

A Review on Formulation, Development and Evaluation of Lip Balm by Using Various Herbal Entities

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ABSTRACT: Lip Balm is one of the most frequently used cosmetic items. The lip care products on an everyday basis contain harmful heavy metals and preservatives other than leaching through the pores on your lips, these heavy metals and other chemicals can also be accidentally injected. Lip balm formulations are most widely used to enhance the beauty of lips and add glamorous touch to the makeup. Lip balm offers a natural way to maintain and promote healthy lips. Current cosmetic lip products are based on the use of enormous chemicals ingredients that have various side effects. Hence, an attempt has been made to study the natural ingredients which is used to formulate the herbal lip balm. Herbal lip balm nourishes the lip, helps to get hydrated and protects lips which was affected by dryness. Lip balm can be a better option for treatment of various lip problems.[1]

Keywords: Lip Balm, Beetroot, Beeswax.

I. INTRODUCTION:

The demand for herbal cosmetic is rising today in the global market. Cosmetic plays a significant role in today's life style. Moreover, current trend is going green in almost all industries including cosmetics to adopt a more natural way of life. The preferable choices are natural food, herbal medicines and natural curing practices for healthy life and also there is much demand for the organic vegetable products. The usage of herbal cosmetics has been increased to many folds in personal care system. Many of them have pharmacological properties such as antimicrobial, anti-inflammatory and cytostatic effects. They have been recognized as useful for human medicine. Herbal extracts are cultivated all over the world and are prime name in horticulture sector. Cosmetics made up of herbal extracts for skin care and hair-care is very popular

for their reliability. 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. Coloring lips is an ancient practice to enhance the beauty of lips and to give a glamour touch to the face make up.[2]



Fig 1: Lip Balm

Benefits of Lip Balm:

1. Lip balm helps to protect the natural health and beauty of lips.
2. Lip balm helps to protect lips affected by cold sores, chapping and dryness.
3. It also works perfectly as overnight lip repair.
4. Cracked and sore lips are repaired by lip balm.
5. Free from irritation.[3]

Formula:

Sr. No.	Name of Ingredients	Uses
1.	Beeswax	Used as base, provides texture and helps create a protective barrier
2.	Beetroot	Colouring agent
3.	Cocoa butter	Moisturising agent

4.	Vitamin E	Antioxidant, maintain the stability
5.	Coconut oil	Lubricant
6.	Honey	Lighten up the darker lips, Flavouring agent
7.	Nutmeg Oil	Preservative

Biological source: It consists of fresh root of Beta vulgaris.

Family: Amaranthaceae

Role: The beetroot extracts present in the lip balm moisturize and hydrate your lips to restore balance and good health for your lips. Vitamin-E & essential oils present in the lips form a protective base for your lips to avoid damaged lips.[8]

II. MATERIALS AND METHODS:



Fig 2: Bee wax

1. Beeswax

Synonyms: Cera alba

Biological source: Beeswax is naturally occurring wax produced in the bee's hives by honeybee. Mellifera Glands under the abdomen of the bee's secrete this wax and it is used to build the honey comb.[4]

Family: Apidae.

Role: Beeswax is a very moisturizing, can help protect the lips from the harmful rays of the sun, and has a pleasant smell. Beeswax acts as a natural emulsifier.[6] This is especially helpful for individuals who have excessively dry and cracked lips. These anti-bacterial agents can help prevent a painful inflammation that comes with an infection.[7]



Fig 3: Beetroot

2. Beetroot (juice)

Synonyms: Chukandar, Sugar beets, Mangel, Spinach beet.



Fig 4: Cocoa butter

3. Cocoa butter

Synonyms: Theobroma oil, cacao butter, cacao beans, semina theo-bromatis.

Biological Source: It is obtained from roasted seeds of Theobroma cacao Linn.

Family: Sterculiaceae.

Role: Cocoa butter is an emollient that is a great source of natural antioxidants. It adds a protective hydrating layer to lips, helping protect them from extreme temperatures and indoor heat that can leave your lips dried out.[8]



Fig 5: Vitamin E

4. Vitamin E (Capsule)

Synonym : Eprolin, RRR-alpha-tocopherol, Vitamin-E.

Biological source : Vitamin E is obtained from various foods and oils.

Family: Tocopherols.

Role: Vitamin E is an antioxidant and a natural conditioner. Vitamin E helps to maintain the soft, younger texture of the lips by lowering the signs of ageing.[9] Topical vitamin E oil may be used to alleviate chapped, dry lips. Since vitamin E

promotes cell turnover and regeneration, its usage of it on dry lips brings new cells to the surface faster. The thick and oily consistency of vitamin E oil can also prevent similar irritation.[10]



Fig 6: Coconut oil

5. Coconut oil

Synonyms: Coconut Absolute, Coconut Fatty Acid Triglyceride, Coconut Oil, Copra Oil,

Biological Source : Coconut oil is the oil expressed from the dried solid part of endosperm of coconut, *Cocos nucifera* L.

Family: Palmae.[4]

Role: The primary benefit of coconut oil is its moisturizing effects. This makes it ideal for chapped lips. Your lips are particularly Sensitive to moisture loss because the skin is thin, and they're exposed to the elements more so than other parts of your skin.[8]



Fig 7: Honey

6. Honey

Synonyms: Madhu, Mel

Biological Source : Sugary secretion deposited in honey comb by the bees *Apis mellifica* and *Apis dorsata* and other species of *Apis*.

Family: Apidae[5]

Role: Honey is a natural humectant, and because of this that it attracts and retains moisture, keeping your lips hydrated throughout the day. Honey also has anti-inflammatory properties to help soothe chapped lips. Honey's antibacterial properties also

assist to prevent infection if the lips become cracked.[11]



Fig 8: Nutmeg oil

7. Nutmeg oil

Synonyms: *Myristica*, *Nux moschata*

Biological Source : It consists of dried kernels of seed of *myristica fragrans* houtt.

Family: Myristicaceae.

Role: Use as preservative. It helps in pain relieving, antimicrobial and antioxidant property.

Method of Preparation:

1. Fresh fruit was washed and peeled and cut into small pieces.
2. 50 gm of fruit was weighed and mix with 50ml ethanol in distillation flask.
3. Heat is given to mixture at 400C temperature for 4 hours by indirect Flame.
4. Mixture was filtered after cooling the mixture to separate the betaline.[8]

Formulation of Lip Balm:

1. Beeswax and cocoa butter were heated by double boiling process at temperature 800C.
2. Virgin coconut oil, olive oil and honey were added after the above mixture was melted with stirring.
3. Betalain extract and Vit E capsule were added and heated. (Stirring was continued until proper dispersion was achieved)
4. Mixture was poured into container and refrigerate at 50C for 1 hour.[8]

Evaluation of Lip Balm:

1. Organoleptic Evaluation

It refers to the evaluation of herbal lip balm by its colour, texture and odour, etc. The external characters of the formulation were examined visually.

2. Physicochemical Evaluation:

A. pH

The pH of formulated herbal lip balm was determined by using pH meter. 1gm of formulation was dissolved in 100 ml of water and its pH was measured.[8]

B. Moisture Analysis

Weigh about 1 gm of the formulated lip balm into a porcelain dish and dry it in an oven at 70°C For 1 hr. Cool it in desiccator and weigh the loss in weight is usually recorded as moisture.

3. Stability Study

Stability testing of the prepared formulation was conducted by storing the formulation at different temperature conditions for 30 days. The formulation was evaluated under the condition of room temperature 25°C and refrigerator condition at temperature 5°C. The appearance was assessed on 3rd, 7th, 15th and 30th days.[8]

4. Microbial Study

Microbial assay of lip balm was performed to determine whether the product was sterile or not. In this method, the agar solution was prepared in the Schott bottle and the mixture was Autoclaved and warm in a sterile solution for up to 15-20 min. The solution was poured into the petry plate and left to solidify it. After the solidification, the lip balm was spread on the surface of agar with help of plastic spreader and was incubated in an inverted position for 24 hrs. at 30°C. Growth of the microorganism on the agar surface after 24 hours says that the product is not sterile. [8]

5. Test of spreadability

The product was applied (at room temperature) repeatedly onto a glass slide to visually examine the uniformity in the formation of the protective layer and whether the stick fragmented, deformed or broke during application. [12]

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

I - Intermediate: uniform, leaves few fragmentations, appropriate application, few deformations of lip balm

B- Not uniform, leaves many fragments, inappropriate application, and intense deformation of the lip balm.[11]

6. Melting Point

The melting point apparatus used to determine the melting point of lip balm. To determine the melting point, a 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. Measurement was done using pH meter. [5]

III. CONCLUSION :

The conclusion of this work is to treat the various lip problems such as chapped lips, dry lips, inflamed lips, sun damage and discoloration of lips by using herbal lip balm. This lip balm is prepared by using various herbal ingredients such as honey, beetroot, beeswax, cocoa butter, coconut oil, vitamin E, nutmeg oil, etc. It is possible to conclude that the developed lip balm formulation has desirable organoleptic properties, an adequate melting point, good spreadability, and a pH that is close to neutral. These results show that the formulation of the lip balm is stable and acceptable for usage as a natural and secure lip care product.

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