



Formulation and Evaluation of Natural Lipbalm

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ABSTRACT

Heavy metals and preservatives are present in the compositions of everyday lip care products. The innovative method of formulating cosmetics was created in response to the growing global demand for natural goods whose manufacture is safe for the environment and human health. Cosmetics are a class of health and beauty goods that are used to enhance or change a person's look, as well as to care for the face and body. Cosmetics have a history that dates back at least 7,000 years and are a part of practically every civilisation in the world. It is obvious that the beauty industry has done an incredibly magnificent job of brainwashing our thoughts. A study was done on the style, composition, and quality of lip balm manufactured with natural substances. In this investigation, numerous components were used to make lip balm. The lip balm was produced by homogenous mixing. Applying the lip balm formulation to a glass slide allowed for testing. For the examination of lip balm, many characteristics including chemical stability, pH melting point, and spreadability were used.

Keywords- Lip balm, Lips, Formulation, Natural ingredients.

1.0 INTRODUCTION

Cosmetic plays a significant role in today's life style. Moreover current trend is going green in almost all industries including cosmetics to adopt more natural way of life. The usage of herbal cosmetics has been increased to many folds in personal care system. Natural products have been used for folk medicine purposes throughout the world for thousands of years. Many of them have pharmacological properties such as antimicrobial, anti-inflammatory and cytostatic effects. Herbal cosmetic products include various formulations. The word herbal indicates safety as compared to synthetic products which are having various adverse effects on human health. Colouring lips is the ancient practice to enhance the beauty of lips and to give glamour touch to the face make up. For this the choice for shades of colour, textures, lusters have been changed and became wider. This can be observed from the lip jelly, lip balm, lipstick marketed in hundreds of shades of colours to satisfy the demand.^[1]

Importance of Cosmetics: Cosmetics are used to enhance one's appearance. Cosmetics has been available for few millennia. Egypt is the first country to employ cosmetic preparations. Eye coloring or some material for producing pleasing odor were the main cosmetics in use as per ancient Egyptian history. In modern days, both men and women are leaning the ear heads towards fashion and have become beautyconscious. In order to fulfill the needs of users; cosmeceuticals are manufactured in either hypoallergenic or natural form. Building self-confidence and satisfaction about the appearance of a person is considered to be the primary aim of the cosmetics. It should also be able to impress other persons as well. Currently, eyeshadows, creams, anti-wrinkle formulation, lipstick, nail polishes and perfumes are some of the widely manufactured important cosmetics.^[2]

Properties of cosmetic

- Cleans, beautifies and alters the appearance.
- Adds fragrance.
- Stops the development of bad odor.
- It does not have any medicinal effect on the body^[3]

Lip balm is a cosmetic product similar to lipstick which is used to prevent lip dryness and protect against hazardous environmental factors. This work involved the production of a lip balm by formulated with natural or herbal raw materials and the checking of stability tests: Melting point, evaluation of organoleptic characteristics (colour, odour and appearance) and functionality evaluation (spreadability test).

1.1 The main ingredients of Lip Balm

- Bees wax
- Mentha oil

- Strawberry pulp
- Beet root powder
- Cocoa butter^[4]

1.2 Anatomy of Lips

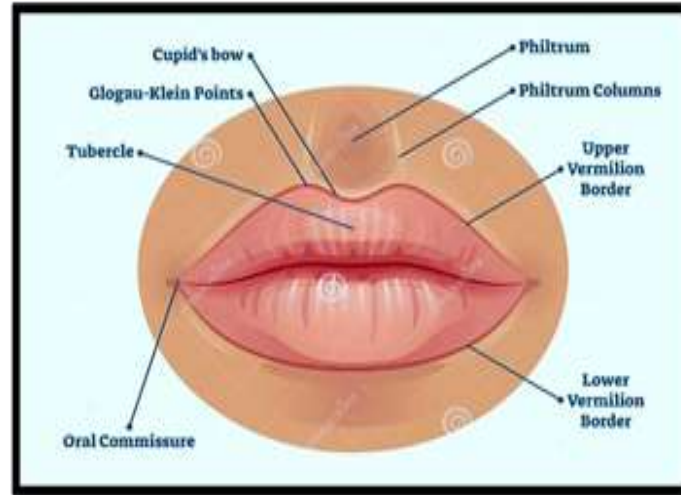


Figure 1: Anatomy of lips ^[5]

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 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 a small artery to the septum arteriaseptinasi. The superior labial or coronary vein begins as a plexus in the orbicularis muscle of the upper lip, passes with the coronary artery and drains into the facial vein a little below the alae of the nose of the veins which drain the lower lip the inferior coronary empties into the facial a little below the superior labial; but the chief branch from the lower lip descends as a rule to the submental vein, thence to the facial or often to the anterior jugular.^[1]

The lips play role as organs which is designed to grazing, suction and speech. It is combination of the skin, superficial fascia, orbicularis muscle and the muscles inserted around it. The margins of the lips are covered with dry, red mucous membrane, continuous with the skin. The areolar tissue or submucous layer contains the coronary vessels which completely encircle the buccal orifice near the free margin of the lips.^[4]

1.3 Lip Disorder

- I. **Swelling:** An allergic reaction can make the lips swell. The reaction may be caused by sensitivity to certain foods or beverages, drugs, lipstick, or airborne irritants. When a cause can be identified and then eliminated, the lips usually return to normal. But frequently, the cause of the swelling remains a mystery. A condition called hereditary angioedema may cause recurring bouts of swelling. Nonhereditary conditions such as erythema multiforme, sunburn, cold and dry weather, or trauma may also cause the lips to swell.
- II. **Sun Damage:** Sun damage may make the lips, especially the lower lip, hard and dry. Red speckles or a white filmy look signal damage that increases the chance of subsequent cancer. This type of damage can be reduced by covering the lips with a lip balm containing sunscreen or by shielding the face from the sun's harmful rays with a wide-brimmed hat.
- III. **Inflammation:** With inflammation of the lips (cheilitis), the corners of the mouth may become painful, irritated, red, cracked, and scaly. Cheilitis may result from a deficiency of vitamin B2 in the diet.
- IV. **Discoloration:** Freckles and irregularly shaped brownish areas (melanotic macules) are common around the lips and may last for many years. These marks are not cause for concern. Multiple, small, scattered brownish black spots may be a sign of a hereditary disease called Peutz-Jeghers syndrome, in which polyps form in the stomach and intestines. Kawasaki disease, a disease of unknown cause that usually occurs in infants and children 8 years old or younger, can cause dryness and cracking of the lips and reddening of the lining of the mouth.^[1]
- V. **Sores:** A raised area or a sore with hard edges on the lip may be a form of skin cancer. Other sores may develop as symptoms of other medical conditions, such as oral herpes simplex virus infection or syphilis. Still others, such as keratoacanthoma, have no known cause.^[6]

1.4 Application of Natural Lip Balm:

- Natural Lip balms are products applied onto the lips to avoid dryness and protect against adverse environmental factors.
- Numerous lip balms of chemical origin are currently available in the market from companies like The body shop, Nivea, Himalaya, Blistex, Babylip etc.
- 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.^[4]

1.5 Advantages of Natural Lip Balm:

- Lip balms help to protect the natural health and beauty of the lips.
- Sun block lip balms are proved to prevent ultraviolet rays from hurting the lips.
- They are not gender specific products and both men and women can use them.
- Lip balm products help to protect lips affected by cold sores, chapping and dryness.
- Contact of the product with the skin will not cause a sensation of friction or dryness, and should allow the forming of a homogeneous layer over the lips in order to protect the labial mucous susceptible to environmental factors such as UV radiation, dryness and pollution.
- It refreshed, renewed and also addresses lip-related symptoms resulting from colds, flu and allergies.
- The use of natural lip cosmetic to treat the appearance of the face and condition of the skin.

1.6 Disadvantages of Natural Lip Balm:

- Lip balms made of low-quality ingredients can harm the lips seriously. Such lip balms may dry out the lips instead moisturizing it.
- Lip balm addiction is another disadvantage usually seen with the use of them.
- Compared to commercially-prepared lip balms, homemade lip balms tend to stay on the lips for a shorter duration of time. Thus, need to reapply often.
- Some companies manufacture lip balms considering only the beauty aspect, ignoring the health benefits and soft character of the skin. Such products will gradually damage the natural colour, softness and glow of the lips.
- The naturally derived colours and flavours are more difficult to obtain and also have issues related to stability in the products.
- Natural oils have other disadvantages such as greasier, comedogenic, and less spreadability.^[6]

SAFE TO USE: Compare to other beauty products natural cosmetics are safe to use. They are hypo-allergenic and tested and proven by dermatologist to be safe to use. Any time anywhere since they are made of natural ingredients people do not have to worry about getting skin rashes or experience itchiness. For Example: BHA, BHT are closely related to synthetic anti-oxidants and used as Preservatives in lipbalm. It induces the allergic reaction in the skin.^[7]

2.0 MATERIALS AND METHOD:

2.1 Composition of Natural Lip Balm:

INGREDIENTS	QUANTITY	USES
Beeswax	5 %	Used as Base
Mentha oil	2 %	Preservative
Strawberry pulp	15 %	Flavouring Agent
Beet Root Powder	5 %	Lighten up the darker lips
Cocoa Butter	0.08 %	Healing Property
Vitamin E	5 %	Antioxidant, maintain the stability

Table No. 1. Composition of Natural Lip Balm

2.2 Steps Involved in Preparation of Natural Lip Balm:

Step 1: Gather ingredients and supplies.

Step 2: Melt beeswax in a China dish-A on the burner by using water bath.

Step 3: Pour beeswax, Mentha oil, and strawberry pulp into a glass measuring container and add into hot air oven until melted together.

Step 4: Add in desired amount of Beet Root Powder as a Colouring agent.

Step 5: Melt the coca butter in China dish-B by heating after melting of coca butter add Vitamin E in it.

Step 6: Add the China dish- B into China dish- A and mix it properly with continuous starring.

Step 7: Pour the prepared product in wide mouth container and let cool at room temperature.

2.3 Evaluation Tests of Natural Lip Balm

- i. **Preliminary stability Test:** The formulation was evaluated on Preliminary Stability Tests which included Physical characteristics (colour, odour and appearance) and spreadability test . As this formulation results in no Physical or spreadability changes, it was submitted to Normal Stability test .

- ii. **Normal Stability Study**

A quantity of 25 g of the formulation was prepared for the Normal Stability Test, in which the Physical characteristics (colour, odour, appearance), spreadability and melting point were evaluated for 5 days under the conditions of Room Temperature, Oven and Refrigerator .The samples were well stored.

- iii. **Melting Point**

To check the melting point, the material was made melted to fill capillaries. The temperature at which melting of the lip balm sample was observed was considered the melting point.^[4]

- iv. **Organoleptic Characteristics**

Colour and appearance were characterized visually with a loupe of 10x magnification while the odour was compared by the evaluator. The criteria described below were established by the evaluator to determine organoleptic characteristics, with samples analysed in duplicate during the predetermined time for each condition, and compared against a freshly prepared formulation at t_0 :

N – Normal;

M – Modified;

IM - Intensely Modified.

- v. **Test of Spreadability**

The test of spreadability consisted of applying the product (at room temperature of 22.0 ± 3.0 °C) 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. For this test, the following criteria were established by the analyst:

G - Good: uniform, does not leave fragments; 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.^[8]



Figure 2: Spreadability of lip balm at room temperature ^[4]

- vi. **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 meter.^[5]
- vii. **Rancidity**: Rancidity Reagent concentrated hydrochloric acid Phloroglucinol solution (Benzene) Shake 10gm of material melted if necessary in 10 ml concentrated hydrochloric acid 10 ml of phloroglucinol solution. Shake for 1 min. Material shall be taken to have passed the test if no pink colour develops.^[9]

3.0 CONCLUSION

Due to tremendous demands of beauty enhancing products cosmetics industry is flourishing. This work has reviewed the current status of natural lip balm products. This also studied all aspects of natural lip balm including natural ingredients, formulation methods, evaluation and applications. Hence it can be concluded that the extensive literature study has been performed on the natural lip balm products and shown wide scope for such products in future.

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