International Journal of Emerging Trends in Pharmacy and Medicine
Vol. 01 (03), Jul-Sep 2025, pp. 64-73.
Online ISSN: 3107-4103

Review on Herbal Lip Balm Formulation Containing Matcha Green Tea Powder and Essential Oils

PRAVEEN JAVALI R

Department of Pharmaceutics (Faculty of Pharmacy), Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501
praveenJavalisgk1997@gmail.com

SYED IMRAN

Department of Pharmaceutics (Faculty of Pharmacy), Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501
syedimran665@gmail.com

LIKHITH KUMAR*

Department of Pharmaceutics, Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501

PUNITH RAJ. B

Department of Pharmaceutics, Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501

BHARATH HOSALLI

Department of Pharmaceutics, Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501

VIJAYALAXMI N.K

Department of Pharmaceutics, Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501

MEGHA N.M

Department of Pharmaceutics, Sri Raghavendra College of Pharmacy Chitradurga, Karnataka, India-577501

Abstract

Cosmetics are substances that are intended for application to the body for cleansing, promoting attractiveness. In recent times focus shifted towards the naturally derived cosmetics, because the peoples are more interested in using herbal cosmetic products

*Corresponding Author.

than the synthetic formulation. Because the constituents in synthetic sources have many adverse effects because of presence of dyes and parabens this may cause allergic reactions. Natural lip balms have a reputation for safety and cause fewer negative effects. Nearly every cosmetic product on the market is geared towards the skin, as the skin is one of the most sensitive organs in the body. The intended purpose is to color a person's lips and act to protect them from drying. In this study, we provide a natural alternative to synthetic lip balms. We show that formulating cosmetics will improve the use of herbal ingredients. One of the most widely used cosmetic products on the market is undoubtedly lip balm, which has grown in popularity. The formulation may be made to be easily applied and is often a waxy material (semisolid). Lip balm's general function and goal may be summed up as a protective treatment for the lips that also relieves irritation. This article reviews the development of an organic lip care product with fewer negative consequences. The herbal lip balm formulates using naturally occurring ingredients like herbal extracts, essential oils, bases, natural color and flavoring agents. Various natural ingredients used were bees wax, shea butter, jojoba oil, matcha green tea and vitamin E. Though important thing is that the usage of natural ingredients is safe for everyday use and they have healing properties. It forms external protective layer that protects lip from dust, cold and other environmental condition. It is a gender-neutral product. This article confirms that the usage of natural ingredients in the preparation that shows the fewer side effects compare to other synthetic formulation.

Keywords: Jojoba Oil, Lip balm, Matcha Green Tea, Protection, Shea Butter, Vitamin E.

1. INTRODUCTION

Cosmetics have an important role in this generation. In recent times there is huge demand for herbal medicines and natural products because usages of these products do not produce any harm full effects on human body (Kadu et al., 2015). The Drug and Cosmetic act were introduced in the year 1940 (10-April), the main objective is to manufacturing, import and sale of drugs and cosmetics. This act regulates the import of new drugs to India so that it avoids the entry of spurious drug to our country. The artificially made cosmetics are normally composed of lots of detrimental synthetic excipients. Largely used are natural food, organic vegetables, and herbal medicaments. Lips are sensitive parts of the body that do not hold oil glands, so it is important to protect them by providing continuous moisture to the lips (Madhiri et al., 2024).

Fig. 1. Cosmetics.

The aim of present research is to develop an organic formulation with fewer negative effects. The usage of natural ingredients is safe for everyday use. Lip balm forms a protective oily layer that is adhesive and resist moisture loss. Some lip balm contains synthetic chemical, preservative and artificial colorant that may cause allergic reaction or long-term skin damage. But the herbal balm is formulated using natural ingredients derived from plant. This lip balm includes herbal extracts, essential oils and natural waxes that provide hydration and protection (Suruahe et al., 2025). Topical formulation (Topical products) must be format which allows for access of the active moieties of the combination to traverse through the skin layers.

Additionally, the skin is a multilayered organ, with the outermost layer serving as the strongest barrier against drug or other penetration. (de Andrade Lima et al., 2020). Lip balms usually have bees wax, shea butter, matcha green tea and various essential oils. Cosmetic brands and industry has realized the impact of using natural ingredients and also on some of the lip care products, they came out promising least side effects, to land in the market safe for consumers and also, now it is "environmentally friendly", taking chemicals out of the formulation (Pradhan et al., n.d.). It is also noted recently that the usage of cosmetics, primarily lip care by women has increased quickly in the area of beauty care. Therefore, the volume of consumer usage has increased (Pawar et al., 2021).

The purpose of lip balm compositions is to shield the lips from pollution-induced dryness, chapping, and damage. Natural lip balms can support healthy lips by hydrating them. (Paithankar et al., 2023). Cosmeceuticals have some medicinal properties and provide protection against degenerative skin diseases. This study focuses on the use of natural products, which are associated with minimal adverse effects. Unlike decorative products, lip balms are intended to protect and care for your lips primarily. Lip balms will form a protective, oily (or) layer following application, which will help moisturize the lips (Nahata et al., 2022).

In developing this formulation, we included jojoba oil and lemon oil as essential oils. Jojoba oil is commonly used in the pharmaceutical industry for preparing cosmetic products. Jojoba oil helps restore the normal health of the hair and skin. Jojoba oil is commonly used to enhance spreadability and promotes absorption (Gad et al., 2021.).

Fig. 2. Lip Balm.

In today's life style, the public has interested about the usage of natural substance in the formulation, because many cosmetics contain harmful synthetic excipients. Because of the presence of natural substances, the formulation does not cause any adverse effects on human body. Lip balm contains moisturizing agents like shea butter that help to prevent water loss.

1.1. *Lip and Lip Balm*

Typically, it also includes wax, which allows the formulation to adhere effectively to the lips (Bharanidharan et al., 2023). The aforementioned natural ingredients serve as a barrier to hydration while delivering therapeutic benefits with minimal adverse effects. To guarantee safety, effectiveness, and improved lip care, this study entails creating and assessing a herbal lip balm formulation using a few chosen herbal constituents. (Bobade & Dhotre, 2025.).

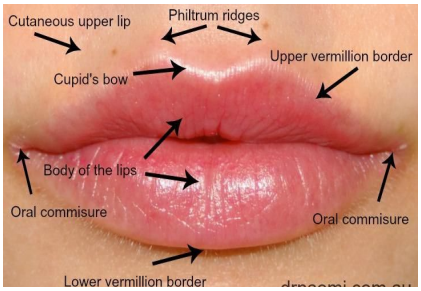

Fig. 3. Structure of lips.

Lips comprise skin, muscles, and surrounding tissues, consisting of areolar tissue and mucous membranes (Madhiri et al., 2024.). According to (Suruahe et al. (2025), the lips serve as organs of speech, suction, and comprehension. The skin around the lips is bordered by a crimson mucous membrane that lines the lips' edges. The buccal orifice at the lip's edge is entirely covered by coronary arteries, which make up the sub-mucous layer (Sankpal et al., 2022).

1.1.1. *Advantages of lip balm:*

- Primary function of lip balm acts as barrier against the environmental conditions and prevent irritation.
- Lip balm helps to prevent dryness and chapping
- Lip balms used by both men and women's.
- Main aim is to enhance the beauty of the lips. (Paithankar et al., 2023) (Nahata et al., 2022) (Pal et al., 2024.)

1.1.2. *Disadvantages of the lip balm:*

- Low quality ingredients are used during manufacturing may cause adverse effect or may cause harmful to the lips seriously.
- Lip balm addiction.
- Some of the manufacturing companies ignoring the help benefits, and they eventually damaging the natural color of the lips.
- Presence of natural oils in lip balm have other disadvantages such as greasier and less spread ability. (Paithankar et al., 2023) (Nahata et al., 2022.) (Pal et al., n.d.)

1.1.3. *Applications of the lip balm: (Paithankar et al., 2023)*

- To prevent dryness & protect lips from environmental elements, natural lip balm is applied.
- Various lipbalm is available in the market from brands such as nivea, Himalaya, blistex, and baby lips.
- During production, it is essential to maintain a proper balance of key ingredients such as butters, oils, waxes, and other excipients.

2. DRUG PROFILE

Table 1. Materials and their roles in Lip Balms.

Sl. No	Ingredients	Role
1	Bees wax	Provide structure, improve glassiness.
2	Shea butter	Offer excellent moisturizing properties, contribute to smoothness, reducing dryness and cracking.
3	Vitamin-E	Anti-oxidant, maintain stability and preservative .
4	Lemon oil	pH balance and antiseptic activity.
5	Matcha green tea powder	Anti-oxidant, moisturizing, smoothing and healing properties.
6	Jojoba oil	Enhance spread ability and absorption.

3. METHODOLOGY & PROCEDURE

3.1. *Homogeneous Mixing and Melting Method*

3.1.1. *Method 1*

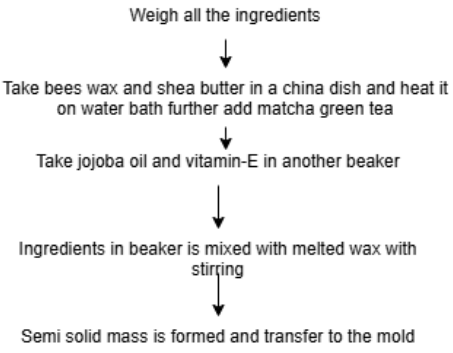

Fig. 4. Method 1 (Gad et al., 2021.).

3.1.2. *Method 2*

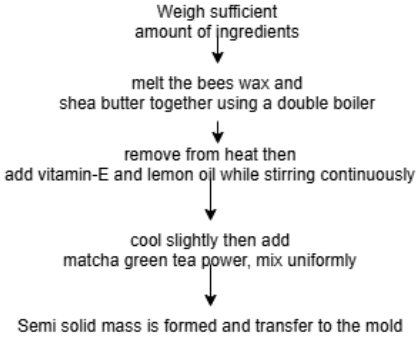

Fig. 5. Method 2 (Pal et al., 2024.).

3.1.3. *Method 3*

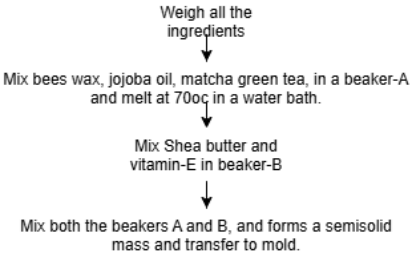

Fig. 6. Method 2 (Paithankar et al., 2023).

4. EVALUATION

4.1. *Evaluation Parameters*

4.1.1. *Organoleptic properties*

The lip balm's overall organoleptic properties—color, flavor, odor, and appearance—were investigated. (Bharanidharan et al., 2023)

4.1.2. *PH measurement*

pH should be in the range of 4.5 to 6.5 (compatible with lip skin. (Ku Hasnan et al., 2025) 1gram of formulation is added to 25ml of distilled water (Pawar et al., 2021). The main purpose of pH measurement is to maintain the constant pH as same as the lips.

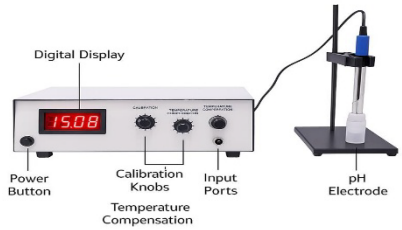

Fig. 7. pH meter.

4.1.3. *Skin irritation*

The irritation test was performed to evaluate any reactions following application. Signs such as itching, swelling, or redness were monitored, and in the absence of these reactions, the test was considered successful (Anisa et al., 2019). The purpose of this test to avoid skin irritation after its application.

4.2. *Testing*

4.2.1. *Stability Test*

The formulation was evaluated for its stability over 30 days under different temperature condition, firstly room temperature (25±2ºC), the higher temperature in oven (40±2ºC) and by using refrigerator (5±2ºC). The organoleptic property and spreadability was assessed on 7th, 15th and 30th day (7-20). This test is performed to check the stability of formulation at different temperatures.

4.2.2. *Spread Ability Test*

The by product is applied over and over (at moderate temperature) on slide to prominently access the consistency of the formulation and to check whether it misshape 0r broke while applying.

- **G–Good**: consistency, unbroken: smooth use with no warping or misshaping of the product
- **Intermediate**: consistency; leaves few disintegrations; correct implementation; minor change of the product.
- **B-Bad**: no consistency; leaves more disintegration; inconvenient to apply with significant deformation of the lip balm. (Nahata et al., 2022) (Bhure et al., 2025.)

The spreadability test is mandatory for lip-balm formulations, because formulation is administered on lips by spreading. The product with good spreadability shows better pharmaceutical action.

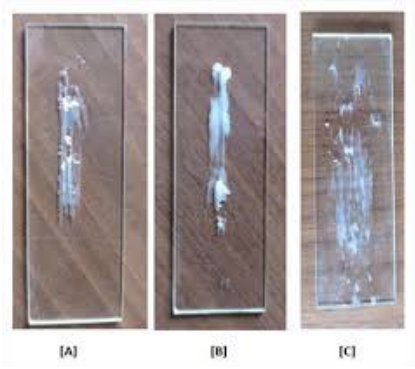

Fig. 8. Spread Ability Test.

5. CONCLUSION

An extensive analysis of the situation of natural lip balm products is provided in this article. The essential details of formulation techniques and assessment parameters were also included in this review study. After application, the lip balm creates an oily, sticky, flexible, and waterproof coating. Formulating a lip balm product with the maximum amount of natural ingredients—such as bee's wax, shea butter, jojoba oil, matcha green tea, vitamin E, and essential oils—is the main goal of this study. Thus, this formulation will not only improve moisturization but will also provide therapeutic benefit with little or no potential to cause side effects. The demand (or use) for cosmetic increases gradually. Many national and international companies are engaged in cosmetic preparation. Natural components provide excellent moisturizing, antioxidant, and soothing properties that makes lip balm effective against dryness, cracking, and environmental damage. The prepared formulation stored in both room temperature and refrigerator, it shows similar stability behavior. Herbal lip balm is an alternative to synthetic lip balms and it is safe for human use. Many national and international manufacturers motivate the use of natural components in a beauty products or cosmetics. With growing consumer awareness, there is an increasing demand for herbal, natural lip care products. It can be determined that the development of lip balm using natural ingredients demonstrates significant potential for further applications in both personal care and commercial use. With all knowledge, we concluded that this formulation has better moisturizing property along with anti-inflammatory activity compare to other formulations in the market. Here we concluded that the herbal related products have wide scope in the future. Compare to other products, demand for herbal formulation is more because of its general use and medicated use.

6. REFERENCES

de Andrade Lima, L. J., Cominato, L., & Oliveira, H. M. (2020). Lip balm using cinnamon oleoresin and essential oil: microbiological safety assessment with accelerated

and extended stability. Research, Society and Development, 9(9), e539997544. https://doi.org/10.33448/rsd-v9i9.7544

Anisa, H., Sukmawardani, Y., & Windayani, N. (2019). A simple formulation of lip balm using carrot extract as a natural coloring agent. Journal of Physics: Conference Series, 1402, 055070. https://iopscience.iop.org/article/10.1088/1742-6596/1402/5/055070

Azmina, S. N. H. M., Sulaimana, N. S., Yosria, N. A. B., Norb, M. S. M., & Abdullaha, P. S. (2021). Stability analysis of carrot-based natural moisturising lip balm. Chemical Engineering Transactions. 83. https://doi.org/10.3303/CET2183009

Bharanidharan, D., Krishnan, P., & Niranjanasree, A. C. (2023). Formulation and characterization of beetroot lip balm using 23 factorial design. World Journal of Pharmacy and Pharmaceutical Sciences, 13(1), 1084–1093.

Bobade, A. S., & Dhotre, B. (2025). Formulation and evaluation of herbal lip balm: A detailed review. International Journal of Sciences and Innovation Engineering, 2(5).

Bhure, A., Patil, S., & Hiremath, N. (2025). Formulation and evaluation of Moringa seeds lip balm. International Journal of Scientific Research and Technology.

Gad, H. A., Roberts, A., Hamzi, S. H., Gad, H. A., et al. (2021). Jojoba oil: An updated comprehensive review on chemistry, pharmaceutical uses, and toxicity.

Gawade, P., Shelake, M., Vishwakarma, R., Shaikh, S. S., & Yadav, P. (2024). Beetroot powder loaded medicated lip balm. International Journal of Pharmaceutical Chemistry and Analysis.

Hasnan, K. N. H. A. K., Hasni, N. A., Sabaruddin, N. N. M., Hashim, S., & Rosley, R. (2025). Optimizing moisture and color: A comparative study of lip balms formulated with raspberry seed oil and coconut oil. [Journal Title], 6(1). https://doi.org/10.30880/mari.2025.06.01.025

Kadu, M., Vishwasrao, S., & Singh, S. (2015). Review on natural lip balm. International Journal of Research in Cosmetic Science, 5(1), 1–7.

Kosanam, S., & Pasupula, R. (2021). A review on cardioprotective mechanism of chemical constituents of medicinal plants. Journal of Pharmaceutical Research International, 33(54A), 104–114.

Lahire, P. B., Raut, K. S., shinde, S. dnyaneshwar, pawar, J. baliram, & Shere, M. G. (2025). Review on formulation and evaluation of herbal Lemon lip balm. International Journal of Sciences and Innovation Engineering, 2(5).

Madhiri, R., Vyza, M., Musaapeta, S. R., Miriyala, R., et al. (2024). A comprehensive review on comparison and evaluation of herbal lip balm.

Nahata, A. N., Ansari, N. M., Nahar, S., Walode, S. G., & Chatur, V. M. (2022.). Formulation and evaluation of lip balm prepared using various herbal entities. International Journal of Creative Research Thoughts (IJCRT).

Nayak, P., Charyulu, R. N., DS, S., D'Souza, S., & D'Souza, N. G. (2016). Development and characterization of herbal lip jelly containing Beta vulgaris alcoholic extract for lip shade. Research Journal of Pharmacy and Technology, 9(12).

Nhuchhe Pradhan, K., Das, S., Lakshmi, C. S. R., & Kavitha, P. N. (2023). Cosmeceutical lip balm: Harnessing the power of herbal ingredients. World Journal of Pharmaceutical Research, 12(17), 770–780.

Paithankar, S., Pansare, K., Pawar, A., & Jadhav, D. (2023). Formulation of natural lip balm. International Research Journal of Engineering and Technology (IRJET), 10(1).

Pal, P., Patidar, V. K., Jagwani, A., Sheikh, A., Rathore, C., & Choudhary, A. (2024). Formulation, evaluation and comparative study on herbal lipbalm.

Pawar, J. C., Kandekar, U. Y., Vichare, V. S., & Ghavane, P. N. (2021). Production and analysis of lip balm using herbal resources. Journal of Pharmaceutical Research International.

Sankpal, R. M., Kadam, S. R., Aswale, N. S., & Navale, S. S. (2022.). Natural lip balm. International Journal of Advanced Research in Science, Communication and Technology (IJARSCT).

Suruahe, R. S., Shere, M. G., Raut, T. D., et al. (2025). Review on formulation of herbal lip balm. International Journal of Sciences and Innovation Engineering. ISSN (Online): 3049-0251.

Veludurthi, P. A., & Vadaga, A. K. (2024). A comprehensive review of formulations, ingredients, advances, and future perspectives in lipcare cosmetics. Journal of Pharma Insights and Research, 2(3), 123–128.

Visht, S., Salih, S. S., Mohammed, D. A., Abduljabbar, A. A., Hama, S. J., & Khudhair, I. A. (2024). Formulation and evaluation of lip balm using different herbal pigments. https://doi.org/10.5530/pres.16.2.46