dilution method to make it easier to determine the type *Lip Cream* (Adiningsih et al., 2021).

The stability test of the cream preparation is carried out on preparations stored at room temperature for 21 days and an evaluation is carried out once every 1 week, the purpose of the stability test is to find out whether the preparation *Lip Cream* stable within 21 days (Agustin & Ismiyati, 2015). Stability tests include organoleptis, homogeneity, pH measurement, dispersion test, adhesion test, and type test *Lip Cream*. Organoleptic testing of preparations *Lip Cream* F0, F1 and F3 did not show any change in texture, color, aroma within 21 days, for F2 preparations there was a change in the texture of the preparation for 21 days, namely the presence of small brown particles, the change in the texture of the F2 preparation occurred due to a lack of stirring so that the preparation was not homogeneous (Nair et al., 2018). For the sake of getting ready *Lip Cream* F0, F1 and F3 are stable within 21 days while F2 is not as stable within 21 days.

Homogeneity test *Lip Cream* done to find out if the preparation *Lip Cream* mixed homogeneously and does not show the presence of small lumps in the preparation within 21 days. The results of the F2 homogeneity test showed a change in homogeneity in the 3rd week, namely the presence of small lumps. This event occurs due to a lack of stirring in the preparation so that the preparation is not mixed homogeneously.

The pH measurement of the preparation within 21 days was carried out to determine that the pH of the preparation was stable at room temperature. The results of the pH measurement of the preparation every week show *Lip Cream* The pH of F0, F1, F2 and F3 is between the pH ranges of the preparation *Lip Cream* good with pH results of 5.11, 5.12, 5.13 and 4.80.

Dispersion testing on the stability test is carried out to determine the capabilities of the base *Lip Cream* spread so that it can be seen that it has a comfortable dispersion in its use for semisolid preparations, which is 5-7 cm. The results of the dispersion test showed that F0, F1, F2 and F3 met the standard of good dispersion with the dispersion test in 21 days, namely F0 5, F1 5.1, F2 5.2 and F3 5.3.

The adhesion test is carried out well if the cream is attached to the skin for more than 4 seconds. Good adhesion shows *Lip Cream* It does not come off easily and is more attached to the skin, so it can produce the desired effect. The results of the adhesion test showed that F0,

F1, F2 and F3 with results for 21 days, namely 16.35 seconds, 17.30 seconds, 16.20 seconds and 17.25 seconds met the requirements for the stability of chemical physics.

CONCLUSION

F0, *F1, and F3* lip cream preparations produce *lip creams* that are physically stable and meet the requirements of physical chemical quality. F0, F1 and F3 lip cream preparations have good stability at 21 days of storage. Meanwhile, F2 *lip cream* preparations are not stable at storage in the third week. Future research is recommended to optimize the formulation process, particularly in improving the mixing technique to ensure homogeneity in all formulations. Further studies should also be conducted using a larger number of samples and longer storage periods to evaluate long-term stability more comprehensively. In addition, it is important to perform safety tests such as irritation tests and microbiological evaluations to ensure the safety of the product for human use. Exploration of different concentrations or combinations with other natural ingredients is also suggested to enhance color intensity, stability, and overall product performance. Finally, advanced analytical testing is needed to standardize the active compounds in asoka flower extract to support its wider application in cosmetic industries.

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