



Formulation and evaluation of herbal lipstick by using eco-friendly natural dye from pomegranate rind

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Abstract

Because natural materials are simple to handle and apply, herbal cosmetics are becoming more and more accepted in society. Herbal is a sign of safety that has no negative side effects. The goal of the current research was to develop and assess herbal lipstick since it uses more natural colourants and has fewer adverse effects. A cosmetic item called herbal lipstick includes pigments, waxes, oils, aroma, preservatives, antioxidants, and colours. The formulation of lipstick is intended to enhance and preserve the attractiveness of lips. Women can use and manage it with ease. Lipsticks made from herbs have little adverse effects. Numerous organic components or nutrients that are safe for lips and maintain their health are included in the creation of herbal lipstick. Natural lipsticks don't contain any dangerous ingredients. Given the various benefits of herbal lipstick, it should be used to shield lips from drying out and cracking.

Keywords: Herbal lipstick, natural colourants, cosmetics

Introduction

The term "cosmetics" comes from the Greek word "kosmtikos," which denotes strength, order, and ability in beautification. The definition of cosmetics states that they are "substances of various origin, scientifically compounded and used to cleanse, alleviate skin problems, cover up flaws, and beautify." Beauty products have incorporated into every woman's existence. Plant cosmetics are items created with a variety of legal cosmetic ingredients, but one or more plant ingredients are added for specific aesthetic advantages. They go by the name "herbal cosmetics". Shampoo, lipstick, cream, mascara, eye makeup, foundation, and face cleansing are examples of common cosmetics¹. Nowadays, use of cosmetics increased. Synthetic colouring agents may be harmful to health, as sometimes during the food lipstick may be eaten. So to overcome this type of situation, herbal lipstick was formulated. Use of herbal lipstick is increasing day by day, as herbal cosmetics have minimal or no side effect². Lipstick is a cosmetic product available in various design, styles and packaging material.

Lipstick has many benefits, including preventing dryness and cracking, brightening your smile, and moisturizing your lips. However, not all lipsticks are created equal. Herbal lipsticks, which use ingredients like bees wax, castor oil, and vitamin E, offer the added benefit of being free of harmful chemicals like paraben, sulfate, phthalate, and others¹.

According to recent studies, a large portion of the population in many developing countries

heavily relies on traditional doctors and medicinal plants to satisfy their basic medical requirements. Although modern medicine may be available in certain countries, homegrown remedies (phytomedicines) have typically maintained their reputation for social and cultural reasons. This lipstick was made using natural components including Bixa seeds, beetroot root, olive oil and powdered ripe Shikakai fruit. The current endeavour was imagined by us to create herbal lipsticks with little to no side effects that would be widely utilized by the ladies in our communities with great assurance and happiness due to the different negative consequences of synthetic preparations already accessible^{2,3}.

Lipstick

In ancient Mesopotamia, an unpolished piece of stone was first used as lipstick. Lip colouring has a long history that goes back to the Stone Age. Lipstick was first made available in France in 1869 as a makeup item made of honey and animal oil. In 1915, lipstick started to be sold in metal containers with a tubular shape as shown in Figure 1. Lipsticks are currently a necessary item for many customers. A wide variety of hue tones and patterns are available. Lipsticks are composed of a variety of natural, synthetic, and synthetic-chemical based components. In spite of this, both natural and synthetic based makeup components are offered in the market. Lipsticks made with manufactured substances may cause a severe unfavourable response. One of the most severe problems, for instance, is the prevalence of lead in cosmetics and colouring components. Certain individuals may experience adverse responses to the metals nickel and copper, which are frequently present in makeup. Castor oil, paraffin wax, beeswax, beet root liquid, mature berry powder of shikakai, lemon oil, citrus essence, and vanilla essence are typical materials used to create medicinal cosmetics^{3,4}.



Figure 1: Marketed Lipstick formulation

Ideal properties:

- 1-It should be nontoxic & non-irritant to the lips.
- 2-It should impart uniform colour to the area of application.
- 3-It should make lips soft.
- 4-It should have stability towards environmental conditions.
- 5-It should be completely free from grittiness.
- 6-The container should operate easily.

Ingredients:

- 1- Wax mixture
- 2- Oil mixture

- 3- Bromo mixture
- 4- Colours
- 5- Preservatives
- 6- Fragrance
- 7- Surfactants and other additives⁴

Noxious lipstick issues

Lipstick has a colourful history and a distinct market, but it also has some hazardous drawbacks. According to recent study, the lipstick includes minute amounts of lead and other harmful heavy metals including antimony, arsenic, and cadmium.

As it is based on human consumption, it may cause issues, be cancerous, or even be lethal in severe cases. Such lip care products may lead to allergic responses, with allergic touch cheilitis of the vermilion edge of the lip which may be acute or chronic being the most severe⁵.

Material and methods

Pomegranate used in preparation of herbal lipstick was purchased from local market of Moradabad district.

Preparation of raw material

The pomegranate peels are dried under shade in sunlight for about 3-4 days to remove moisture. The dried peels are converted into powdered form by grinding it and the finely powdered peel is filtered.

Extraction of natural dye

The powdered pomegranate peels are soaked in water and left for 12 hour. After 12 hour, those are boiled for 30 minutes followed by filtration of solution using cotton cloth as shown in Figure 2^{5,6}.

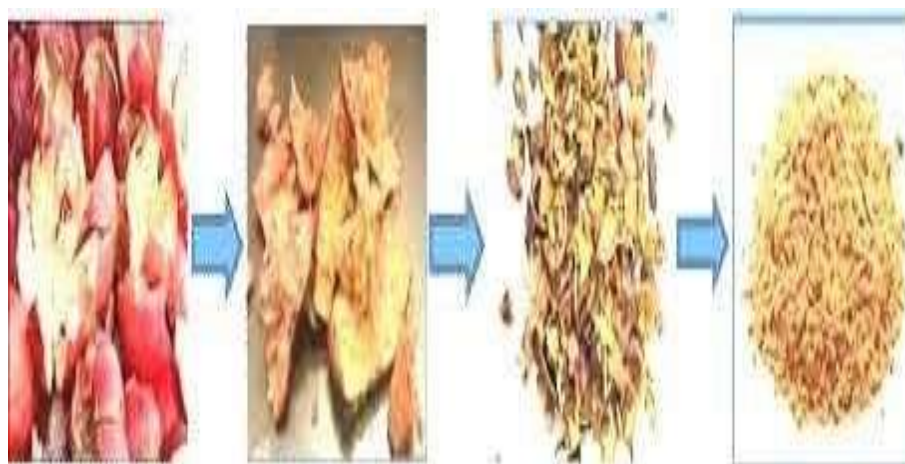


Figure 2: Extraction of natural dye from pomegranate rind

Preparation of herbal lipstick

Weigh all the ingredients in porcelain dish and porcelain dish was placed on water bath. When ingredients were melt, pour bees wax into olive oil. Pomegranate extract, castor oil, coconut oil and vitamin E were also added to the above mixture. Transfer the above mixture to mould and place it in freezer⁶.

Table 1: Formulation of herbal lipstick

S.No.	Ingredients	Formulation 1	Formulation 2	Formulation 3	Formulation 4
1.	Bees Wax	10 g	12 g	12 g	10 g
2.	Pomegranate rind extract	2 g	3 g	4 g	5 g
3.	Castor oil	4 ml	3 ml	2 ml	1 ml
4.	Coconut oil	1 ml	1 ml	1 ml	1 ml
5.	Olive oil	1 ml	1 ml	1 ml	1 ml
6.	Vitamin E	1 ml	1 ml	1 ml	1 ml

Evaluation parameters:

Colour and texture

Formulated lipstick was checked for colour, glossy and smooth texture.

pH

The pH of formulated lipstick was determined using digital pH meter.

Skin irritation test

It was carried out by applying product on skin and left it for 10 minutes.

Melting point determination test

Capillary tube method was used to determine melting point of herbal lipstick. The lipstick was filled in capillary and attached to the thermometer. The temperature at which lipstick is melted is recorded as melting point.

Breaking load point test

Strength and hardness of lipstick was determined by breaking load point test. In this method, the lipstick was placed in horizontal position 1 inch from the base. Weight was attached to it. The weight was gradually increased. The weight at which the lipstick starts to break is known as the breaking load point. The test shall be carried out in specific condition and at about 25°C temperatures^{7,8}.

Perfume stability

The formulated lipstick was tested after 30 days to record fragrance.

Force of application

It is the measurement of force applied for application of lipstick. Lipstick was applied at 45°C to cover a 1 square inch area until fully covered⁹.

Solubility test

The formulated lipstick was dissolved in various solvents to observe solubility¹⁰.

Results

The prepared herbal lipstick formulations were evaluated for different parameters. The results were shown in the mentioned below Table 2.

Table 2: Evaluation parameters of herbal lipstick

S.No.	Evaluation parameters	Inference			
		Formulation 1	Formulation 2	Formulation 3	Formulation 4
1.	Colour	Light yellow	Light yellow	Yellow	Yellow
2.	Texture	Smooth	Smooth	Smooth	Smooth
3.	Odour	Aromatic	Aromatic	Aromatic	Aromatic
4.	pH	6.1	6.2	6.2	6.3
5.	Skin irritation	No	No	No	No
6.	Melting point	60°C	61-62°C	62°C	63°C
7.	Breaking point	30 gram	30 gram	31 gram	33 gram
8.	Perfume stability	++	++	++	+++
9.	Force of application	Poor	Easy	Good	Good
10.	Solubility test	Soluble in Chloroform	Soluble in Chloroform	Soluble in Chloroform	Soluble in Chloroform

Conclusion

Among all the different formulations of herbal lipstick prepared, Formulation 4 was considered as the best formulation. The colour pigment was extracted successfully from pomegranate rind. The herbal lipstick has minimum side effects and natural colorants are more satisfactory than marketed formulation.

Conflict of Interest: We certify that we have no conflict of interest.

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