FORMULATION AND ACTIVITY TEST OF EXTRACT SEAWEED LIP BALM (SARGASSUM BINDERI) AND KENANGA OIL (CANANGA OIL) AS LIP MOISTURIZER

Apriyani P, Yunahara Farida, Faizatun

Faculty of Pharmacy, Universitas Pancasila, Indonesia

Introduction

The use of cosmetics on society has become a primary requirement because its function is not only to beautify and care for themselves but also to improve and maintain the healthy skin. Skin care cosmetics include cosmetics to clean the skin (cleanser), moisturize the skin (moisturizer) and protect the skin (peeling) (1).

The elasticity and function of skin as a protector is greatly influenced by skin moisture. Therefore, water concentration of skin is essential need to maintain the flexibility and liver function. Skin contains fat and water to maintain optimum condition of skin (skin elasticity). In stratum corneum at normal humidity the water concentration is about 15-20% (2).

Seaweed (Sargassum binderi) is a species of genus Sargassum rich of vitamin C, niacin and folic acid. Seaweed also contains of protein and beta carotene which can fight premature aging by reconstructing collagen. The high polysaccharide content is also able to cause skin, so it is very well formulated into a lipbalm preparation that can make skin healthy and smooth. (3,4).

Cananga flower oil (Cananga oil) is widely used as raw material for the perfume, cosmetics, soap and emollient industries. Cananga flower oil (Cananga oil) can also be used for skin care because it contains vitamin E, which can rejuvenate the skin, maintain moisture and also skin elasticity. Based on the results of research that has been done before has been proven concentration of ylang oil (Cananga oil) as lip moisturizer contain 15%. (5).

Emollients include moisturizers that function to maintain hydration, rehydrate the skin and prevent the evaporation of water from the skin by forming a protective layer, thereby helping the skin's softening properties (6).

The function of lip balm is to form a new layer on the surface of the skin to protect lips and keep lips moist. Therefore, this lipbalm is especially needed for those who have dry and chapped lips. Lipbalm basically consists of mostly emollients, wax bases, active ingredients, flavorings, dyes and preservatives (7).

This research is to utilize seaweed and cananga flower oil as the main ingredients in making lip balm form of lip balm. The lipbalm preparation formula with different concentrations is expected to get good quality from the two active substances, namely seaweed and cananga flower oil. Based on the above then made preparations lipbalm which give effect to moisturize lips derived from extracts seaweed (Sargassum binderi) and ylang oil.

Methodology

Research method are such a phenomena that evry researcher wishes to learn. It has been observed that researchers find it difficult to conduct an in-depth analysis in their areas of specialization without a sound knowledge of the scientific process of conducting research (8). This research use a mix method, the researcher use combines a qualitative and quantitative method. The qualitative research method is a research approach used to examine natural conditions, where the researcher is the key instrument, the data collection technique is done by triangulation (combined), the data analysis is inductive, and the results of qualitative research emphasize meaning rather than generalization (9). Meanwhile quantitive method is a research method resting on positivism philosophy that is used to research population or particular sample, generally the technique to take the sample is taken randomly, the daya collection uses research instrument, the data analysis has quantitative or statistics in order to test the hyothesis that has been made. In quantitative mthod, this research was designed as an experimental research (10).

The tools used are a hot magniter stirer (Thermo brand) , rotary evaporator , analytical scales (ANB Brand) Dermalab Combo, lipbalm container. The materials used are vaseline flava, cera alba, phenoxyethanol, BHT, oleum cacao, these materials are obtained from PT. Dwilab Mandiri Scientific, cananga flower oil, Sargassum binderi.

This research includes the manufacture of seaweed extracts, preparation formulas and testing of hydration and hedonic activity tests. The sample used seaweed (Sargassum binderi) that was taken from Binuangeun beach, Wanassalam district, Banten Province.

Making Seaweed Extract (Sargassum binderi)

Seaweed is weighed as much as 200 g then extracted by maceration with 96% ethanol as much as 2 liters for 3-4 hours with the help of a magnetic stirrer. The filtrate is then evaporated at a rotary evaporator until the ethanol extract is obtained.

Lipbalm Manufacturing Procedure

In saucer porcelain insert cera alba, vaselin alba, BHT, oleum cação, melted over a water bath at a temperature of 70ºC while stirring. Then put phenoxyethanol. Cananga oil and seaweed last inserted after the temperature is not too hot. After that, put it in a container and let it freeze at room temperature.

Results

Evaluation of the Stability of Lipbalm Preparations

1) Organoleptic Observations

Observations organoleptic conducted for 30 days by way of observation of changes in the shape, color and odor of

DOI: 10.5281/zenodo.4657825

each preparation lipbalm stored at room temperature 29 0 C on days 1, 5, 10, 15, 20, 25 to day 30.

2) Homogeneity Examination

Each dosage homogeneity checked by way of applying the preparation lipbalm on transparent glass and observed in the microscope.

3) Melting point testing

Methods of observation melting temperature lipbalm used in the study is by entering lipbalm into the oven at the initial temperature of 50 ° C for 15 minutes, it was observed whether to merge or not, after which the temperature is raised 10 ° C every 15 minutes and was observed at any temperature lipbalm mu other melts .

4) Check the pH of the preparation

The examination of each pH of the preparations was carried out using a calibrated pH meter. The sample is made on a weighed 1 gram of the preparation and the preparation is melted until it melts then the electrode is immersed in the sample so that the pH value is constant. The number shown on the pH meter is the pH of the lipbalm preparation.

Evaluation on the Stability of Lipbalm Preparations

Effectiveness Test / Hydration Test

Testing was done by comparing the state of application of preparations lipbalm before and after the use on the preparation by humidity parameter values, by measuring humidity prior of treatment using the Dermalab Combo. Before being applied, the preparation is checked first, after checking the application of lipbalm, let it stay for 20 minutes, then check it again after using Lipbalm. The measurement of lip moisture was done every once in a week for four weeks of treatment.

Table 1. Lipbalm formula.

Hedonic Test

The hedonic test was done visually by the participation of 20 panelists. Each panelist was asked to apply the preparation formula made to the lips of the panelists. Then, the panelists chose which variation of the formula they liked the most.

The panelists wrote 1 if they really dislike it, 2 if they really don't like it, 3 if they don't like it, 4 if they don't like it a little, 5 if it's neutral, 6 if it likes it a little, 7 if it likes it, 8 if it really likes it and 9 if it really likes it. Parameter observations on hedonic test are moisture, odor, color, texture that is felt on the lips. Then, it calculated the percentage of preference for each preparation.

Discussion

The extraction method used to obtain seaweed extract is the maceration method using 96% ethanol solvent with an initial weight of 200 g and a final weight of 41.5 g so that the yield percentage is 20.57%.

The extract of seaweed subsequently formulated into dosage forms lipbalm with a concentration of the formula 1, Formula 2 and Formula 3, then the sample of lipbalm also being evaluated to see the physical quality of

the preparation, among others test of organoleptis, pH, melting point, homogeneity, humidity testing using the TEWL method of combo dermalab tool and hedonic test on lipbalm preparations. Table 1 shows Lipbalm formula below:

Material	F1(%)	F2(%)	F3(%)	Function
Cananga oil	3	5	7	Active substance
Seaweed	4	7	10	Active substance
Cera alba	15	15	15	Basis
Vaselin flava	30	30	30	Basis
Phenoxy etanol	0,18	0,18	0,18	Preservative
BHT	0,05	0,05	0,05	Antioxidants
Oleum cacao	Ad 5	Ad 5	Ad 5	Basis

Table 1 show the lipbalm formula with a concentration formula 1 (F1), formula 2 (F2), formula 3 (F3), and the function from the material that contains of lipbalm formula. The results of the organoleptic test for lipbalm did not change in shape, color and odor. This shows that the formula is quite stable because there is no interaction of active substances and other ingredients, the results of the organoleptic test are shown in Table 2.

Table 2 show that hedonic testing rating level assessment on 20 subjects from the spesification of hedonic and also assessment from the spesification. The results of homogeneity examinations on lipbalm preparations showed that all formulas did not show coarse grains when spread over the object, it can be said that the lipbalm preparations made had a homogeneous composition. The results of pH examinations on lipbalm preparations tested on days 1, 7, 14, 21 and 28 have a pH range of 4.5-6.0 which corresponds to the physiological pH of the lip skin, namely 4.5-6.0, seen in the figure.

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DOI: 10.5281/zenodo.4657825

Tabel 2. Hedonic Testing Rating Level Assessment on 20 Subjects

Spesification	Assessment
Very Poor	1
Unfavorable	2
Dislike	3
Somewhat unfavorable	4
Neutral	5
Somewhat favorable	6
Like	7
Favorable	8
Excellent	9

This shows that the lipbalm preparation is safe and does not cause irritation to the lips. The more alkaline or acidic the material on the skin, the more difficult it is for the skin to neutralize it and the skin can become dry, cracked, sensitive and prone to infections (11).

The results of the lipbalm melting temperature examination showed that the lipbalm preparations of cananga flower oil and seaweed melted at a temperature of 50ºC. The melting temperature of lipbalm based on SNI 16-5769-1998 was 50-70ºC (12). This shows that the lipbalm preparation with the concentration of cananga flower oil and seaweed has met the melting temperature requirements. The ideal lipbalm melting temperature is actually set to a temperature close to the lip temperature, varying between 36-38°C. But because it has to pay attention to the factor of resistance to surrounding weather temperatures, especially temperatures in the tropics, the melting temperature of lipbalm is made higher, namely in the range of 55-75°C so that it does not melt when stored at room temperature and maintains its shape during the distribution, storage and use process.

Testing the effectiveness of moisture is carried out on the arm, testing by comparing the state of the arm before and after using the preparation with the moisture parameter value (moisture). Measurement of the initial moisture condition of the arm before treatment using the Combo Dermalab Tool.

The data obtained on the humidity of the arm will be analyzed using the TEWL method. Graph data (Figure I I) on the effectiveness test of the preparation showed that for 28 days with the provision of lipbalm, there was an increase in humidity seen in Form 3.

The results obtained from the overall test with 2 temperatures, namely a temperature of 30ºC and a temperature of 4ºC had an increase in humidity. The statistical analysis used was SPSS with the one way ANOVA method. Analysis of variations on the effect of lipbalm concentration on the day 1 hydration test obtained a regression value (0.120> 0 , 05) and day 7 obtained a regression value (0.311> 0.05), which means there is no significant difference. Day 14 (0.031 <0 , 05), day 21 (0.015 <0.05), day 28 (0.01 <0.05), which means that there are significant differences from several formulas.

The water content greatly determines the elasticity of the top of the skin so that the skin will appear soft and smooth. Lack of oil content on the surface of the skin causes the water content on the lower surface of the keratin layer to evaporate more quickly, causing dryness of the skin (13). The hedonic test results on 20 panelists showed that the 20 panelists liked the lipbalm preparation.

Conclusion

Based on the result and discussion above, the researcher can concluded the data obtained from the overall test with 2 temperatures, namely a temperature of 30°C and a temperature of 4°C had an increase in humidity. The higher percentace of the lip balm material affect the third formula (F3) which increase humidity of skin within the high significant differences among the three formulas.

The suggestion for further research is the researcher hope this analysis can be developed again through another methodology or analysis. So that, this research can become a interesting topic and deepth analysis.

Formulation and activity test of extract seaweed lip balm (sargassum binderi) and kenanga oil (cananga oil) as lip moisturizer

Apriyani P, Yunahara Farida, Faizatun

Introduction: This research is about formulation and activity test of seaweed extract (Sargassum binderi) and sunflower oil kenaga (Cananga oil) as lip moisturizer. The purpose of this study was to utilize natural ingredients and determine the evaluation of lipbalm from seaweed and cananga flower oil which has a function to increase the moisture level of lip. **Methods:** The formulation of lipbalm was made by three concentrations, formulation 1, formulation 2 and formulation 3. Evaluation was done to test the skin irritation, skin hydration and hedonic test. The method of skin hydration helps to enhancer and moisture the skin by TEWL (transepodermal water loss) tool of derma lab combo. **Results:** The result of this research showed that all the formulas does not irritate the skin,

DOI: 10.5281/zenodo.4657825

moisturize and preferred by the panelists. In the third formula, it has a result to increase the humidity of skin within the high significant differences among the three formulas. **Conclusion:** Therefore, the lip balm formulation increase humidity of skin within the high significant differences among the three formulas.

Keywords: Seaweed; Ylang flower oil; Lipbalm formula; Moisture.

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DOI: 10.5281/zenodo.4657825