Nusantara Scientific Medical Research Journal (NSMRJ)
Volume 02, No 02, August 2023, Page 01 - 08
E-ISSN 2985 - 3508 (Online Media)
https://nusantarascientificjournal.com/index.php/nsmrj/index
https://doi.org/10.58549/nsmrj.v2i02.80

Lip Cream Formulation from Miana Leaf Extract (*Coleus scutellarioides* L.) As A Natural Dye

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Abstract

Daun miana (Coleus scutellarioides) mengandung flavonoid yang dapat memberikan pewarna tertentu. Tujuan penelitian adalah memformulasi ekstrak daun miana pada sediaan krim bibir sebagai pewarna alami. Penggunaan pewarna krim bibir alami merupakan salah satu solusi untuk mengatasi permasalahan pewarna bibir krim sintetis. Salah satu tumbuhan seperti daun miana mengandung metabolit sekunder salah satunya adalah flavonoid yang dapat memberikan zat pewarna. Pewarna alami yang terdapat pada daun miana dapat dimanfaatkan sebagai pewarna alami pada kosmetik. Tujuan penelitian adalah untuk mengetahui pada konsentrasi berapa daun miana menghasilkan kualitas fisik warna yang paling optimal pada sediaan krim bibir. Metode penelitian yang dilakukan meliputi pembuatan ekstrak etanol daun miana (Coleus scutellarioides L.) dengan cara maserasi selama 5 hari dengan pelarut etanol 96% dan dilanjutkan dengan remeserasi dengan pelarut yang sama. Formula ekstrak yang digunakan adalah 5%, 10%, dan 15%. Penilaian yang dilakukan meliputi organoleptik, uji homogenitas, uji fisik, uji pH, uji iritasi dan uji kesukaan warna. Hasil sediaan krim bibir, hasil pemeriksaan organoleptik dinyatakan mempunyai bentuk sediaan semi padat, bau khas dan warna bervariasi F1, warna krem, F2 merah salmon, F3 merah bata, hasil pemeriksaan homogenitas dinyatakan homogen , hasil pengamatan sediaan tidak menyatakan tidak terjadi perubahan bentuk, warna dan bau sediaan, hasil uji pH rata-rata 4,1, hasil pengujian dinyatakan tidak menyebabkan iritasi, hasil preferensi warna Dari ketiga formula yang disukai panelis adalah konsentrasi 15% karena warnanya bening dan sangat lembut. Ekstrak etanol daun miana dapat dijadikan sebagai pewarna pada sediaan krim bibir.

Kata Kunci: *Daun Miana, Evaluasi sediaam dan formulasi sediaan lip krim*

Abstrack

The miana leaves (Coleus scutellarioides L.*) contain flavonoids that can provide specific dyes. The purpose of the study was to formulate miana leaf extract in lip cream preparations as natural dyes. The use of natural lip cream dyes is a solution to overcome the problem of synthetic lip cream dyes. One of the plants such as the miana leaves contains secondary metabolites, one of which is flavonoids which can provide dyes. The natural colors found in miana leaves can be used as natural dyes in cosmetics. The purpose of the study was to determine at what concentration the miana leaves produced the most optimal physical quality of color in the preparation of lip cream. The method of the research includes the manufacture of ethanol extract of miana leaves (Coleus scutellarioides L.) by maceration for 5 days with 96% ethanol solvent and followed by remeseration with the same solvent. The extract formulas used were 5%, 10%, and 15%. The evaluations included organoleptic, homogeneity test, physical test, pH test, irritation test and color preference test. The results of the lip cream preparation, the results of the organoleptic examination were declared to have a semi-solid dosage form, a distinctive odor and varied colors F1, cream color, F2 salmon red, F3 brick red, homogeneity examination results were declared homogeneous, the results of observation of the preparation did not state that there was no change on the shape, color and odor of the preparation, the average pH test results were 4.1, the test results were declared non-irritating, the result of the color preference of the three formulas that the panelists preferred was a concentration of 15% because the color was clear and very soft. Miana leaf ethanol extract can be made as a colorant in lip cream preparations.*

Keywords: *Miana leaves, Colorants, lip cream preparations, evaluation*

Received: *July 2023* ***Accepted:*** *August* 2023

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INTRODUCTION

Cosmetics are preparations or mixtures of ready-to-use ingredients for cleaning, increasing attractiveness, changing appearance, protecting it to remain in good condition, and improving body odor on the outside of the body (epidermis, hair, nails, lips, and external genital organs), teeth, and the oral cavity, but they are not intended to treat or cure any disease. One of the most popular decorative cosmetics today is lip color. Lip coloring preparations in the form of cream, also called lip cream, are more popular among customers because they can nourish the lips longer than solid lipsticks and also make the lips more shiny and evenly colored [1].

Plants that produce natural coloring substances that can be extracted from their parts, such as leaves, bark, fruit skin, seeds, roots, and flowers, after being boiled, burned, or bruised, are pounded and used immediately. The miana plant is one of the plants that can be used as a raw material for making natural dyes. Polyphenols, flavonoids, tannins, and alkaloids are among the chemicals found in leaf saliva. The flavonoids are orange to red in color, while the tannins are blackish brown. The miana plant, sometimes known as miana leaf, has the scientific name *Coleus scutellarioides* L [2].

Flavonoids, saponins, and tannins are among the compounds found in Miana leaves. Flavonoids have bioactivity, including anti-inflammatory properties. Miana leaf extract contains antioxidant substances, namely anthocyanin, and has an antioxidant activity of 84.64% [3].

The use of miana leaves as a source of anthocyanin can be used as a natural pigment for various purposes, especially in the food industry. Anthocyanin pigment from miana leaves The anthocyanin pigment from Miana leaves has a purplish-red color [4].

Based on the description above, the author will make dye from miana leaves (*Coleus scutellarioides* L.) as a coloring agent for lip cream preparations. The extraction of Miana leaf dye was followed by the formulation of lip cream using this dye. The research that will be carried out uses dyes from miana leaves as natural dyes in lip cream formulations, and the lip cream preparations are evaluated.

METHODOLOGY

This research was carried out using experimental methods. The stages of this research include making simplicia,

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examining sample characteristics, sample extraction, phytochemical screening, making lip cream preparations from Miana leaf extract, and testing the activity of lip cream preparations.

Making lip cream preparations and basic lip cream formulations

The formula used to make Lip cream preparations. The table of numbers and figures is sequentially as shown in ***Table 1***

Table 1. Formulation of Miana LipCream

Material	F1 (g)	F2 (g)	F3 (g)
Miana Leaf Extrack	0.25	0.5	0.75
Beeswax	1.65	1.65	1.65
Ol. Ricini	2.62	2.37	2.12
Cetyl alcohol	0.04	0.04	0.04
Kaolin	0.15	0.15	0.15
Dimethicon	0.25	0.25	0.25
Titanium oxide	0.02	0.02	0.02
Methyl paraben	0.01	0.01	0.01
Propyl paraben	0.01	0.01	0.01
Ol. Rosae	qs	qs	qs

Lip cream formulations

All required ingredients are weighed on an electric scale according to their weight in the formula. The mortar is heated by adding boiling water to it. Miana leaf ethanol extract was dissolved in castor oil (Masa 1/MI). Beeswax, dimethicone, and cetyl alcohol are melted in a water bath (Masa 2/MII). Mass 1 and Mass 2 are then placed in a hot, homogeneous grinding mortar. Kaolin and titanium dioxide were added to a homogeneous grinding mortar. After all the ingredients are homogeneous, add methyl paraben and propile paraben, grind again until homogeneous, and then add oleum rosae[1].

Lip cream evaluation

Organoleptis

Organoleptic evaluation includes visual observation of changes in dosage form, odor, and color in the lip cream preparation [5].

Homogenity

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A certain amount of lip cream preparation is taken from each formula to taste and smeared on a glass plate, touched and when rubbed, the lip cream mass must show a homogeneous composition, that is, no solid material can be felt on the glass [6].

Stability

The test was carried out by observing changes in the shape, color, and odor of the preparation for 14 days. The results of the third stability test of lip cream showed no changes in terms of shape, color, or smell [6].

pH

pH Check Each preparation in each lip color formula made from miana leaf extract in various concentrations has its pH checked by applying a small amount of the preparation to pH paper and then measuring the pH using a universal indicator. The pH of the lip cream preparation must match the pH of the lips, namely 3.8–4.7 [6]

Irritation test

The skin of the volunteer to be tested is cleaned behind the ear, then the lip cream that has been prepared is applied using cotton buds to the place to be tested, then left for 24 hours and observed every 4 hours to see if erythema, papules, vesicles, and edema occur [6].

RESULT AND DISCUSSION

The results of the miana leaf simpilisa characterization test can be seen in Table 2 and the phytochemical screening results can be seen in Table 3 below.

Table 2. Karakterisasi Daun Miana ((*Coleus scutellarioides* L.

Parameter	Result (%)	MMI Requirements (%)
Water content	8.12	<10
Water Soluble essence content	18.95	>10.2
Solubility of essence in ethanol	12.6	>7.2
Total ash	6	<10.2
Acid insoluble ash content	0.21	<3.4

Table 3. Phytochemical Screening Daun Miana ((*Coleus scutellarioides* L.)

Phytochemical	Result
Alkaloids	Positive
Sapponin	Positive

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Glycoside	Positive
Flavonoids	Positive
Tannins	Positive

From the results of the data tested, it can be seen that the ethanol extract of miana leaves has secondary metabolites of alkaloids, saponins, flavonoids, glycosides, and tannins, which have the potential to act as a mask to treat acne[3].

The evaluation test results for Miana leaf lip cream

The results of organoleptic testing can be seen in Table 4 below.

The evaluation test results for Miana leaf lip cream preparations can be seen in Table 5 below. There are differences in results resulting from the different formulas tested. This is due to the influence of the addition of each extract to the test preparation. The more extract the preparation retains, the thicker and more intense the color of the resulting preparation.

Table 4. Organoleptic og Miana Leaf Lipp cream

Formulation	Form	Smell	Color	Homogenous
F1	Semisolid	Rosae	Beige	Homogenous
F2	Semisolid	Rosae	Salmon red	Homogenous
F3	Semisolid	Rosae	Brick red	Homogenous

Table 5. Evaluation of Miana Leaf Lipp cream

Formulation	pH	Iritasi	Daya Sebar	Stabilitas
F1	4,64 ± 0.02	Tidak ada iritasi	6,24 ± 0.04	Stabil
F2	5,23 ± 0.04	Tidak ada iritasi	5,04 ± 0.04	Stabil
F3	5,84 ± 0.06	Tidak ada iritasi	4,13 ± 0.04	Stabil

Table 2. Examination of miana leaf simplicia content yielded 8.12 percent, water-soluble extract content 18.95 percent, ethanol-soluble extract content 12.6 percent, total ash content 6 percent, and acid-insoluble ash content

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0 for a total of 21 percent. Indonesian Materia Medika requires a water content of not more than 10%, a water-soluble extract content of not less than 10.2%, a water-soluble extract content of not less than 10.2%, an ethanol-soluble extract content of not less than 7.2%, an ash content of not more than 10.2%, and an ash content that is not dissolved in acid of not more than 3.4%. Thus, the results of determining water content, total ash content, acid-insoluble ash content, and water content meet the requirements of Indonesian Materia Medika [7].

The phytochemical screening results were positive for flavonoids and anthocyanins. Anthocyanins, which contain flavonoid components, are present in miana leaves. The natural dyes found in Miana leaves can be used as natural dyes in cosmetics because flavonoids can provide a certain color to plants in general[8].

The organoleptic test results for lip cream preparations meet the organoleptic test requirements. The lip cream preparation is in semi-solid form, producing an even cream color (F1, salmon F2, and brick red F3) and a distinctive oleum rosae odor[9]. Placing a piece of the preparation on the slide's surface, flattening it, and observing the presence or absence of coarse grains serves as the homogeneity test. The homogeneity test of the lip cream formulation shows that there are no coarse particles in the product. If there are no coarse grains in the mixture, it is considered homogeneous. Based on the results of these observations, it can be said that the lip cream preparations made meet the requirements of the preparation homogeneity test.[4,10]

The pH of lip cream preparation F1 with a concentration of 5% has a pH of 4.64, F2 with a dose of 10% has a pH of 3.82, and F3 with a concentration of 15% has a pH of 3.86, in accordance with the findings of pH testing. The pH of the lip cream preparation is in the range of the pH of the lips. Lip cream preparations are said to be good if the pH of the preparation does not exceed the pH of the lips, namely 3.8–4.7. This shows that the lip cream preparations are safe and do not cause irritation to the lips. Therefore, the pH of cosmetics should be tried to be the same or as close as possible to the pH of the lips[11]. The preparation irritant test was carried out on ten female panelists. The lip cream formulation was applied to the back of the panelists' ears for testing. Based on the data, none of the ten panelists showed any signs of irritation, such as redness, itching, or swelling. If the preparation applied to the skin does not cause any indication of irritation such as redness, itching, or swelling, then the preparation is considered non-irritating. The purpose of the irritation test is to detect whether a substance has an irritating effect on the skin or not, as well as to analyze and evaluate the characteristics of a substance when it comes into contact

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with the skin. The signs of a skin reaction are generally the same, namely redness, itching, or swelling of the skin. It can be concluded that lip cream preparations made with the F1-F3 formula do not irritate the skin[12].

CONCLUSION

Based on the research carried out, it can be concluded that:The ethanol extract from Miana leaves can be used as a lip cream preparation. The lip cream preparation from the ethanol extract of Miana leaves can be used as a natural coloring agent, has a homogeneous composition, a pH that matches the pH of the lips, does not irritate, is very popular with panelists, and is stable in storage. The concentration of miana leaf ethanol extract can affect the color of lip cream. For preparations with a concentration of 5%, it gives a cream color; a concentration of 10% gives a salmon red color; and a concentration of 15% gives a brick red color. What gives the best color is a concentration of 15%, because the higher the concentration of the extract given, the more intense the color will be.

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