INDONESIAN JOURNAL OF MULTIDISCIPLINARY SCIENCE

P-ISSN: 2808-5957
E-ISSN: 2808-6724
ijoms.internationaljournallabs.com

TEST FORMULAS AND HEDONIC LIPCREAM CHOCOLATE SEED EXTRACT (*THEOBROMA CACAO L.*)

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Abstract

Cocoa bean (*Theobroma cacao L.*) contain anthocyanins which can be used as natural dyes. The purpose of this study was to determine whether *lip cream* preparations with natural dyes cocoa bean extract (*Theobroma cacao L.*) met the requiretments for good and stable *lip cream* quality during storage. The method used in this study using the experimental method. This research was made with 3 concentrations, namely *lip cream-colored* cocoa bean extract (*Theobroma cacao L.*) with a concentrations of 6% (X1), 10% (X2), and 14% (X3). Cocoa bean extrack was obtained using the maceration method with etanol 70% and acetic acid 2% as solvents. Evaluation was carried out on all formulas including organoleptic test, homogenity test, spreadability test, spreadability test, adhesion test, pH test, stability test, and hedonic test. The *lip cream* is creamy in color and has a distinctive smell and is unstable in storage.

Keywords: *Cocoa Bean Extract (Theobroma cacao L.), maceration, Lip cream.*

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INTRODUCTION

Cosmetics are materials or preparations intended to be used on the external body parts of the human body (epidermis, hair, nails, lips, and external genital organs) or on the teeth and mucous membranes of the mouth, especially to clean, perfume, change appearance and/or improve body odor. or protect or keep the body in good condition (BPOM RI).

Cosmetics have been known since the beginning of human civilization and are needed by all levels of society. Humans need cosmetics in almost all conditions: in health or illness, even by people who have died. So, the use of cosmetics is wider than drugs, and economically it has great potential, no less than drugs (Goeswin, 2015).

One of the most commonly used cosmetic preparations is lip color (lipstick). Lip color is included in decorative cosmetic preparations, the use of which is solely attached to the part of the body that is made up. In general, the use of decorative cosmetics aims to hide flaws in the skin so that it can have a good psychological effect, namely the emergence of self-confidence. The

requirements for decorative cosmetics are attractive colors, fragrant odors, not sticky, and do not damage or disturb skin health (Latifah & Iswari, 2013).

Cosmetics that are starting to be popular today are lip cream cosmetics. Along with the times, lip creams are increasingly being marketed and favored by the public because of their moisturizing and glossy properties. Lip cream is generally the same as lipstick. Lipstick is in solid form while lip cream is in liquid form. Even so, lip cream is not the same as lip gloss which tends to be glossy (glossy), lip cream gives a matte or semi-matte like lipstick (Harefa, 2019).

Lip cream is a liquid lipstick preparation that can moisturize the lips for a longer time than in solid form, and produces a more even color on the lips. This is because the higher oil content in lip cream can help moisturize the lips. This type of lipstick tends to contain more wax content so that it can function as lip protection from direct sunlight (Harefa, 2019).

Cocoa beans are the seeds of the cocoa tree fruit that have gone through a drying process and are ready to be processed. Cocoa beans (Theobroma cacao L.) have the potential to be used as an alternative to natural dyes because they have attractive colors. Cocoa beans contain polyphenols. Polyphenol compounds in cocoa beans are flavonoids. The purple color of cocoa beans is due to the presence of anthocyanin pigments from the pelargonidin group which are derivatives of flavonoid compounds. Anthocyanins have various benefits, one of which is as a natural dye that can replace synthetic dyes (Risnawaty, Nazliniwaty, & Purba, 2013).

In the previous practicum, the formulation of cocoa bean extract (Theobroma cacao L.preparations lip cream with extract concentrations of 12%, 14% and 16%. The evaluation results show that the lip cream formulations lip cream (Ika Lestari, 2014). Cocoa bean extract (Theobroma cacao L.) has also been made in lipstick preparations with concentrations of 10%, 12%, 14%, 16% and 18%. And the results of the evaluation of the preparations showed that all preparations made were stable in storage for 30 days, did not show any changes in shape, color and odor, had good homogeneity, did not irritate (Risnawaty et al., 2013).

METHOD

The research method in the form of an experimental method was carried out in the chemical laboratory and pharmacy laboratory of the YPIB School of Pharmacy (STF) Cirebon.

Tools and Materials

The tools used are: scales, blender, macerator, flannel cloth, stirring rod, glass funnel, beaker glass, measuring cup, evaporation cup, spirit burner, tripod, and asbestos gauze, mortar, stamper, and dropper.

The ingredients used are cocoa beans (Theobroma cacao L.) as natural dye, cera alba, cetyl alcohol, oleum ricini, dimethicone, titanium dioxide, metik paraben, propylparaben, ethanol (70%), citric acid and aqua dest.

Sample

Preparation includes sample collection, plant determination, and sample processing.

Sample collection

The samples used were ripe (old) cocoa beans, which were taken from the Sumedang area, West Java, Sumedang, and West Java.

Plant determination

Plant determination was carried out in the chemical laboratory and pharmacy laboratory of the YPIB School of Pharmacy (STF) Cirebon.

Sample processing

The ripe chocolate fruit is seeded and cleaned of dirt and then dried. The dried cocoa beans were collected and blended until smooth, then weighed as much as 100gr.

Making cocoa bean extract

A total of 100 grams of cocoa beans that have been mashed with a blender and then macerated with 750 ml of 70% ethanol, Cover the bottle with black duct tape so that light cannot enter, Let stand for up to 5 days protected from light while stirring frequently, Filter with gauze, The filtrate is accommodated (first filtrate), the maceration dregs are put back into the maceration container and given 250 ml of 70% ethanol and mixed with 5 g of citric acid, for 2 days, filtered through gauze. The filtrate obtained is mixed with the first filtrate and then evaporated with a cup. vaporizer, the thick extract was given 2% citric acid.

Procedure for making lip cream

Prepare tools and materials. Weigh the ingredients. The lily phase (Cera alba) was melted (mixture A) and the fat phase (oleum ricini, dimethicone, and cetyl alcohol) was melted (mixture B). Both were melted at 85o C. After melting let the temperature be 65o C. The Lili (Cera alba) phase was melted (mixture A) and the fat phase (oleum ricini, dimethicone, and cetyl alcohol) was melted (mixture B). Both were melted at a temperature of 85o C. After melting, let the temperature be 65o C. Put mixture A into a hot mortar with strong grinding and add little by little the melted mixture B, grind it vigorously. Added titanium dioxide (TiO3) little by little, grind ad homogeneous. Add methylparaben and propylparaben, and grind ad homogeneously. Added viscous extract of cocoa beans ad formed Lip Cream a homogeneous container Lip Cream.

Physical quality inspection of preparations Physical

Quality inspection includes: organoleptic test, smear test, homogeneity test, spreadability test, adhesion test, pH test, hedonic test.

Table 1. Formulation of lip cream preparations using cocoa bean extract dye

NAME	OF COMPOSITION (grams)			UTILITY
	K -	X1	X2	X3
Cera alba	16.5	16.5	16.5	16.5 Moisturizer
Oleum ricini	28.5	28.5	28.5	28.5 Moisturizer
Cetyl alcohol	0.4	0.4	0.4	0.4 Emollient (softener)
Dimethicon	2.5	2.5	2.5	2.5 Emollient (softener)
Cocoa Bean Extract	0.00	3	5	7 Colorant
	0.25	0.25	0.25	0.25 Radiation Blocker
Paraben Dead	0.15	0.15	0.15	0.15 Preservative
Propyl Paraben	0.15	0.15	0.15	0.15 Preservative

RESULT AND DISCUSSION

Extraction

The extract obtained from macerated extract of cocoa beans (*Theobroma cacao L.*) as much as 770 ml due to an error in storage (spilled) the remaining 670 ml of extract was made thick extract and with a yield of 150 ml. with characteristics of a dark brown color, characteristic odor and bitter taste.

Lipcream formulations.

Variations in the concentration of cocoa bean extract dye used in this study were 6%, 10% and 14%. All are cream colored.

Homogeneity of preparations

Test for homogeneity of *lip cream* cocoa bean extract (*Theobroma cacao L.*) concentrations of 6%, 10%, 14% and negative control results obtained from the homogeneity examination of the preparations showed that the preparations made were not all homogeneous, preparations X1 and X3 were not homogeneous and preparations K - and X2 is homogeneous. It is characterized by the presence or absence of coarse grains on the preparation when viewed from the glass.

Organoleptic

Test Organoleptic test aims to determine the physical form of color, taste, and smell of lip cream preparations. Lip cream with cocoa bean extract (*Theobroma cacao L.*) has a creamy color, tasteless taste, and a distinctive odor from the ingredients and extracts.

The homogeneity test of *lip cream* cocoa bean extract (*Theobroma cacao L.*) with concentrations of 6%, 10%, 14% and the negative control showed that the results of the homogeneity examination of the preparations showed that the made not all homogeneous, the preparations X1 and X3 are not homogeneous and the preparations K- and X2 are homogeneous. It is characterized by the presence or absence of coarse grains on the preparation when viewed from the glass.

Oil power test

The test of the power *cream* cocoa bean extract (*Theobroma cacao L.*) was determined by applying *lip cream* 5 times and then observing the color of the *lip cream* attached to the arm. The results obtained from this test are that the K- and X1 preparations produced a little and uneven color. While X2 and X3 the colors produced are many and evenly distributed.

Spreadability

Test *lip cream* cocoa bean extract (*Theobroma cacao L.*) is said to be easy to spread if the diameter is 5-7 cm. Preparation K- has a diameter of 3.8 cm, preparation X1 has a diameter of 4.4 cm, preparation X2 has a diameter of 5 cm, and preparation X3 has a diameter of 5 cm. If seen from these results, it shows that the preparations X2 and X3 meet the requirements of the dispersion test.

Dya stickiness test Adhesiveness

Test of *lip cream* cocoa bean extract (*Theobroma cacao L.*) which can be obtained from preparation K-8.53 seconds, preparation X1 5.74 seconds, preparation X2 3.12 seconds, and preparation X3 2.35 seconds.

pH

Test The pH test *lip cream* of cocoa bean extract*Theobroma cacao L.*) was measured using pH paper by dissolving the preparation in 50 ml of water while heated, the lip cream preparation was said to be good if the pH of the lip cream did not exceed the physiological pH of the skin, namely 4.5 - 6.5. The results obtained from this pH test are 6, therefore all preparations safe for the skin because it does not exceed the physiological pH of the skin.

The preference

Test (hedonic) *lip cream* cocoa bean extract (*Theobroma cacao L.*) was conducted using a panel of 30 women aged 15-30 years. The most preferred result of all preparations is preparation X2 with a concentration of 10%.

Stability

Test Stability test *lip cream* of cocoa bean extract*Theobroma cacao L.*) at concentrations of 6%, 10%, 14% and a negative control showed that the lip cream did not change in smell and

color. However, the preparation is not homogeneous because there are fine granules in the lip cream in all preparations. The results obtained from the stability test that all preparations are unstable in storage.

Data analysis

Test Statistical data analysis test using SPSS Version 21 application shows that the data is not normally distributed but homogeneous. So that the test cannot be continued to the ANOVA test stage but is continued to the non-parametric statistical test stage using the Kruskal Wallis and Mann Whitney test. The result is that there is a significant difference between the concentration of lip cream 10% (X2) and *lip cream* wardah (K+), and base lip cream (K-) with *lip cream* wardah (K+). Meanwhile, at the concentration of 6% lip cream (X1) with *lip cream* (K+), and 14% lip cream concentration (X3) with *lip cream* (K+) there was no significant difference.

CONCLUSION

Berdasarkan hasil penelitian tentang formulasi dan evaluasi *lip cream* ekstrak biji cokelat (*Theobroma cacao L.*) yang telah dilakukan dapat disimpulkan bahwa:

1. Ekstrak biji cokelat (*Theobroma cacao L.*) dapat di formulasikan dalam sediaan *lip cream* dengan konsentrasi 6%, 10% dan 14% menghasilkan warna krem pada *lip cream*
2. Konsentrasi ekstrak biji cokelat (*Theobroma cacao L.*) 10% (X2) yang diformulasikan dalam sediaan *lip cream* yang paling disukai oleh panelis.
3. *Lip cream* ekstrak biji cokelat (*Theobroma cacao L.*) dengan konsentrasi 6%, 10% dan 14% tidak stabil pada penyimpanan menggunakan uji stabilitas cycling test.

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