



## **FORMULATION, PREPARATION & EVALUATION OF HERBAL LIP BALM FROM DRAGON FRUIT AND ROSE FLOWER**

**MR. PISAL OMKAR DHANAJI<sup>1</sup>, MR. GAIKWAD TUSHAR A.<sup>2</sup>**

<sup>1</sup> FINAL YEAR B. PHARMACY STUDENT LNBCIOP, RAIGAON, SATARA

<sup>2</sup> Asst. Professor LNBCIOP, RAIGAON, SATARA

### **ABSTRACT:**

Since ancient times, there has been an incredible need for cosmetics. People now days have a preference for cosmetics with natural ingredients. A significant part of today's lifestyle is cosmetics. Natural lip balm preparations are the most often used cosmetic product to enhance the beauty of lips and add a glamorous sheen and luster. Lip balms offer a non-invasive approach to encourage hydrated and healthy lips. Lip coloring has long been used to enhance lip beauty and add radiance to the face. The basis of current cosmetic lip products is the use of hazardous chemical substances that have a range of negative effects. This is why it's important to do study on the natural ingredients used to make natural lip balm.

The demand for herbal products has been rising recently, particularly in the cosmetics sector. One of the widely used cosmetic products, lip balm served as a protective shade for the lips and may have several harmful effects of lead and oxidative pressure technology.

The amaranth colorant known as betacyanin pigment, a powerful antioxidant, is found in red dragon fruit (*Hylocereus polyrhizus*). In light of this advantage, the study looks at the antioxidant properties of the betacyanin pigment found in lip balm made from red dragon fruit peels. According to an in-house approach based on the International Food Research Journal, the results showed that the lip balm made from the peel of the Red Dragon fruit included antioxidant capabilities that increased to 2.0%. In conclusion, applying natural color made from the peel of a Red Dragon fruit is risk-free and can serve as an antioxidant-rich natural dye that doesn't change the lip balm's color or texture.

Key word: Red dragon fruit, lip balm, antioxidant qualities, rose petals, and natural dyes

### **INTRODUCTION:**

The winds of social change are blowing strongly in the 21<sup>st</sup> century, affecting cosmetic application everywhere in the world. The word "cosmetic" comes from the Greek word "kosmeticos," which meaning "to adorn." Preparation used for this purpose is called a cosmetic. Cosmetics are external preparations that are applied to the skin, hair, and nails of the body for purposes such as coloring, covering, softening, cleansing, nourishing, waving, setting, molding, preservation, removal, and protection. An item meant to be rubbed, poured, sprinkled, sprayed, injected into, or applied in any other way to the human body or any part for cleaning, enhancing attractiveness, or changing the appearance is referred to as a cosmetic. The study of how combinations and raw materials affect human body parts like lips, skin, hair, and nails is known as cosmetic science. Cosmetics are defined differently in different regions of the world, but generally speaking, they are any material or combination that is applied to the human body's exterior, including the teeth and mucous membranes, with the intention of improving appearance.



---

## **DIFFERENCE BETWEEN LIPS AND REGULAR SKIN:**

Both the skin and the lips have nerve endings that transmit sensory information; however, the outer layer of the skin's epidermis is highly keratinized, whereas the epithelium of the lips is much thinner. Lips only have three to five layers of cells, compared to the 15–20 layers that make up skin. Furthermore, any melanin produced does not appreciably change the redness of lips since they have fewer melanocytes.

Unlike skin, sebaceous and sweat glands, as well as hair follicles, cease close to the boundaries of lips. Lips are more vulnerable to infections, dry weather, and drastic temperature changes than skin because they lack defense glands and have more keratinized layers. Lips may therefore become virally infected, dry up more quickly, and crack more easily.”

---

## **DISORDER IN LIPS:**

### ***SWELLING***

Swelling of the lips, medically known as lip edema, can be caused by various factors such as allergic reactions, insect bites, infections, or injury. It typically presents as an enlargement or puffiness of the lips, often accompanied by redness, pain, or itching. In severe cases, swelling can lead to difficulty in breathing or swallowing, requiring immediate medical attention. Treatment usually involves identifying and addressing the underlying cause, along with medications such as antihistamines or corticosteroids to reduce inflammation and discomfort.

### ***2.SUN DAMAGE***

Lip damage from sun exposure can result in actinic cheilitis, sometimes referred to as “solar cheilitis.” Long-term UV radiation exposure can cause precancerous or cancerous lesions to develop, as well as dryness, cracking, and scaling of the lips. Use lip balms or sunscreens with SPF protection, look for shade when you're outside, and wear protective clothes like hats to avoid UV damage to your lips. It's also advised to regularly check the lips for any strange changes in order to identify possible problems early on.

### ***3.INFLAMATION***

Cheilitis, or inflammation of the lips, can be brought on by a number of things, including allergies, infections, or irritants. Redness, swelling, discomfort, and perhaps even blistering or crusting are possible symptoms. The standard course of treatment entails determining and treating the underlying cause in addition to soothing and protecting the lips with topical corticosteroids or mild lip balms applied under medical supervision. Medical intervention may be required in severe situations to address problems or chronic inflammation.

### ***4.DISCOLORATION***

The dark patches around the lips that are called melanotic macules and frequently occur can be freckles that linger for years. Concern should not be expressed over these marks. Many tiny, dispersed brownish-black patches could indicate Peutz-Jeghers syndrome, a genetic condition characterized by the formation of polyps in the intestines and stomach. Dry lips, lip cracking, and reddening of the mouth lining are symptoms of Kawasaki disease, an illness with no known origin that often affects infants and children 8 years of age or younger.

### ***5.SORE***

A lip sore with firm edges or a raised region could be a sign of skin cancer. Other sores could appear as signs of syphilis or an oral herpes simplex virus infection, among other illnesses. For certain others, like keratoacanthoma, the cause is unknown.

---

## **ADVENTAGES OF LIP BALM:**

- 1.Moisturizing: By nourishing and moisturizing parched lips, lip balms help keep them from cracking or becoming chapped.
- 2.Protection: They protect lips from harm by forming a barrier against inclement weather, such as chilly winds or intense sun.
- 3.Healing: Certain lip balms have components that help heal damaged lips, such as vitamins, antioxidants, or relaxing compounds.
4. Comfort: Using lip balm can instantly relieve painful or irritated lips and have a calming effect.
- 5.Convenience: Lip balms are a great way to keep your lips healthy throughout the day because they are lightweight and simple to apply while you're on the go.

---

## **METHOD OF PREPARATION OF LIP BALM:**

The weight of each of the materials described above was determined with an accuracy of 0.1 grams using a digital balance. The solid raw ingredients for the herbal lip balm were heated at a steady temperature over an indirect flame during the preparation process. A glass measuring jar was filled with all of the ingredients, including the olive oil and glycerine, and heated until the ingredients melted together. The beeswax was melted in a 50 cc beaker over an indirect flame that was set to a maximum temperature of 90°C after being roughly ground into small, homogenous pieces. In the same beaker,

the cetyl alcohol was also melted. Powdered rose petals and dragon fruit peel in the proper amounts were added, and the coloring component was thoroughly combined and Rose oil was added dropwise for aroma, and the mixture was constantly mixed until it was homogenous. The prepared product was then poured into a wide-mouth container and allowed to cool to room temperature. Before being utilized, the ice bath containers were left for approximately an hour in a cool, dry place away from direct sunlight until they solidified. They were then stored at room temperature for 48 hours to ensure stability and conduct analytical testing.

### TABLE : FORMULATION OF HERBAL LIP BALM

#### Formulation of 10g LIP BALM:

INGREDIENTS	QUANTITY (g)
Red dragon peel powder	0.7
Rose petals powder	0.8
Bees wax	2.5
Olive oil	2.6
Glycerin	2.3
Cetyl alcohol	1.0
HuRose oil	1-3 drop

#### EVALUTION OF LIP BALM:

- **Melting point:** Using a Veego melting point equipment Model -VMP – AD(CFT) melting point apparatus, the melting point of lip balm was ascertained by placing a melting point sample in a glass capillary that was sealed with a flame. Within the melting point apparatus, which had a magnetic stirring front, the capillary holding the formulation was submerged in liquid paraffin. Melting was assessed visually, and the point of melting was noted.
- **ORGONOLEPTIC CHARACTERISTICS:** Characteristics of an organoleptic product, including color, taste, smell, and appearance, were examined.
- **TEST OF SPREADABILITY:** The product is applied repeatedly on a glass slide at room temperature to visually observe the uniformity in the formation of the protective layer. It is noted whether the stick broke, fragmented, or deformed during the application.
- **PH MEASUREMENTS:** To look into the potential for any negative consequences, the lip balm's pH was measured. It was decided to keep the formulation's pH as near to neutral as possible because an acidic or alkaline pH could irritate lips. One gramme of sample was dissolved in one hundred milliliters of water to study the pH measurement. pH measurement was done by using pH meter

#### RESULT:

The components utilized in formulation are as follows: glycerine, olive oil, and beeswax and cetyl alcohol as a wax basis; dragon fruit and rose petals powder extract is used as a colorant; and rose oil is used as a fragrance or flavoring agent. The yield of viscous extract from red dragon fruit and rose petals demonstrated no adverse effects of the two natural medication combinations, according to the results of the extract specification test

#### CONCLUSION:

The formulation of lip balm was successfully created with the use of these all-natural components. The formulation appeared to have passed several physicochemical tests and was safe to use based on the results of those tests. Room temperature is the recommended storage setting for this formulation, as indicated by stability data. Beeswax served as the base in the current composition; but, in the future, it can be swapped out for another natural base, such as paraffin wax or shea butter.

#### REFERENCE:

1. Nahata, A. N., Ansari, N. M., Nahar, S., Walode, S. G., & Chatur, V. M. Formulation and Evaluation of Lip Balm Prepared Using Various Herbal Entities. (2022)
2. Chaudhri, S. K., & Jain, N. K. History of cosmetics. In Asian Journal of Pharmaceutics (Vol. 3, Issue 3, pp. 164–167 (2009)
3. Jadhav Apurva Vinodkumar, Godse Kirti Chandrarahar, Desmane Prajakta Pradip; Formulation and evaluation of organic lip balm, Indo-American Journal of Pharmaceutical Research, 2019. ISSN No. 2231-6876, reviewed on 17/04/2019, page no: 1993-1997.
4. Alssendra R. Fernandes, et.al. Stability Evaluation of Organic Lip Balm, Brazilian Journal of Pharmaceutical Sciences, 2013; 49: 293-295.
5. Mayuri Kadu, Dr. Suruchi Vishwasrao, Dr. Sonia Singh; Review on Natural Lip Balm; International Journal of Research in Cosmetic Science, 03/08/2014, 2015; 5(1): 01-03.
6. B.H. Ali, N.A. Wabel, G. Blunden, Phytochemical, pharmacological and toxicological Aspects of Hibiscus sabdariffa L.: A review. Phytother Res, 2005; 19: 369- 375.
7. M.S. Balsam, E. Sagarin, Cosmetics science and technology, Second ed. Wiley Interscience Publication, NY, USA, 2008; 3: 209-512.

- 
8. Medscape. <http://emedicine.medscape.com/article/835209-overview> (assessed on 8 January 2015)
  9. <http://elementsofmorphology.nih.gov/anatomy-oral.shtml> (assessed on 8 January 2015)
  10. M.S. Balsam, E. Sagarin, *Cosmetics science and technology*, Second ed. Wiley Interscience Publication, NY, USA, 2008, 3, pp. 209-512.
  11. Lip Disorders Lip and Tongue Disorders Merck Manual Home Edition.mht [http://www.merckmanuals.com/home/mouth\\_and\\_dental](http://www.merckmanuals.com/home/mouth_and_dental)