

Formulation and Evaluation of Herbal Lipsticks Using Punica Granum and Mangifera Indica

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ABSTRACT:

Since natural cosmetics are safe and easy for women to use, herbal lipsticks are growing in popularity. It has been found that synthetic coloring compounds can cause allergic reactions and are carcinogenic. The purpose of our study was to make and evaluate herbal lipstick utilizing natural edible coloring ingredients such as extracts from mangoes and pomegranates. To make herbal lipstick, a variety of natural ingredients was used, including beeswax, coconut oil, vanilla, and rose essence. The synthesized herbal lipstick's color, texture, pH, melting, breaking, softening, surface imperfections, aging, and perfume stability were evaluated, along with comparisons to commercially available standard formulations[1]. Herbal lipsticks don't usually cause any problems. It is safe to use and has chemicals or natural nutrients that help keep lips healthy. Lipstick's synthetic colorants, which are made of hazardous substances, are quite harmful to our skin. Regular use of synthetic coloring over an extended period of time can cause serious health problems like discoloration, lip cancer, and skin irritation. Lipstick can cause rashes, allergy, nausea, and lip dryness, among other negative side effects. There are also some potentially lethal adverse effects. Because they are safe, cosmetics made with herbal substances have become more and more popular worldwide. The summary of herbal lipstick in this research article covers its benefits, desirable characteristics, formulation flaws, and evaluation.[2]

KEY WORDS: Herbal lipsticks, punica granum, Mangifera indica, anti-oxidant, chemical constituents.

I. INTRODUCTION:

As defined by science, cosmetics are "substances of diverse origin, scientifically compounded and used to cleanse, alleviate skin troubles, cover up imperfections, and beautify." In this study, the term is used more broadly to include mouth hygiene. Cosmetics are the materials used to improve a person's physical appearance. Coloured contact lenses, hair colors, hair sprays, deodorants, skincare creams, lotions, powders, perfumes, lipsticks, fingernail toenail paint, baby goods, bubble baths, and many other items are considered cosmetics. Both developed and developing nations are quite interested in these products. Herbal cosmetics are a priceless gift from nature and are in increasing demand globally. The beauty regimen can be satisfied with a variety of herbal products. The adverse effects of synthetic preparation are the personal healthcare system's weakness. People are choosing herbal medication as a result of this.[3]

An innovative method of applying and maintaining lip color is using edible lipsticks. Herbal lipsticks, in contrast to traditional lipsticks, are made with natural substances that are safe to eat and provide a distinctive sensory experience in addition to a hint of color. This study will examine the possible benefits of edible lipsticks over conventional alternatives, including the removal of potentially dangerous chemicals and the opportunity to add more health advantages from natural components. Without the use of artificial dyes, herbs offer a wide range of natural pigments that produce a striking shade of color [4-6].

In certain cases, customers may be harmed by the frequent use of synthetic items that contain ingredients like lead, petroleum,

and phthalates. These products can lead to health issues like allergies, asthma, and cancer in addition to causing dry, chapped lips and lip irritations. Eating and drinking while wearing lipstick or licking one's lips might exacerbate the issue. It is important to pay attention to dangerous substances like lead in lipsticks because of their neurotoxic nature and long-term exposure. Accordingly, the current review's objective is to examine the data on lipsticks in order to provide information on their history, the materials used to prepare them (with a focus on natural and artificial ingredients), production techniques, and characterization.[7]

Herbal lipsticks include natural waxes like beeswax and candelilla wax, as well as oils like shea butter and coconut oil, in contrast to conventional lipsticks that may contain artificial additives like parabens and phthalates. In general, sensitive skin responds better to these natural components because they are less irritating. Components with well-known calming and moisturizing qualities are included in many herbal lipsticks. Fatty acids included in shea butter and cocoa butter help seal in moisture and maintain the suppleness and softness of lips. Popular natural component calendula contains anti-inflammatory qualities that help relieve sore or chapped lips [8].

Aim and scope of the present work:

The present work was designed on the basis of various approaches of study on the herbal lipsticks. The ingredients were collected and lipsticks were prepared and evaluation studies were carried out and results were tabulated.

Materials and methods:

Materials: soft paraffin, bees wax, coconut oil, sesame oil, rose water, vanilla essence These are the different components used for herbal lipstick. Coconut oil, sesame oil, rose water and vanilla essence were bought from the nearest market. In the laboratory, beeswax, paraffin wax, and coconut oil were utilized.

Collection of plant materials: Pomegranate and mango were purchased from the local market.

Extraction of pomegranate:[9]

The pomegranate fruit was peeled and cleaned with gentle care. The fruit flesh was separated from seeds and the juice obtained is filtered using a muslin cloth. The filtrate was dried under sunlight for a day. After a day, the remaining moisture content was dried using hot air oven at 40-60⁰ C for a period of 6-10 hours. The dried powder was grounded and then sieved using sieve no 100. The fine powder then collected and stored in an air tight container under room temperature.

Extraction of Mango: [10]

The mango fruits were thoroughly cleaned, peeled and deseeded using a knife which is been disinfected. The mango is then cut into pieces, the pieces are made into juice using a juicer at high speed. The juice obtained is filtered using a muslin cloth. Now the filtered liquid is poured into a stainless-steel tray and subjected to drying for about 8 hours. The dried powder was collected and stored in an airtight glass container under room temperature.

Formulation of Natural Lipstick:[11]

The primary components used to make lipsticks include waxes, oils, colorants, and fragrances. Each ingredient weight and proportion in lipsticks is calculated. The general formulation of lipsticks consists of four main ingredients such as bees wax, white soft paraffin, natural oil, rose water. Each ingredient has its own property and shows appropriate effect on lips. The bees wax acts as thickening agent, white soft paraffin as base where as natural oil shows moisturizing effect on lips and rose water works as hydrating agent on lips.

Preparation of mango lipsticks with their prescribed ingredients and quantities:

- i. The weighed quantities of bees wax, white soft paraffin were melted in porcelain dish on water bath.
- ii. Simultaneously mango powder was mixed with coconut oil and heat it to a luke warm temperature in another porcelain dish.
- iii. Combine both the mixtures together to obtain a uniform mixture.
- iv. Now add rose water to the mixture and mix it well.
- v. The mixture is then poured into moulds and placed in a refrigerator.
- vi. After solidification, lipsticks were removed from mould and used for further evaluation.

S.NO	INGREDIENTS	QUANTITY		
		M1	M2	M3
1.	Bees wax	2.5g	2.5g	2.5g
2.	White soft paraffin	0.75g	0.75g	0.75g
3.	Coconut oil	0.5 ml	1ml	1.5 ml
4.	Mango powder	2g	2g	2g
5.	Rose water	1ml	1ml	0.75g

Preparation of pomegranate lipsticks with their prescribed ingredients and quantities:

- i. Melting the measured amounts of beeswax and white soft paraffin in a porcelain dish over a water bath.
- ii. In another porcelain dish, pomegranate powder and coconut oil were combined at the same

time and heated to a lukewarm temperature.

- iii. Combine both the mixtures, mix thoroughly to get a uniform mixture
- iv. Add rose water to the above prepared mixture, mix well.
- v. The prepared mixture was poured in a mould and refrigerated.

S.NO	INGREDIENTS	QUANTITY		
		P1	P2	P3
1.	Bees wax	2.5g	2.5g	2.5g
2.	White soft paraffin	0.75g	0.75g	0.75g
3.	Sesame oil	1.0 ml	1.5 ml	2ml
4.	Pomegranate powder	2g	2g	2g
5.	Rose water	1ml	1ml	1ml

Evaluation tests :

- A. **Melting point:** A crucial factor in lipstick formulation is the melting point, which indicates the upper limit of safe storage. The method of capillary tubes was used to determine the melting point of the lipstick formulation. About 50 mg of melted lipstick was taken and put into a glass capillary tube that had been opened on both ends. For two hours, the capillary was chilled with ice and secured with a thermometer. A capillary thermometer was positioned deep into a beaker filled with water that was set on a heating plate and stirred with a magnetic stirrer. Slowly and at a set speed, heating and stirring were initiated. Melting points were defined as the temperatures at which materials flowed through capillary tubes [12]
- B. **Surface anomalies:** Surface flaws such crystallization, mold and fungal contamination, wrinkles, liquid and solid fatty substance exudation, etc., were used

to study this.[12]

- C. **Breaking point:** The purpose of this test was to determine the highest load that lipstick could bear before breaking. This test determines the lipstick's strength. One inch from the edge of support, the prepared herbal lipstick was positioned horizontally in a socket. At 30-second intervals, the weight was progressively increased by a predetermined amount (10 gm), and the weight at which it broke was regarded as the breaking point.
- D. **Color and texture:** Using skin application and ocular examination, the color and texture of the formulated and marketed herbal lipsticks were ascertained[13]
- E. **pH test:** Under ideal circumstances, a digital pH meter was used to measure the pH of both designed and commercially available herbal lipstick.[14]
- F. **Solubility test:** Both commercially available and manufactured herbal lipsticks were dissolved in a variety of solvents to

determine their solubility in each[15]

- G. **Aging stability:** The prepared herbal lipsticks were kept at 4°C in the refrigerator, 20–25°C at ambient temperature, and 30–40°C for one hour. The following parameters were noted: bleeding, catering, blooming, and streaking [16]
- H. **Skin irritancy test:** It is done by putting marketed herbal lipsticks and other cosmetics on the skin for ten meters [17]

II. RESULTS AND DISCUSSION:

Several steps in the general technique for making herbal lipstick were used to successfully manufacture the formulation of herbal edible lipstick. The following table shows the results of several assessment tests conducted on the prepared herbal edible lipstick in order to verify its safety and effectiveness. All the prepared formulations give satisfactory results. Out of all the formulations M3 from mango lipsticks and P3 from pomegranate lipsticks shows good texture and better spreadability.

Evaluation results of pomegranate lipsticks:

S.no	Code	Surface anomalies	Aging stability			Skin irritation	Softening point	Color and texture	Mp	Hardness	pH	Spread ability	Breaking point
			20-30 ^o c	30-40 ^o c	10-20 ^o c								
1.	P1	No defects	stable	stable	stable	No	54 ^o c	Crimson pink	56 ^o c	2.0	5.1	Satisfactory	28
2.	P2	No defects	stable	stable	stable	No	52 ^o c	Crimson pink	54 ^o c	1.5	5.3	Satisfactory	25
3.	P3	No defects	stable	stable	stable	No	50 ^o c	Crimson Pink	53 ^o c	1.4	5.7	Good	22

Evaluation results of mango lipsticks:

S.no	Code	Surface anomalies	Aging stability			Skin irritation	Softening point	Color and texture	Mp	Hardness	pH	Spread ability	Breaking point
			20-30 ^o c	30-40 ^o c	10-20 ^o c								
1.	M1	Found certain incomplete fillings and slight rough surfaces.	stable	stable	stable	No	50 ^o c	Yellow	52 ^o c	1.5	5.2	satisfactory	24
2.	M2	Found certain incomplete fillings and slight rough surfaces.	stable	stable	stable	No	52 ^o c	Yellow	54 ^o c	1.7	5.4	satisfactory	26
3.	M3	Smooth surface.	stable	stable	stable	No	57 ^o c	Yellow	58 ^o c	2.0	5.8	good	31

III. CONCLUSION:

According to the study's findings, herbal lipstick may be effectively made with a variety of natural substances, including coconut oil, white beeswax, vanilla and rose essence, pomegranate extract, and mango

extract. This makes it a superior alternative to synthetic coloring agents, which can have a variety of negative effects. Following extensive clinical trials, consumers can benefit from this herbal lipstick in a safe and effective manner.

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