



## Formulation and evaluation of herbal lip balm

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**Abstract:** The present research work is based on the formulation and evaluation of herbal lip balm by using natural herbals like rose oil, bees wax, Shea butter, vitamin E, Beet root. Rose oil nourishes and softens lips naturally. The herbal lip balm which possesses anti-inflammatory properties and heals chapped lips was formulated and evaluated. The lip balm was produced by homogenous mixing. The lip balm, was characterized for physical stability, pH, melting point, and spreadability. The pH was found to be 5.5 to 6.5 and the melting point was found to be 63 to 65°C. After carrying out stability tests at room temperature (25.0–3.0°C) and in a refrigerator (4.0–2.0°C), it was demonstrated that the manufactured lip balm was uniform in nature and could be applied flawlessly without any deformation.

**KEYWORDS-** LIP BALM, NATURAL INGREDIENTS, SPREADABILITY.

### Introduction

Organic words are an indication of safety as opposed to artificial words, which are harmful to human health. Cosmetics with physiologically active ingredients, sometimes known as "cosmeceuticals," are supposed to provide therapeutic or drug-like benefits. These chemicals have healing properties that show up as beneficial topical effects and provide protection from worsening skin problems. The goal of the current research was to develop an organic lipstick with fewer negative consequences. Lip balms are products that are used to moisturize lips rather than to accentuate them. They create an oily layer that is pliable, sticky, and moisture-resistant. Typically, they don't contain dye..<sup>1]</sup>

**THE ANATOMY OF LIPS:** Lip anatomy consists of a number of structures that affect both the function and appearance of the lip. Here is a brief summary of the lips structure:

**Skin:** The outer layer of the lips is skin, just like the rest of the body. Lip skin, on the other hand, is more delicate and thinner.

The visible line dividing the vermilion-colored portion of the lips from the surrounding skin is known as the vermilion border.

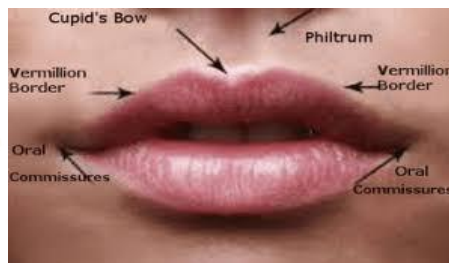
**Vermilion zone:** The reddish region of the lips is known as the vermilion zone. It is crimson in color because it has more blood vessels than normal.

**Philtrum:** A vertical groove or indentation in the middle of the top lip that continues from the base is known as a philtrum.

**Cupid's:** The cupid's bow is the double curve or V-shaped area in the middle of the top lip.

**Oral mucosa:** The inner surface of the lips is protected by a thin, moist layer of tissue called the oral mucosa. It is separate from the outer skin and aids in maintaining the moisture of the lips. To keep the lips moisturized and to facilitate speech and eating, lips include small glands called labia.

**Nerve ending:** One of the many muscles that make up the lips and are in charge of their movement and expression is the orbicularis oris, which surrounds the mouth and facilitates smiling and puckering. Lips are extremely sensitive to touch, warmth, and pain due to their high density of nerve endings.<sup>[2]</sup>



## LIPS-RELATED PROBLEMS:

Several illnesses or problems may have an effect on the lips. These are some common lip-related problems:

**Dry lips:** Dry lips are a result of the lips drying out and losing moisture. This can be caused by environmental factors including cold temperatures, dry air, or particularly frequent lip-licking. Dry lips may feel tight, split, or even peel.

**Chapped lips:** Lips that are chapped can be painful, uncomfortable, and sometimes bleed. Lips that are chapped are a more severe kind of dryness. Chapped lips can be caused by prolonged dryness, the sun, wind or bad weather.

**Cold sores:** Cold sores and fever blisters are both small, painful blisters filled with fluid that appear on or near the lips. They are caused by the herpes simplex virus and are very contagious.

**Inflammation / chelities:** An inflammation and cracking of the corners of the mouth are signs of the condition known as angular cheilitis. It could be brought on by bacterial or yeast infections, a lack of nutrients or prolonged exposure to wetness.

Infections of the lips can be brought on by bacteria, viruses, or fungi. Infection is indicated by swelling, redness, pain, and the emergence of pus-filled blisters or sores.

**Allergies:** Some individuals may develop allergies to specific ingredients in food, cosmetics, or lip care products. Allergy symptoms include swelling, itching, redness, and even lip blistering.

**Lip discoloration:** A variety of things, including sun exposure, smoking, some medications or underlying medical conditions, can alter the color of your lips. Lips may appear darker in this circumstance.<sup>[3]</sup>

## Types of lip balm

There are 7 kinds of lip balms to choose from

### 1. Tinted Lip Balm

A type of lip balm used to hydrate and colorize the lips called tinted. If the user doesn't want to wear a heavy coat of lipstick, tinted lip balms are a perfect alternative. Users use tinted lip balm to moisturize their lips as well as to give them a brilliant wash of color. Just apply the colored lip balm directly to the lips to use it.

### 2. Medicated Lip Balm

Medicated lip balms are most likely to be the least soothing and irritating lip balms amongst the others. This lip balm is usually prescribed by dermatologists in medication for chapped lips and other conditions regarding the lips.

### 3. Flavoured Lip Balm

The flavoured lip balm is a kind of lip balm which has flavourings. Flavoured lip balms are lip balms that are added with flavour such as vanilla, mint, mango and many more fruity flavours. This lip balm is made for moisturizing and is also added with special flavours in order to entice the taste buds and smell of the users.

### 4. Organic Lip Balm

The organic lip balm is a kind of lip balm which have organic or natural ingredients. While there are other lip balms which has chemical ingredients that may harm the lips and skin, the organic lip balm is usually made from organic ingredients such as avocado oils, jojoba oils, beeswax, vitamin E, hemp, and cocoa butter. The organic lip balm still functions like any other lip balms, which provides moisture and protection from dry and chapped lips.

### 5. SPF Lip Balm

The SPF lip balm are a kind of lip balm which contains ingredients that protect the lips from the harmful effects of the Sun rays. The SPF lip balm functions like a sunscreen to protect the lips from sun damage, burning, and even skin cancer. If the user is skin conscious and is avoiding the harmful effects of the sun, then this lip balm is the perfect thing to use on a day's out.

### 6. Plumping Lip Balm

The plumping lip balm is a kind of lip balm that doesn't just moisturize the lips, but also makes the lips look more rounder. Plumping lip balms is made to give protection to the lips, but at the same time it has special ingredients to make the lips look fuller. The plumping lip balm is essential to users who want to achieve a plumper lip without doing any surgical procedures.

## 7. CBD or Hemp Oil Lip Balm

Cannabidiol (CBD) or hemp oil lip balm are a kind of lip balm that contains CBD oil or hemp oil. Hemp oil is from the hemp plant which is an excellent moisturizer for the lips, while the CBD oil is an active compound of cannabinoids which has anti-inflammatory benefits. The lip balm will act as an anti-oxidant to the lips to help soothe dry and heal chapped lip[4,5]

### Main active Ingredient:

#### Rose

Kingdom	Plantae	
Class	Trachaeophytes	
Family	Rosaceae	
Sub family	Rosoadeae	
Tribe	Roseae	
Genus	Rosa.L	

A rose is either a woody perennial flowering plant of the genus *Rosa* in the family Rosacea or the flower it bears. There are over three hundred species and tens of thousands of cultivars. They form a group of plants that can be erect shrubs, climbing or trailing with stems that are often armed with sharp prickles. Their flowers vary in size and shape and are usually large and showy, in colours ranging from white through yellows and reds.<sup>[7]</sup>

#### Chemical constituents:

Rose petals and rose hips contains Vitamin A, B1, B2, B3, B6, C, E and K, folic acid, potassium, Calcium, Iron, tannin and wide range of enzymes. Rose flowers are Anti-depressant, anti-spasmodic, aphrodisiac, astringent, increase bile production, cleansing, anti- bacterial and antiseptic. Rose hips tea is also used in the treatment of diarrhoea. Rose petals are mildly sedative, antiseptic, anti- inflammatory, and antiparasitic. They are also mild laxative, a good supportive tonic for the heart, and useful for lowering cholesterol. The antiseptic nature of rose petals make them a wonderful treatment for wounds, bruises, rashes and incisions, their anti-inflammatory properties make them a wonderful treatment for sore throats or ulcers. They can stimulate the liver and increase appetite and circulation. The extract of the rose petals is used as e drops or eye wash in burning sensation of the eyes.<sup>[8]</sup>

**Uses:**

- Cure Depression & Anxiety
- Anti- inflammatory property
- Rose oil for different in infection: Rose essential oil has strong antiseptic properties, which means that it can be used to prevent wounds from becoming septic or developing tetanus.
- Skin care benefit: Rose essential oil is widely used for cosmetic purposes as it is very good for your skin. It can help you fade away scars left over from acne, boils, pox, and injuries and leave you with smooth skin.
- Perfuming agent
- Make lips look pul<sup>[9]</sup>

**Material and method:**

Water bath	Glass rod
Bunsen burner	China dish
Spatula	Filter paper
Weighing balance	Beaker
Tipond stand	Glass slide

**Raw material:**

Bees wax	Beetroot powder
Shea butter	Vitamin E
Rose oil	Rose infused oil

**Collection and extraction:**

All the medicinal plants and herbs are selected for herbal lip balm for lip moisturization are rose ,beetroot, vitamin E, shea butter , These materials are collected from local market.

Research Through Innovation

## 1. Rose infused oil:



Dried rose petals were placed in a clean, dry glass jar. Coconut oil was added in such a way that the petals were covered by about one inch of oil. The jar was covered with a tight fitting lid and was shaken. The jar was placed in a paper bag and was stored near a warm, sunny window. Once the oil has been infusing for 4-6 weeks, the calendula petals were strained out and the oil was extracted.<sup>[10]</sup>

## 2. Beetroot powder:



Beetroot was washed properly and was air dried properly. Then it was cut into small pieces. The pieces were placed in the mortar and were macerated with help of pestle. The slurry was filtered out with help of filter paper. The liquid separated out and powder was used as a colouring agent in the preparation.

### Formulation:

Sl no.	Ingredients	Biological action in the preparation	Amount used in the preparation
1.	Bees wax	Base	4g
2.	Shea butter	Humectant	2.5g
3.	Rose oil	Perfume	0.25ml
4.	Beetroot powder	Colouring agent	0.5g
5.	Vitamin E	Preservative	0.15ml
6.	Rose infused oil	API	2.6ml

## Preparation

1. A water bath is kept on the burner and is filled with water for boiling.
2. Bees wax filled in china dish is kept on the boiling water.
3. The beeswax is heated till it melts properly.
4. To the molten beeswax, cocoa/shear butter and honey/vitamin E are added and is made homogeneous with slow stirring with glass rod.
5. In the mixture rose infused oil is added and mixed properly.
6. After homogeneous mixture is obtained, colouring agent and perfume is added.
7. The mixture is poured in the container.
8. Then the mixture is cooled in the ice bath or dried in the sunlight.



## EVALUATION OF LIPBALM:

### 1. Melting Point:

For melting point, the sample of lip balm was taken in a glass capillary whose one end was sealed by flame. The capillary containing drug was dipped in liquid paraffin inside the melting point apparatus which was equipped with magnetic stirring facility. Melting was determined visually, and melting point was reported.

### 2. Organoleptic Properties:

The lip balm was studied for the basic organoleptic characters such as colour, odour, taste and appearance.

### 3. Test of spreadability:

The product was applied (at room temperature) repeatedly onto a glass slide to visually observe the uniformity in the formation of the protective layer and whether the stick fragmented, deformed or broke during application.

**G** - Good: uniform, no fragmentation; perfect application, without deformation of the lip balm.

**I** - Intermediate: uniform; leaves few fragments; appropriate application; little deformation of the lip balm.

**B** - Bad: not uniform; leaves many fragments; difficult or inappropriate application, intense deformation of the lip balm.

#### 4. pH measurement:

The pH study was carried out by dissolving 1 gm of sample into 100 ml water. The pH measurement was done using pH paper.

#### 5. Stability studies:

Prepared lip balm was placed for accelerated stability studies at room temperature ( $25.0 \pm 3.0$  °C), refrigeration ( $4 \pm 2.0$  °C) and oven temperature ( $40.0 \pm 2.0$  °C) for 30 days. After 30 days, it was again characterized for organoleptic properties, melting point, spreadability and pH.<sup>[11]</sup>

#### Results:

All the evaluation tests were done the results were recorded in a form of table.

#### Organoleptic properties

Colour	Deep red
Odour	Rose
Taste	Tasteless
Appearance	Smooth

#### MELTING POINT

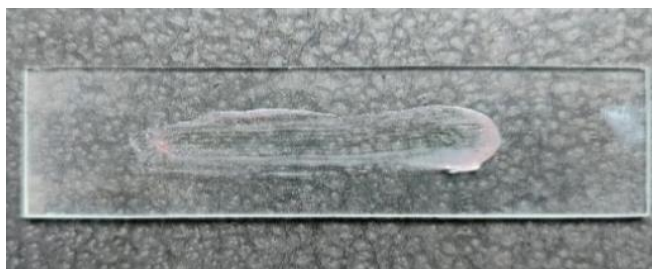
Melting point of lip balm was found to be in the range of 63, which matches with the appropriate melting point of between 65 and 75.

**pH test :** The pH of lip balm was near to neutral pH i.e 5.5



**TEST OF SPREADABILITY:** Prepared lip balm was tested for its ability of spreading which initially has shown uniform application in room temperature.





## Discussion:

The evaluation of the lip balm's organoleptic attributes, including color, odor, taste, and appearance, ensures that the product will be aesthetically and sensually appealing to consumers. A satisfying user experience is facilitated by positive organoleptic characteristics. The melting point of the lip balm formulation was shown to be within the allowable range, indicating that it can withstand typical storage conditions without melting or changing its texture. This is required to maintain the lip balm's stability throughout storage and transportation. The spreadability test gauges how smoothly and consistently the lip balm may be applied. The high spreadability of the lip balm suggests that it may be applied quickly and easily to the lips, creating a protective barrier that is free from distortion or fragmentation.

## Conclusion

Whether the formulation was kept at ambient temperature or in a refrigerator, it demonstrated the same stability behavior. It was determined that the spreadability was "good" and that the organoleptic characteristics were stable. Storage under these conditions was deemed sufficient because the product's functionality was maintained. With a sufficient melting temperature (mean of 63°C), the lip balm made from natural ingredients passed the stability test.

It was found that natural ingredients are safe to use in lip balm and are a superior alternative for the composition of lip balm. Excipients can be altered or combined in unusual ways to produce a brand-new formulation with superior quality. The current research indicates that the formulation will not change.

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