

Formulation of Rose Myrtle Fruit (*Rhodomyrtus Tomentosa* (Aiton) Hassk) Extract as a Natural Colors in Lipgloss

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Abstract: Rose Myrtle is a wild plant that grows in tropical areas. Rose Myrtle is included in the Myrtaceae tribe which has been used as an herbal medicine to treat dysentery and increase platelets. One of the plants that can be made in lip color is Rose Myrtle fruit, because it contains anthocyanin as a natural coloring agent. From the observations of the shape, color and odor on the 1st day to the 30th day the preparation did not change. Lipgloss with 10% Rose Myrtle fruit extract concentration is red, 12% concentration is blood red, while the 14% concentration gives a deep redcolor.

1 INTRODUCTION

Lips are the second attraction after the eyes. If the condition of the lips is not healthy or even experiencing health problems, it will reduce the overall attractiveness of the face. In order to obtain healthy and attractive lips, then treatment can be done both from within and outside, such as the tips below: Drink water a day at least 8 glasses so as to prevent dehydration that causes dry lips, meet the intake of vitamin B, vitamin C, and substances iron, so as to avoid the pain of chapped lips. Vitamin C contained in these foods is useful as an antioxidant that can neutralize free radicals produced by the processes produced by metabolic processes in the body, so that tissue damage is reduced (Chomaria, 2018).

Lip gloss is a product or preparation that can give a glossy and shiny effect on the lips; it helps to increase the volume of lips, sometimes it also gives a slight color effect, feels soft and does not dry on the lips. Lip gloss also works to help increase the volume of lips and make the lips look denser when used with lipstick. Lately, lip gloss preparations are quite popular with the public and when use lip gloss, it must be easily applied and gives a shiny impression (Supriyatna, 2017).

Rose Myrtle is a type of wild plant with woody trees growing wildly in open fields that can reach up 4 meters in height. The leaves are hard, 5 - 7 cm long and 2 - 3.5 cm wide, the surface is shiny, the lower surface is smooth white or yellowish haired,

the flowers are hidden or in 2 or 3 groups, a single flower or in a "dichasium" flowering consists of 3 flowers, flowering stems up 1 cm long, 0.5-2.5 cm flower stalks, the fruit is purplish red with petals with non-deciduous petals, 10-15 mm long and it can be eaten (Mohamad , 2014).

The making of lip gloss preparations in this study was carried out with variations in the concentration of ethanol extract of Rose Myrtle fruits, namely 10%, 12% and 14% so that it produces a difference on color intensity. The next process is to do some evaluation tests on lip gloss preparations to ensure the physical quality of lip gloss preparations, namely color dispersion test (homogeneity), stability test, pH test preparation, polishing test, irritation test and hedonic test.

The examination results on the color dispersion test (homogeneity) showed that lip gloss preparations from Rose Myrtle fruit extract were evenly dispersed and free of particles that were still clumping when it is tested by using glass object. Variation in the concentration of Rose Myrtle fruit extract used to produce color differences in lip gloss preparations. Lip gloss with a concentration of 10% Rose Myrtle fruit extract is red; a concentration of 12% is blood red while a concentration of 14% is scarlet. The lip gloss odor is a distinctive aroma.

Lip gloss stability test results showed that all preparations made remained stable when it is stored at room temperature for 30 days. The parameters observed in this physical stability test include changes in the shape, color and odor of the

preparation. From the form observations results on 1st to 30th day the preparation did not change on shape. From the color observations results on the 1st to 30th day the color on the lip gloss preparations remained stable and there were no changes in color due to the addition of concentration of Rose Myrtle fruit extract dye, so the resulting of lip gloss colors became more concentrated.

All the necessary ingredients are weighed, BHT is dissolved with a little castor oil, stir them until they are homogeneous (period I), methylparaben is dissolved into Rose Myrtle fruit extract and they are mixed into (period I), then stir them until they are homogeneous (period II), lanolin with beeswax are melted down on a water bath (period III), period III is mixed with the mixture into period II, stir them until they are homogeneous (period IV), paraffin liquid is mixed in period IV then stirred them until they are homogeneous (period V).

Traditionally, Rose Myrtle leaves can be used to stop bleeding, relieve pain such as chest pain, reduce back pain and leaf collisions can be used to compress the forehead to reduce body temperature during fever. In Malaysia, leaf stew is taken to treat diarrhea and as a medicine for stomach ache, while in Indonesia it is used to heal wounds (Putri, 2015).

In the West Sumatra, *Rhodomyrtustomentosa* (Aiton) Hassk (*Myrtaceae*) known as *karamuntingang*, it has traditionally been that used as an anthelmintic in humans, medicine for wounds, scabies, headaches, abdominal pain and diarrhea, retain bleeding and prevent infection after childbirth. The fruit is used as an antidote and diarrhea, and it can be made of jam, which is in India it is called *Thaonthi*.

The wood contains dyes that can discolor teeth, while the Rose Myrtle root extract is used for the treatment of heart disease, diarrhea, reducing pain after childbirth and for the scar treatment (Nasution, 2014). In Rose Myrtle plants, after it is done photochemical testing, there are chemical compounds such as flavonoids and anthocyanins. Anthocyanins are classified as pigments called flavonoids which are generally soluble in water. Anthocyanin pigment colors are red, blue, and purple. Appearance of reddish purple Rose Myrtle fruit shows that there is coloring naturally which is contained in it (Jumiati, et al 2017).

According to Rose Myrtle fruit has a large antioxidant activity. Antioxidants are defined as inhibitors that work to inhibit oxidation by reacting with reactive free radicals to form non free radical compounds that are not reactive and relatively stable. This plant stems and twigs have large

antioxidant activity, and weak toxicity. Explained that ethanol extract of hard mounting leaves has anti-bacterial and antiinflammatory activity. This plant (*Rhodomyrtus tomentosa*) contain flavonoids, saponins, tannins, and triterpenoids. Flavonoid content is a powerful antioxidant that can reduce lipid peroxidation, increase epithelialization speed, and is anti microbial.

In a study conducted by (Jumiati, et al. 2017) by using Rose Myrtle fruit as a natural coloring agent in food, convincing researchers that Rose Myrtle fruit can also be used as a natural coloring agent in cosmetic preparations, namely lip gloss.

Judging from the content of flavonoids that have Rose Myrtle fruit, this fruit has the potential to be used as natural dyes in cosmetic preparations. Dyes (pigments) are dyes naturally which is found in plants and animals. The usage of natural dyes for cosmetic preparations does not cause health losses, as well as synthetic dyes that are increasingly used. Among synthetic dyes that are very dangerous for health so that their usage is prohibited are Rhodamin B. Red dyes which are widely found in nature are grouped into two groups namely carotenoids and anthocyanins. Anthocyanins are classified as a pigment that is called flavonoids which are generally soluble in water. Anthocyanin pigments which are red, blue, violet; they are usually found in flowers, fruits and vegetables. The appearance of Rose Myrtle fruit which is purplish red indicates that there is a natural coloring contained therein. One of the flavonoid compounds contained in Rose Myrtle fruit is anthocyanin. Anthocyanins are known to function as natural dyes.

In this research, Rose Myrtle fruit is used as a natural color because of the existence of literature or references from journals (Jumiati, et al. 2017) which states that we can utilize the natural wealth that is around us as additional material. Natural products that we can use include those from wild plants. The role of wild plants (not cultivated) is very diverse ranging start from its use as medicine, cosmetics, agriculture, up to the food industry. One of the wild plants that have potential as natural dyes is Rose Myrtle fruit (*Rhodomyrtus tomentosa* (Aiton) Hassk) (Jumiati, et al. 2017).

2 MANUSCRIPT PREPARATION

2.1 Place and Time

This research is an experimental type. Experiments are experimental activities that is aimed at knowing

all the symptoms or effects that arise, as a result of the existence of certain treatments.

2.2 Research Tools

The study tools were stirring rods, 1000 mL glass beakers, 250 mL, 100 mL (Pyrex), brown bottles, glass sample bottles, vaporizer cups, 250 mL Erlenmeyer (Pyrex), freeze dryers, 100 mL measuring cups, 10 mL (Pyrex), gauze, parchment paper, filter paper, ash-free filter paper, porcelain crushers, mortar and stamper, oven, water bath, tube clamp, filter, dropper, porcelain, Rotary Evaporator, horn spoon, spatula, test tubes, furnaces, digital scales, and containers.

2.3 Research Material

The materials used in this study were Aquadest, Butylated Hydroxytoluene (BHT), beeswax, Rose Myrtle fruit extract, 96% ethanol, lanolin, castor oil, methylparaben, and paraffin liquid.

2.4 Sampling Method

The sample used is fresh Rose Myrtle fruit that has been ripe that grows in the area of Senggarang, Air Raja Village, Tanjung Pinang Timur Sub-district, Tanjung Pinang, Riau Islands. The sample collection is done purposively without comparing with other regions..

2.5 Sample Preparation

Samples of Rose Myrtle (*Rhodomyrtus tomentosa* (Aiton) Hassk) were taken from the area of Senggarang, Air Raja Village, Tanjung Pinang Timur Sub-district, Tanjung Pinang, Riau Islands. Rose Myrtle samples are taken that are ripe or purplish red, then cleaned and washed with running water. After it, the sample is dried without direct sunlight and then it is crushed by using a blender, the sample is ready for extraction.

2.6 Phytochemical Testing

Phytochemical tests were carried out on dry samples, namely the flavanoid test and the anthocyanin test.

2.7 Extraction Preparation

As much as 1 kg of simplicia powder is put into a dark glass container, 96% ethanol is added until they

are submerged and then covered and left for 5 days and protected them from light while stirring frequently, then filtered them with gauze, the filtrate is accommodated (first filtrate). Then the pulp is macerated again with 96% ethanol for 2 days and then filtered them by using gauze. The results obtained are mixed with the first filtrate and put in a dark bottle, then evaporated with the assistance of a Rotary Evaporator at $\pm 50^{\circ}\text{C}$, then freeze drying by using a freeze dryer at -40°C (Risnawati, 2012), (Pracima, 2015).

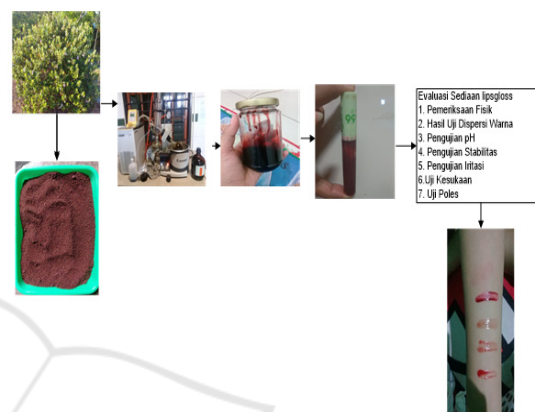


Figure 1: Scheme of Access Method

2.8 Preparation of Lip Supplies

All the necessary ingredients are weighed, BHT is dissolved with a little castor oil, stir them until they are homogeneous (period I), methylparaben is dissolved into Rose Myrtle fruit extract and they are mixed into (period I), then stir them until they are homogeneous (period II), lanolin with beeswax are melted down on a water bath (period III), period III is mixed with the mixture into period II, stir them until they are homogeneous (period IV), paraffin liquid is mixed in period IV then stirred them until they are homogeneous (period V), a castor oil is added in period V and then they are homogenized (Widayanti, 2014). Maceration results from 4 kg of wet Rose Myrtle fruit is obtained as much as 1 kg of dried Rose Myrtle fruit, and then after the evaporation, it is produced 96.58 grams of thick extract of Rose Myrtle fruit.

Table 1: Scheme of Access Method

No	Bahan	F1	F2	F3	F4	Function
1	Rose Myrtela Fruit Extract	-	10	12	14	Coloring Agent
2	Beewax	-	3	3	3	Base
3	Paraffil Liquid	-	10	10	10	Emollient
4	Lanolin	-	10	10	10	Emollient
5	BHT	-	0,1	0,1	0,1	Anti Oxidant
6	Methyl Paraben	-	0,1	0,1	0,1	Preservative
7	Castor Oil	-	100	100	100	Solvent

2.9 The Evaluation Test on Lip Gloss preparations

Evaluation tests on lip gloss preparations include color dispersion tes (Homogeneity) observation of changes in shape, color and odor of lip gloss preparations which is carried out on each preparations which is camed out on each preparation during storage at room temperature on 1st, 7th, 15th day and then every 3th until 30th day it is done pH test on the preparation y using natura dyes of rose myrtle fruit extracts to find out whether lip gloss that is made can cause irritation to the skin or not polish test which is performed on the preparation of each formulasi by polishing it five times and observing the color and the preference test is carried out to dtermine the preferences levels of the panelists on the preparations made (Karmila, 2013).

3 RESEARCH RESULTS

3.1 Rose Myrtle Fruit Extraction Results

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3.2 Phtochemical Screnning Results

The results of Screening Result test on lip gloss preparations showed that lip gloss preparations the

plant name is Rose Myrtle Fruit has Flavonoid and Antosyanin positive.

Table 2: Screnning of Phytochemical

The Plant Name Under Study	Flavonoid	Antocyanin
Rose Myrtle Fruit (<i>Rhodomyrtus Tomentosa</i> (Aiton) Hassk	+	+

3.3 Physical Examination Results of Lip Gloss Preparation

Lip gloss with a concentration of 10% are red, lip gloss with a concentration of 12% are blood red while lip gloss with a concentration of 14% are scarlet with a distinctive aroma.

3.4 Color Dispersion Test Results (Homogeneity)

The results of pH test on lip gloss preparations showed that lip gloss preparations with a concentration of 10% had a pH of 6.3 lip gloss preparations with a concentration of 12% had a pH of 6.4 while lip gloss preparations with a concentration of 14% had a pH of 6.2.

Table 3: Lipgloss dosage stabilization test results.

	1	2	3	1	2	3	1	2	3
1	B	B	B	M	MD	MT	BK	BK	BK
7	B	B	B	M	MD	MT	BK	BK	BK
15	B	B	B	M	MD	MT	BK	BK	BK
20	B	B	B	M	MD	MT	BK	BK	BK
25	B	B	B	M	MD	MT	BK	BK	BK
30	B	B	B	M	MD	MT	BK	BK	BK

Note:

B: Shape (Good);

BK : Baukhan

3.5 Irritation Text Result

The results of Irritation Text Result on lip gloss preparation and all of panelis is not feel Irritattion on all Concentration, showed th at lip gloss preparations with a concentration of 10% had a pH of 6.3 lip gloss preparations with a concentration of 12% had a pH of 6.4 while lip gloss preparations with a concentration of 14% had a pH of 6.2.

Table 4: Irritation Text Results

Reaction	Panelists														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Erythema	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Papules	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vesicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Edema	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note :

- 1. No reaction 0
- 2. Erythema +
- 3. Erythema and Papules ++
- 4. vesicles +++
- 4. Edema and Vesicles ++++

3.5 Polish Test Result

Lip gloss with a concentration of 10% are red, lip gloss with a concentration of 12% are blood red while lip gloss with a concentration of 14% are scarlet with a distinctive aroma.

Table 5: Polish Test Results

Lip gloss preparation 10%	The color is less clear but it is homogeneous
Lip gloss preparation 12%	The color is clear and homogenous
Lip gloss preparation 14%	The color is clear and homogenous

3.6 Hedonic Test

Lipgloss with a hedonic test The results of Hedonic Text Result on lip gloss preparation and all of panelis is not feel Irritattion on all Concentration, showed that lip gloss preparations with a concentration of 10% had a pH of 6.3 lip gloss preparation concentration in 14% is very good.

Table 6: Hedonic Test Result

1	22	1	2	3
2	24	1	2	3
3	24	1	2	3
4	23	2	2	2
5	22	2	2	2
6	21	2	2	2
7	21	2	2	2
8	21	2	3	3
9	22	1	3	3
10	22	1	3	3
11	23	3	3	3
12	23	1	3	3
13	23	1	1	3
14	22	1	1	3
15	22	1	1	3

4 DISCUSSIONS

From the results of phytochemical screening in the results table, it is known that Rose Myrtle fruit (*Rhodomyrtus tomentosa (Aiton) Hassk*) positively contains flavonoids and anthocyanins. Phytochemical results show that Rose Myrtle fruits contain flavonoids which are characterized by the formation of red pigment on the amyl alcohol layer. And it also contains anthocyanin which is marked by the occurrence of red color that will not fade on the addition of HCL 2N. Rose Myrtle fruit contains anthocyanin which is included flavonoids.

The study tools were stirring rods, 1000 mL glass beakers, 250 mL, 100 mL (Pyrex), brown bottles, glass sample bottles, vaporizer cups, 250 mL Erlenmeyer (Pyrex), freeze dryers, 100 mL measuring cups, 10 mL (Pyrex), gauze, parchment paper, filter paper, ash-free filter paper, porcelain crushers, mortar and stamper, oven, water bath, tube clamp, filter, dropper, porcelain, Rotary Evaporator, horn spoon, spatula, test tubes, furnaces, digital scales, and containers.

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with reactive free radicals to from non free radical compounds that are not reactive and relatively stable. This plant stems and twigs have large antioxidant activity, and weak toxicity. Explained that ethanol extract of hard mounting leaves has anti-bacterial and antiinflammatory activity. This plant (*Rhodomyrtus tomentosa*) contain flavonoids, saponins, tannins, and triterpenoids. Flavonoid content is a powerful antioxidant that can reduce lipid peroxidation, increase epithelialization speed, and is anti microbial.

In a study conducted by (Jumiati, et al. 2017) by using Rose Myrtle fruit as a natural coloring agent in food, convincing researchers that Rose Myrtle fruit can also be used as a natural coloring agent in cosmetic preparations, namely lip gloss. This research is to know the percentage of yield and to know the quaity metabolite identification.

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The Use of traditional medicine os the main choice of society in addition to the inability of people to buy modern medicines, raw materials easily obtained and the price is economical. For examples is often used as an alternative tratment is known to contain chemical compound that are able to treat and is relatively safe is used properly and without abuse if the information effects and i relatively is quite clear. Therefore researchers are intersted quality and to achieve it need to be standaradized.

The examination results on the color dispersion test (homogeneity) showed that lip gloss preparations from Rose Myrtle fruit extract were evenly dispersed and free of particles that were still clumping when it is tested by using glass object. Variation in the concentration of Rose Myrtle fruit extract used to produce color differences in lip gloss preparations. Lip gloss with a concentration of 10% Rose Myrtle fruit extract is red; a concentration of 12% is blood red while a concentration of 14% is scarlet. The lip gloss odor is a distinctive aroma.

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Based on the irritation tests results conducted on 15 panelists which is conducted by applying lip gloss preparations to certain area behind the ear and it is left open for approximately 24 hours, it showed that all panelists gave negative results to the irritation reaction. From the lip gloss preparation test which is carried out on 15 panelists, it produced good polish and evenly intensive and homogeneous color when it is applied to the skin of forearm. Based on the hedonic test data on 15 panelists, it is known that the most preferred lip gloss preparation is the concentration of Rose Myrtle fruit extract 14% with a hedonic percentage of 2.8% panelists very fond of this preparation. Lip glosses preparations with concentration of 14% Rose Myrtle fruit extract are easily polished, clear and bright colors, and homogeneous, with a deep red color so that many panelists like it because of its bright color. Lip gloss preparations with 12% Rose Myrtle fruit extract with hedonic percentage of 2.3% panelists liked this preparation.

Maceration results from 4 kg of wet Rose Myrtle fruit is obtained as much as 1 kg of dried Rose Myrtle fruit, and then after the evaporation, it is produced 96.58 grams of thick extract of Rose Myrtle fruit.

5 CONCLUSIONS

- a) Rose Myrtle fruit extract dyes can be used as natural dyes in lip gloss dosage formulations because it contains anthocyanin and at the time of color stability testing on lip gloss preparations did not change.
- b) The more concentration of Rose Myrtle fruit extracts used in the formulation so it is more concentrated the color of lip gloss preparation that is produced. Lip gloss preparations with concentration of 10% are red, with concentration of 12% are blood red, and while with concentration of 14% are scarlet.
- c) The Use of traditional formulation is the main choice of society in addition to the inability of people to byu modern cosmetic.

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