



Research Article

**Formulation And Evaluation of two Organic Lip Balm**

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**Abstract:**

Cosmeceuticals are the product of cosmetics that are biologically active ingredient that impersonates to medical or drug benefits. But the daily use of synthetic results in many side effects and need of organic lip balms is roaring in the society. In the present study we, aimed to formulate organic lip balm using natural ingredients. Lip balm has been formulated using Golden shower flower, red cabbage, honey, ghee, beeswax, vitamin E and coconut oil. Various parameters such as stability, melting point, spreadability, pH, were evaluated for the evaluation of lip balm. pH was found to be 6 and melting point was 60°C 65°C for cassia lip balm and red cabbage lip balm respectively. On performing skin irritation test the formulation was found to be not irritant, and formulation was observed to be stable. Lip balm from above ingredients could be a better option for daily use to a small extent for minor lip issues.

**KEYWORDS:** Natural lip balm, herbal cosmetics, spreadability, stability

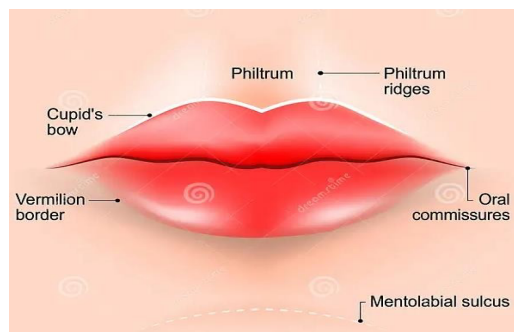
**INTRODUCTION**

The word cosmetic was derived from the Greek word “kosm tikos” meaning having the power, arrange, skill in decorating. The origin of cosmetics from a continuous narrative throughout the history of man as they developed. Herbal cosmetics protection to provoke for in an enemy (whether man or animal). The origin formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefit only, shall be called as Herbal Cosmetics. The natural content in the botanicals does not cause any side effects on the human body; instead enrich the body with nutrients and

other useful minerals. The cosmetic, according to the Drug and Cosmetics Act is defined as article intended to be rubbed, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part therefore cleaning, beautifying, promoting attractiveness or altering the appearance. The cosmetics does not come under the preview of drug license. The herbal cosmetics are the preparation containing phytochemical from a variety of botanical source, which influence the functions of skin and provide nutrients necessary for the healthy skin or hair. The natural herbs and their products when used for their aromatic

value cosmetic preparation are termed as herbal cosmetics. The skin and hair beauty of individuals depends on the health, habits, routine job, climatic condition and maintenance. The skin due to excessive exposure to heat will dehydrate during summer and cause wrinkle, freckle, blemishes, pigmentation and sunburns.<sup>1</sup>

### Anatomy and Structure of Lip Balm



**Figure 1: Anatomy of lip**

The lips serve as organs of prehension, suction and speech. It is composed of the skin, superficial fascia, orbicularis muscle and the muscles inserted around it (areolar tissue & mucous membrane). The margins of the lips are covered with dry, red mucous membrane, continuous with the skin and containing numerous vascular papillae and touch corpuscles. The mucous membrane internally is reflected from the upper and lower lip upon the gums, and in the median line forms two folds of superiors and inferiors. The areolar tissue or submucous layer contains the coronary vessels which completely encircle the buccal orifice near the free margin of the lips. The coronary vessels are the superior and inferior coronary arteries which arise from the facial. The superior coronary is larger than the inferior, and anastomoses with its fellow of the opposite side and gives off.<sup>1</sup>

### ADVANTAGES AND APPLICATIONS OF LIP BALM

- Natural lip balms help to care the natural

health and beauty of the lips.

- The natural lip balm can use both men and women can use them.
- Natural lip balm products help to protect lips affected by cold sores, chapping and dryness.
- The use of natural lip balm cosmetic to treat the appearance of the face and condition of the skin.
- Natural lip balms are products applied onto the lips to avoid dryness and protect against adverse environmental factors.
- Natural lip balm being a product intended for use by both men and women.
- To produce lip balms, it is necessary to balance the concentration of the main ingredients including butters, oils and waxes and other excipients.

Lip balms are often eaten away by the user and hence it is imperative that health regulators have a microscopic look at the ingredients that go in to the lip balm, materials and methods.<sup>2</sup>

## MATERIALS AND METHODS

### MATERIALS

#### BEESWAX

Beeswax is moisturizing the lip, and contains natural emulsifiers and retain moisture in the skin. This is especially helpful for dry and chapped lips. Beeswax protect the lips from harmful rays.<sup>3</sup>

#### GHEE

Ghee is made from butter the milk solids and impurities have been removed, so most people who are lactose or casein intolerant have no issue with ghee. They have antioxidant, antiviral and anticancer properties.<sup>3</sup>

#### COCONUT OIL

Coconut oil is a white solid fat below around 25<sup>0</sup> C and a clear thin liquid oil in warmer climate. It is a better choice in terms of skin

health and moisturising dry skin. They reduce inflammation, promoting wound healing, antibacterial, antifungal, and antiviral properties.<sup>3</sup>

**HONEY**

Honey is used in the topical treatment, it is non-irritant, non-toxic, bactericidal, anti oxideetc.<sup>4</sup>

**VITAMIN E**

Vitamin E can be used to relieve chapped, dry lips. Vitamin E promotes cell regeneration, using it on dry lips brings new cells to the surface faster. The thick and oily consistency of vitamin E oil can also prevent further irritation.<sup>4</sup>

**CASTOR OIL**

Castor oil is rich in ricinoleic acid, a monounsaturated fatty acid. These types of fats act as humectants and can be used to moisturize the lip skin. Humectants retain moisture by preventing water loss through the outer layer of the skin.<sup>4</sup>

**GOLDEN SHOWER EXTRACT**



**Figure 2: Golden shower extract**

**RED CABBAGE EXTRACT**



**Figure 3: Red cabbage extract**

**Methodology**

**PREPARATION OF RED CABBAGE LIP BALM**

The herbal lip balm was formulated as per the general method of lip balm formulations. In this formulation, ghee, beeswax, coconut oil, were melted in a beaker on a water bath. Simultaneously honey, vitamin E were melted in another beaker at 55-60<sup>0</sup>C. Mixed vigorously. Then it was added to the red cabbage extract at the same temperature. To the mixtures drop of vanillin was added. Then the mixture was added to the container. Previously greased with glycerine. Then the mixture is taken to the ice bath for 10 minutes.

**Table 1: Formulation of red cabbage lip balm**

INGREDIENTS	FORMULATION 1	FORMULATION 2
Beeswax	2gm	2g
Ghee	2.5gm	2.5gm
Honey	1.25ml	1.25ml
Vitamin E	1.25ml	1.25ml
Castor oil	7.5ml	0ml
Coconut oil	0ml	7.5ml
Red cabbage	2gm	2g

## PREPARATION OF GOLDEN SHOWER LIP BALM

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vigorously. Then it was added to the golden shower extract at the same temperature. To the mixture drop of vanillin was added. Then the mixture was added to the container. Previously greased with glycerine. Then the mixture is taken to the ice bath for 10 minutes.

**Table 2: Formulation of golden shower lip balm**

INGREDIENTS	FORMULATION 1	FORMULATION 2
Beeswax	2gm	2g
Ghee	2.5gm	2.5gm
Honey	1.25ml	1.25ml
Vitamin E	1.25ml	1.25ml
Castor oil	7.5ml	0ml
Coconut oil	0ml	7.5ml
Golden shower	2gm	2g

## EVALUATION OF LIP BALM PHYSICAL APPEARANCE

Lip balm was evaluated for colour uniformity distribution and general appearance.<sup>5</sup>

## SOLUBILITY TEST

The formulation of herbal lip balm was dissolved in various solvents like acetone, hexane, petroleum, ether, water, alcohol etc, and solubility was observed.<sup>6</sup>

## SPREADABILITY TEST

The test spreadability consisted of applying the product repeatedly onto a glass slide to visually observe the uniformity in the formulation of protective layer. The time in which the upper glass slide moved over the lower slide was taken as a measure of spreadability.<sup>7</sup>

## MELTING POINT

Determination of melting point is important as it is an indication of the limit of safe storage. The melting point of formulated lip balm was determined by the capillary tube

method. The capillary was filled tied on the tip of the thermometer and was dipped in liquid paraffin. It was directly heated until the contents of capillary tube were melted. The temperature at which content got melted was noted down.<sup>8</sup>

## pH PARAMETER

Drop of the formulation was applied on the pH paper observed the changes of colour in the pH paper. Colour obtained was compared in the colour scale.<sup>9</sup>

## SKIN IRRITATION

It is carried out by applying product on the skin for 10 minutes.<sup>9</sup>

## STABILITY TEST

Prepared lip balm was placed for accelerated stability studies at room temperature (25.0±3.0) refrigeration (4±2.00 and oven temperature (40.0±2.0) for 30 days and observed for changes if any.<sup>10</sup>

## RESULT AND DISCUSSION

### PHYSICAL APPEARANCE

In the physical appearance evaluation of the formulations, colour distribution was found to be uniform for both golden shower and red cabbage

**Table 3: Colour and colour distribution of lip balm**

INGREDIENTS	COLOUR	COLOUR DISTRIBUTION
Golden shower	Yellow	Uniform
Red cabbage	Violet	Uniform

### SOLUBILITY TEST

Solubility of the formulations were observed using hexane and water when the two lip balms were soluble in hexane and insoluble in water.

**Table 4: Solubility of lip balm**

SOLVENTS	SOLUBILITY
Hexane	Soluble
Water	Insoluble

### SPREADABILITY TEST

Both lip balms spread uniformly, providing good application without fragmentation.



**Figure 4: Spreadability of lip balm**

### MELTING POINT

Golden shower lip balm has a melting point of 60°C, while red cabbage lip balm melts at 65°C.

**Table 5: Melting point of lip balm**

Ingredients	Melting point
Golden shower	60°C
Red cabbage	65°C



**Figure 5: Melting point of lip balm**

### **pH**

Both formulations have a pH of 6, ideal for skin compatibility

**Table 6: pH of lip balm**

INGREDIENTS	pH
Golden shower	6
Red cabbage	6



**Figure 6: pH of lip balm**

### **SKIN IRRITATION TEST**

The balms are non-irritant.



**Figure 7: Skin irritation test**

**STABILITY TEST**

The lip balm formulation was observed to be stable and of good quality after 30 days of stability studies

**GOLDEN SHOWER**



**Figure 8: Golden shower lip balm**

**RED CABBAGE LIP BALM**



**Figure 9: Red cabbage lip balm**

**CONCLUSION**

The study concludes that the lip balms are suitable for daily use, providing hydration and protection without causing irritation. The natural ingredients make them safer alternatives to synthetic products, and further clinical studies could lead to their commercial production. Formulation were found to have good organoleptic properties, compatible, pH, spreadability and devoid for any skin irritation. Further clinical studies and scaling up studies can be done to market the formulated lip balms.

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