

Formulation and Evaluation of Herbal Lipstick with Therapeutic Importance

Sukanya S.Thite

Department of Pharmaceutics, Shri santkrupa college of pharmacy, Ghogaon. Shivaji university Kolhapur, Maharashtra.

Date of Submission: 15-07-2025

Date of Acceptance: 25-07-2025

ABSTRACT:

Cosmetics are the substance used to alter the appearance or fragrances of the human body. Nowadays the demands for herbal cosmetics in the world market are growing and are inevitable gifts of nature. Lipstick is one of the beauty products that dictates the unique market. This product has increased and choice shades of colour, texture and lustre have changed and become wider. In market hundreds of shades of colours are available to satisfy the demand by the women. It Colouring pigments is obtained from of Beta vulgaris (Beetroot) Punica granatum (pomegranate). The results are shown and prepared lipstick. The prepared lipstick formulation and showed ideal properties like shining, spreading and smoothness of lips after application. Also, evaluation parameters such as colour, melting point, surface anomalies, aging stability, solubility, pH, skin irritation, perfume stability. The lipstick having natural ingredients or nutrients it is safe to use that keep lips healthy. Hence from present investigation it was concluded that, formulated herbal lipstick having minimal and no side effects and thus showing maximum local effect on lips.

Keywords: Lipstick, methods of preparation, Formulation, Evaluation, Colour, safe.

I. INTRODUCTION

Cosmetics have become an integral part of every woman's life. Herbal cosmetics are products which are formulated using various permissible cosmetic ingredients in which one or more herbal ingredients are used to provide distinct cosmetic benefits^[1-4]. They are also called as herbal cosmetics. Herbal cosmetics are the latest trend in the field of beauty and fashion. The herbal cosmetics industry is experiencing a rising graph for its market and products which are being sold the world over. Yet, the market is still growing and there is scope for new products who can deliver quality natural based products that will satisfy the consumer's requirements. Herbal products are gaining popularity as nowadays most women prefer

natural products over chemicals for their personal care to enhance their beauty as these products supply the body with nutrients and enhance health and provide satisfaction as these are free from synthetic chemicals and have relatively less side-effects compared to the synthetic cosmetics. Lipstick is cosmetic preparation used to color the lip and protect lips from external environment. Coloring lips in an ancient practice date back to prehistoric period. Now-a-days the use of herbal product has increased and choice of shades of colors, textures, luster, have been changed and become wider. This can observed from the facts that lipstick is marketed in hundred of sheds of colors to satisfy latest demand of the women. The dyes that contribute to the color of the lipstick are very harmful to humans on consumption. Coal tars are the basic ingredients from which synthetic dyes are formed can cause allergy, nausea, dermatitis, and drying of the lips. In a more severe form they can be carcinogenic and even fatal^[5-8]

Lipstick:

Lipstick is a cosmetic product that contains pigments, oil waxes and emollients that use colour, texture and lip protection. In herbal lipstick many natural ingredients are found safe on the lips. Lipstick contains wax, oil, antioxidants and emollients. Wax provides structure in solid lipstick. The lipstick can be made of several particles such as honey, ozokerite and candelilla wax^[9]. Various oils and fats are also used on the lipstick, such as olive oil, castor oil, cocoa butter, lanolin, and petrolatum. It is a cosmetic product to enhance the beauty of women. Herbal lipsticks are used to convey attractive colour, texture and protect the lips. These lipstick preparations are harmless to our lips and have no side effect. It is a cosmetic product to enhance the beauty of women. Herbal lipsticks are used to convey attractive colour, texture and protect the lips. These lipstick preparations are harmless to our lips and have no side effect^[10]. The taking into consideration the importance of natural products, the present work

was aimed at formulating and evaluating lipsticks containing only natural ingredients. The ingredients included in the study, extract powder of the Beta vulgaris (Beetroot) Punica granatum (pomegranate) lemon oil, orange essence, castor oil, beeswax, methyl paraben.

Herbal lipsticks having ideal characteristic:

- It is smooth and easy to apply.
- It is non-irritant and non-toxic.
- Should have attractive colour and shine.
- Free from grittiness and should be non-drying.
- It's having required plasticity, different odour, colour, texture and packaging etc.
- It is stable in shelf-life time and it is free from bloom and sweating during stop.
- rage of lipstick.
- It should not melt or harden within reasonable variation of climate temperature.^[11]

Composition: ^[12]

The basic raw material required for formulation of lipstick can be classified as:

1. Wax mixture such as solid waxy base and soft waxes.

2. Oil mixture and softening agent.
3. Preservative, fragrances, surfactant, antioxidant.

Taxonomical Classification:^[13] Beetroot (Garden beets)

Plants description: Annual or biennial herb; leaves globous, ovate to cordate, dark green or reddish, frequently forming a rosette from the underground stem; roots conspicuously swollen at junction with stem; flowering stalk 1.2–1.8 m tall, produced the second year from the top of the tuber; flowers small, numerous in a tall open panicle; fruit an aggregate of 2 or more fruits forming an irregular dry body; in garden beets, roots are usually a deep red colour and may be globular or cylindrical shown in fig 1 was showed taxonomical classification in table. In another study, Garden beets are reported to have powerful detoxification^[14] Kidney ailment and in another study, beetroot have lowers cholesterol, blood pressure and also in skin disorder was reported and also have decomposition of anticarcinogen factors, antioxidant^[15]

Table 1: Taxonomical classification of Beetroot

Categories	Kingdom	Division	Class	Botanical Name	Family
Beetroot	Plantae	Tracheophyte	Magnoliopsida	Beta vulgaris	Amaranthaceae

Pomegranate (Punica granatum)

The pomegranate is a shrub or small tree that could grow up to 10 meters of height with many branches with spines. Leaves are opposite 3–7 cm (1.2–2.8 in) long and 2 cm (0.79 in) broad. The flowers are yellow to bright red and 3 cm (1.2 in) in diameter, with three to seven petals.^[14]

Fruits are berries with a strong skin, like leather, intermediate in size between a lemon and a grapefruit, 5–12 cm (2.0–4.7 in) in diameter.^[7] Fruits have many seed with fleshy and edible coats (called sacrotesta). The number of seeds in a pomegranate can vary from 200 to about 1400.^[15]

Table no.2: Taxonomical classification of pomegranate

Categories	Kingdom	Division	Class	Botanical Name	Family
Pomegranate	Plantae	Magnoliophyta	Magnoliopsida	Punica granatum	lythraceae

Matarial and method

Bees wax, butter, castor oil, coconut oil, olive oil, Vanilla essence, beetroot powder

pomegranate and lemon juice, methyl paraben were purchased from local markets of karad. various material which are used in current investigation.

Table no.3 composition and importance of different used formulation of lipstick.

Ingredient	Quantity taken	Importance of ingredient
Bees wax	1gm	Hard wax(hardness)
Coconut oil	1.5ml	Hard wax(hardness)
Olive oil	1ml	Soft wax (glossy)
Castor oil	1gm	Blending agent
Edible colouring matter like beetroot powder,pomegranate powder	2gm	Coloring agent
Vanilla essence	5-6 drops	Flavouring agent
Methyl paraben	0.75gm	Preservative
Lemon juice	3 drops	Anti-oxidant



Figure 1: Ingredients of lipstick

Procedure :-

- Weight of all the ingredients in a porcelain container.
- Place a porcelain vase in a water bath and all ingredients are melted.
- Then the beeswax is mixed with castor oil regularly.
- Lemon juice are also added as an Antioxidant.
- Then added methyl paraben as a preservative and also used as antimicrobial and antifungal agent.
- Vanilla essence flavouring agent is essential.
- Store in the refrigerator.
- Cover the top layer with a sharp knife and remove the stick with the mould.
- Apply lipstick using flame fast fashion gives gloss to the top layer of lipstick.
- Perform soft temperature tests.
- Apply lipstick to the lipstick container.



Figure 2: Intermediate stage of formulation

Uses of Ingredients: ^[16-20]

1. Bees wax :

- It is thickening agent.
- It is help retain to moisturizing skin.
- It is widely used in cosmetic product.
- Bees wax in used in lip-balm, lip-gloss and hand creams.



Figure 3 : Bees Wax

2. Castor oil:

- It is used as a blending property.
- Having a strong laxative effect.
- It is having ability to heal chapped lips.
- Used as an ingredient in skin care products.



Figure no.4 : Castor oil

3. Lemon Juice :

- It is used as an antioxidant agent.
- It works for pigmented lips.
- It as an effective lightening.
- It is not only healing dry lips, but also helps in reducing pigmentation.

- Nourishment and hydration to dry, cracked lips without any negative side effects.



Figure no 5: lemon juice

4. Beetroot extract:

- It is used as a colouring agent.
- Adds a tinge of pink to your lips.
- Acts as the best natural moisturizer for your lips.
- Helps in getting rid of darker lips making your lips brighter and lighter.



Figure no.6 : Beetroot extract

5. Pomegranate extract:

- Rich in antioxidants.
- May help keep inflammation .
- May have anticancer properties.
- May offer heart health benefits.
- Support urinary health.



Figure no.7: Pomegranate extract

6. Olive oil :

- Reduces inflammation. Olive oil can decrease inflammation, a key driver of heart disease ..
- Reduces oxidation of LDL (bad) cholesterol.
- Improves blood vessel health.
- Helps manage blood clotting.
- Lowers blood pressure.



Figure no. 8: Olive oil

7. Coconut oil :

- Protect Your Skin From UV Rays.
- Increase Your Metabolism.
- Improve Your Dental Health.
- Improve Brain Function.
- Moisturize Your Skin.



Figure no.9: coconut oil

8. Methyl paraben:

- It is used as a preservative.
- Used as an antimicrobial agent.
- Used as an antifungal agent.



Figure no.10 : Methyl paraben

9. Vanilla essence:

Helps to slow down signs of ageing like fine lines, wrinkles, and age spots.



Figure no.11 vanilla essence

• Evaluation of Herbal Lipstick:

It is very important to keep the same standard of herbal lipstick, keeping this concept in mind made with herbal lipsticks tested on parameters such as colour, pH, melting point, aging stability, surface anomalies, solubility test, skin irritation test.

• Physical Evaluation of lipsticks ^[21-32]:

• Colour and texture:

The formulated lipstick shown attractive brownish red colour except F1 shows faint brownish red. Lipsticks were checked for colour, glossy and smooth texture.



Figure no.12: Colour and Texture

• pH

The pH of formulated herbal lipsticks was determined using a digital meter and pH paper.

• Determination of Melting Point:

Determination of melting point is an important Parameter for lipstick formulation; as it is an indication of the limit of safe storage. The melting point of formulated lipstick was determined by the capillary tube method. Approximately 50 mg of lipstick sample was taken and melted and filled into a glass capillary tube opened at both ends. Capillary was cooled with ice for 24 h and increased with a thermometer. The

thermometer with capillary was deep in the beaker containing full of water which was placed on a heating plate with a magnetic stirrer. Heating and stirring were started slowly at a fixed speed. The temperature at which material moves along the capillary tube was considered a melting point.

• Aging stability:

Prepared herbal lipstick was stored at refrigerator temperature (40 °C), room temperature (20 to 250 °C), and high temperature (30 to 400 °C) for 1 h. Various parameters such as bleeding, streaking, catering, and blooming were observed. Stability studies: Stability studies of lipsticks important to predict the possible changes that may occur to the lipsticks since the product manufactured until the end of the product shelf life. In the stability study, the formulation was subjected to different temperature conditions to assess the changes that occur over time the stability studies were conducted for one month. The lipstick formulated did not exhibit any change overtime. The colour, odour and Spread ability of all the formulated herbal lipstick remained unchanged over one month.

• Surface anomalies:

This was studied by the surface defects, such as the formation of crystals on the surface, contamination by moulds, fungi, the formation of wrinkles, exudation of liquid substances and solid fatty substances.

• Solubility test:

The formulation herbal lipstick was dissolved in various solvents like chloroform, acetone, hexane, petroleum ether, water, alcohol etc. & the solubility was observed.

• Skin irritation test:

It is carried out by applying the product on the skin for 10 min.

• Perfume stability:

The prepared herbal lipsticks were tested after 30 days, to record fragrance.

II. RESULT AND DISCUSSION:

In last few decades there has been tremendous boost in use of cosmetics by women. The present work formulation and evaluation of herbal lipsticks was aimed to formulate a lipstick using herbal ingredients with a hope to minimize

the side effects as produced by the available synthetic ones The different formulation, evaluation parameters like colour, pH, melting point, surface anomalies, solubility test, skin irritation test and aging stability... etc, the results are shown in the tab no.3. Due to various adverse effects of available synthetic preparation, hence from present investigation, it was concluded that this formulated herbal lipstick, having minimal and no side effects and thus showing maximum local effect on the lip.

Table No. 3 Evaluation of formulated lipstick

Sr.no	Evaluation parameter	observation
1.	Colour	Wine red
2.	pH	3-5
3.	Melting point	60-64
4.	Aging stability	Smooth
5.	Surface anomalies	No defect
6.	Solubility test	Chloroform
7.	Skin irritation test	No
8.	Perfume stability	Stable

III. CONCLUSION

Beet root extract obtained from Beta vulgaris and Pomegranate extract obtained from Punica granatum used as colouring pigment. The lipstick was evaluated for various criterions lipstick effects that show good properties such as lightness, shining, spreading, and smoothness of the lips. A lipstick is used to rejuvenate the lips muscles maintain the elasticity of the skin, remove adhered dirt particles and improve the blood circulation. The benefits-based cosmetics are their nontoxic nature. It nourishes the lip skin. This lipstick supplies vital nourishment to the lip. It helps in the elimination of wrinkles, cracking, dryness and folds on lips. Lipstick exfoliates little and provides a soothing, calming and cooling effect on the lip. They restore the natural shine of lip in the optimum time period. Frequent Uses of natural lip improve lip texture and Attractive colour. The prepared lipstick formulation showed ideal properties like shining, spreading and smoothness of lips after application. Further studies through a detailed clinical trial may be suggested to ensure safety of these formulation. The findings of the study also provide guidance on the effects of the ingredients towards physical properties consumer acceptance of lipstick formulation.

REFERENCES:

- [1]. Gediya SK, Mistry RB, Patel UK, Blessy M, Jain HN. (2011). Herbal plants : used as cosmetics. J Nat Prod Plant Resour. 2011; 1: 24-32.
- [2]. Joshi LS, Pawar HA. (2015). Herbal Cosmetics and Cosmeceuticals: An Overview. Nat Prod Chem Res. 2015; 3: 170. doi:10.4172/2329-6836.1000170
- [3]. Chattopadhyay PK. (2005). Herbal Cosmetics and Ayurvedic Medicines, National institute of Industrial Research. 2005; 1st ed.: pp. 45-50.
- [4]. Suganya K, Preethi PS, Suganya M, Usha Raja Nanthini A. (2016). Natural Pigments in Cosmetics-Past to Present. International Journal of Pharmaceutical Sciences and Business Management, 4(6): 7-14.
- [5]. Ilahya R, Hdider C, Lenucci MS, Tlili I, Dalessandro G. (2011). Phytochemical composition and antioxidant activity of high-lycopene tomato (*Solanum lycopersicum* L.) cultivars grown in Southern Italy. Scientia Horticulturae., 127: 255– 261.
- [6]. Srivastava S, Srivastava AK. (2013). Lycopene; chemistry, biosynthesis, metabolism and degradation under various abiotic parameters. J Food Sci Technol., DOI 10.1007/s13197-012-0918- 2
- [7]. Lycopene Extract from Tomato. Chemical and Technical Assessment (CTA). Prepared by Susanne Rath, Ph.D., and reviewed by Zofia Olempska-Beer, Ph.D, and Paul M. Kuznesof, Ph.D. Available from URL: http://www.fao.org/fileadmin/templates/agis/pdf/jecfa/cta/71/lycopene_extract_from_tomato.pdf
- [8]. Malviya N. (2014). Isolation and Quantification of Lycopene from Watermelon, Tomato and Papaya. Research Journal of Recent Sciences. 3: 68-70.
- [9]. Chattopadhyay PK. Herbal Cosmetics and Ayurvedic Medicines, I ed. National Institute of Industrial Research, 2005, p.45-5
- [10]. Sumeet Dwivedi. Formulation, evaluation and antimicrobial activity of herbal lipstick. Recent Advances in Prospects and Potential of Medicinal Plants, 39-43.
- [11]. Thanisorn, Rojanadilok, NanagaraByaporn, and Bunchapattanasakda Chanchai. "Thai Consumers' Perception on Herbal Cosmetic Products: A Comparative Study of Thai and Imported Products." (2012): 35-40.
- [12]. Chattopadhyay, P.K., Herbal Cosmetics and Ayurvedic Medicines, I ed. National Institute of Industrial Research, 2005:45-50.
- [13]. Pooja Mishra and Sumeet Dwivedi. Formulation and evaluation of lipstick containing herbal ingredients. Asian J Med Pharm Res., 2012; 2(3): 58-60.
- [14]. Simmons JV. The science of cosmetics. 2nd ed. 1995. P.139.
- [15]. Nadkarni, A.K. Indian Materia Medica, 3rd Ed, volti. PopularPrakashan, Mumbai.1975.
- [16]. Meher Deepali Avinash, Alai Manoj Hari, Nika Shreya Pradeep.herbal lipstick formulation: A New Approach. IJRAP. 2011;2(6):1795-1797.
- [17]. Bharat vishwakarma, Sumeet Dwivedi, Kushagra Dubey and Hemanth Joshi. Formulation and evaluation of herbal lipstick. IJDDHR. 2011;1(1):18-19. 7.
- [18]. Sharma P.P. Cosmetics- formulation and Quality Control, 3rd ed. Vandana Publication, 2005; 35-54.
- [19]. Jain S.K. & Sharma N.K. A Text Book of Pharmaceutics. Vallabh Prakashan, 2005; 127-72.
- [20]. Mittal B.M. and Saha R.N. Handbook of Cosmetics 1st Ed. A Vallabh Prakashan, 2003; 132-56.
- [21]. Kaul, S., Dwivedi's. et.al. Indigenous ayurvedic knowledge of some species in the treatment of Human disease and disorders, Int. J. of Pharmacy & Life sciences, 2010; 1(1): 44-49 16. Kokate CK, P
- [22]. Kadian SS, Sharma A. Stability and application of crude beetroot extracts in different products. IJBPAS, 2013; 2(3): 693-698.
- [23]. Benett, W. (1983). Bennett's Cosmetic Formulary, II ed. Kaul Shefali and Dwivedi Sumeet (2010).
- [24]. Sumeet Dwivedi. Formulation, evaluation and antimicrobial activity of herbal lipstick. Recent Advances in Prospects and Potential of Medicinal Plants, 39-43

- [25]. Herbal Cosmetics and Cosmetics 1st Ed. A Vallabh Prakashan. Ayuvedic Medicines, I ed. National Institute of Sharma P.P. (2005)
- [26]. Kadian SS, Sharma A. Stability and application of crude beetroot extracts in different products. IJBPAS, 2013; 2(3): 693-698
- [27]. Rajesh KumarNema, Kamal Singh Rathore, Bal Krishna Dubey. Text of cosmetics.1sted. New Delhi (India): CBS Publishers & Distributors;2009. p.69-81.
- [28]. Mishra P, Dwivedi S. Formulation and evaluation of lipstick containing herbal ingredients. Asian Journal of Medical and Pharmaceutical Researches. 2012;2(3):58
- [29]. Balsam S. Cosmetics, science and technology.2 ed. 1992.P.365-92.
- [30]. Nanda S, Nanda A, Khar R K. Cosmetic technology. 1sted. New Delhi (India): Birla Publications PVT. LTD;2007. p.330-52.
- [31]. Anil Kumar V., Kalyani R., Sangeeta Kumari L., Aswini Lavanya P. Design, Development and Evaluation of Herbal Lipstick from Natural Color Pigment International Journal of Pharmacy and Pharmaceutical Research. 2020; 18 (2): 276-289
- [32]. Deshmukh S, Chavan M, Sutra M, Singh S. Preparation and evaluation of natural lipsticks from Bixa orellana seeds. Int J Pharm Bio Sci, 2013; 4(3): 139-144.