



Formulation and Evaluation of Herbal Lipbalm: *Ixora-Coccinea linn*

Allabaksha M.Shaikh,¹Mujeeb M.Shaikh,¹Mrunal K.Shirsat,²I.J.Singhvi³

1. Allana College of Pharmacy 2390/B.K.B Hidayatullah Road, Pune-411001
2. SBSPMs, B-Pharmacy College of Pharmacy Ambejogai-431517
3. Nootan College of Pharmacy, Sankalchand Patel University, Visnagar

Abstract

Cosmetics are incredibly in demand since historical time. These days focus is shifted towards naturally derived cosmetics. Daily lip care cosmetics contain harmful components like heavy metals and preservatives, which makes them harmful. Now a day's ladies are more serious towards their beauty and for making face update and attractive, lip care cosmetics and mainly lipsticks are widely used. Current Lipbalm formulation makes face attractive and give a glamour touch to makeup. Herbal lip balm gives attractiveness to lips by coloring and also maintains its softness, also promote healthy lips. Current cosmetic lip products are based on use of enormous chemical ingredients with various side effects. Lip balms are not gender specific products and both men and women can use them. In present day, majority population uses Lipbalm, many newer shades are also arrived in market to avail product as per consumer demand. Most often the applied Lipbalm can get ingested and therefore it becomes mandatory for the health regulators to approve them with caution. Lipbalm can be used for coloring as well as moisturizing the lips. Herbal formulation is a sign of safety, satisfaction and surety as less or no harm to the users and so herbal Lipbalm can be made without the colors being compromised on. This lip balm is formulated according to the scientific procedure and evaluated as per standard requirements.

Key Words:- Herbal lip balm, .Cosmetic, Natural products, Coloring lips

Correspondance Author:-Allabaksha M.Shaikh

Allana College of Pharmacy 2390/B.K.B Hidayatullah Road, Pune-411001

DOI: 10.48047/ecb/2023.12.Si11.022

1. Introduction:

Rising global demand for natural products whose production is harmless to the environment has stimulated the development of natural cosmetics and, within this category, organics. 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 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 [1]. Lipbalms can be used for coloring as well as moisturizing the lips. Herbal indicates safety, satisfaction and surety of less or no harm to the users [2]. Coloring lips is been practiced over years since the ancient period. Also, lips do not

contain any oil gland and therefore need a hydration and protection in all seasons [3]. Due to increasing public concern, on the presence of hazardous synthetic excipients in cosmetics, new techniques are gained to produce products using organic sources. Chapped, dry or cracked lips are very common beauty dilemma, particularly in harsh weather. Lips have no oil glands, so they really need that extra moisture and protection throughout the day [4]. Lips contain little melanin, which provides some protection from the sun. Although many natural products like coconut oil, vitamin E can help keep lips hydrated and healthy when used as part of a larger regimen [5, 6]. In this research work we try to formulated lip balm by using *Ixora Coccinea* flowers as a coloring agent. This flower consists of antioxidant, anti-inflammatory, anti-neoplastic properties. [7, 8, 9, 10, 11].

2. Materials and Methods

a) Selection of Material: *Ixora Coccinea* (Linn.) and other materials used in herbal formulation were selected on the base of literature survey.

b) Source: A dark red healthy variety of *Ixora Coccinea* (Linn.) flowers were collected from the campus of Shri Balaji Shikshan Prasarak Mandal's B. Pharmacy College, Ambajogai.

Isolation/Extraction of color pigments:

Dried and powdered flowers of *Ixora coccinea* produce red color. The leaves of *Ixora Coccinea*. Were collected from the area's campus of SBSPM'S College Ambajogai. The flowers were washed carefully using distilled water and shade dried. The shade dried coarsely powdered flowers of *Ixora Coccinea* (25 gm) was taken and the color pigment was extracted by maceration with ethanol (75 ml). After 24 hours maceration, the extract was filtered through filter paper. The concentrated extract was transferred to 50ml beaker and the solvent was evaporated on a water bath. Dark reddish colored liquid extract was obtained which was carefully stored in an airtight container till further use.

Preparation of herbal lip balm

1. Weight accurately all the excipients.
 2. Add petroleum jelly; melt it in porcelain dish on water bath with at 40 °C.
 3. Add coconut oil and vitamin E into porcelain dish and stir continuously till homogeneous mixture is obtained.
 4. Add the vanillin, methyl paraben.
 5. Mix all the contents at 40 °C with the extract of flowers *Ixora Coccinea*
 6. Add essential oils and essence drop wise with continuous stirring. (12, 13, 14)
- Composition of lip balm is given in Table 2.

Table 2: Formulation of Herbal Lipbalm

Sr.no	Ingredients	Formulation (F1)	Formulation (F2)	Importance
1	Petroleum jelly	3 gm	3 g	Soft wax (Glossy)
2	Coconut oil	1 ml	1 ml	Blending agent
3	Vitamin E	1 ml	1 ml	Antioxidant
4	Vanillin	0.5 gm	0.5 gm	Flavoring agent
5	<i>Ixora coccinea</i>	3 ml	4 ml	Coloring agent & antioxidants
6	Orange essential oil	2 drops	2 drops	Flavoring agent
7	Methyl paraben	0.2 gm	0.2 gm	Preservation

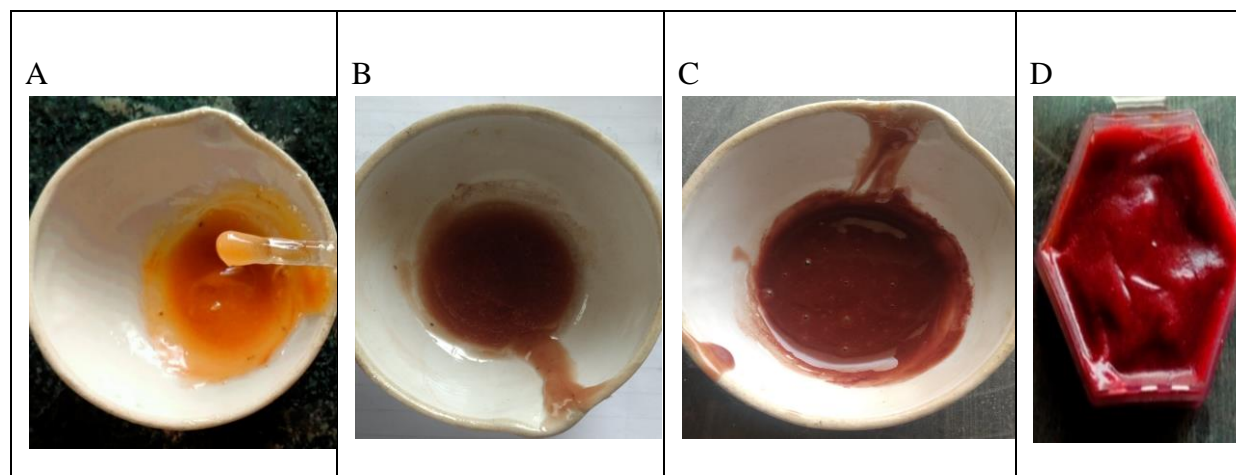


Figure c : Addition of color changes of lip balm

3. Evaluation of herbal Lipbalm To achieve uniform standard of formulated herbal lip balm it is important to carry out its evaluations therefore, formulated herbal lip balm was evaluated through various parameter like melting point, spread ability test, perfume stability, etc.

3.1. Organoleptic properties: The lip balm was studied for organoleptic characters such as color, odor, taste and appearance.

3.2. Measurement of PH: The pH of lip balm was determined in order to investigate the possibility of any side effect. As an acidic or alkaline pH may cause irritation of lips, it was determined to keep the pH of tablet as close to neutral as possible. The pH study was carried out by dissolving 1 gm of sample into 100 ml water. The pH measurement was done using pH meter. (15, 16)

3.3. Melting point:-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. (17)

3.4. Skin Irritation Test: It is carried out by applying small amount of formulated product on the dorsal surface of left-hand skin for 10 minutes of 20 participated voluntary candidates. Then any kind of inflammation, rash, erythema, edema on skin examine. (18)

3.5. Aging Stability: The stability of product was evaluated by storing at 40⁰C for 1 hr. Then various parameters such as bleeding, crystallization of on surface and ease of application were observed. (19)

3.6. Test of spreadability:The test of spreadability consisted of applying the product (at room temperature) 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:(18,19)

G - Good: uniform, no fragmentation; 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.

3.7. Solubility Test:The solubility of formulated herbal lip balm was estimated by dissolving in various organic solvent like ethanol, chloroform, etc. (18)

3.8. Acceptance of product: Both the formulation of herbal lip balm acceptance was examined by 20 voluntarily participated candidates

Sr.no	Evaluation Parameters	F1	F2
1	Color	Maroon	Maroon
2	Melting Point	60 ⁰ C	60 ⁰ C
3	p ^H	6.8-7.0	7.0-7.2
4	Aging stability	Smooth & maroon color	Smooth & maroon color
5	Spreadability	Good	Good
6	Skin irritation test	No	No
7	Solubility	Chloroform	Chloroform
8	Perfume stability	+++	+++
9	Consistency	Smooth and Non-Granulated	Smooth and Non-Granulated

4. RESULTS AND DISCUSSION

The present work is undertaken for formulation and evaluation of herbal lip balm with the hope to minimize the side effects of chemical colors. Plants pigments provide antioxidant properties along with the coloring property used in this herbal formulation, we have used both the properties of *Ixora Coccinea* plant and as the results obtained are the formulated herbal lip balm has antioxidant properties. Prepared lip balm formulations were evaluated for organoleptic characteristics, melting point, spreadability, pH and stability studies. It shows melting point is 60⁰C, which matches with the ideal melting point. Test of spreadability was found to be G -Good: uniform, does not leave fragments, perfect application, without any deformation of the lip balm initially at room temperature. pH of lip balm was near to neutral pH i.e. 6.8-7.2 this would not cause irritation to lips. Although the compatibility of all components in the formulation represents an important factor affecting the stability of a lipstick or lip balm, it is also essential to study the spreadability parameter which, in turn, is influenced by melting point. The aging stability was also found smooth. Solubility test was also performed and found soluble in chloroform. The skin irritation test showed no such sign of itching, irritation, redness, and inflammation. The overall work performed reveal that the formulated herbal lip balm was safe and compatible to skin when compared to previous studies. Further studies on the herbal lip balm

can be done for enhancing antioxidant property and color stability at room temperature. After application of lip balm on volunteers', the ratings found for lip balm was very good for spreadability, excellent for glossiness and also no irritancy found to any of the of the volunteers, therefore, the formulation was found to be safe for skin application.

5. Conclusion:

The present work carried out the formulation and evaluation of herbal lipbalms was aimed to formulate a lip balm using herbal ingredients with an idea to minimize the side effects which occur by using available chemical based synthetic lip balms. Hence, from the present study it was concluded that this formulated herbal lipstick was better with minimum side effects or no side effects. From evaluation studies, formulation of lip balm using this natural colorant was more satisfactory than marketed formulation.

References

1. V.P. Kapoor, Herbal cosmetics for skin and hair care, Natural Product Radiance. 4 (2005) 306-314.
2. A. A. Aher^{1*}, S. M. Bairagi, P. T. Kadaskar, S. S. Desai and P. K. Nimase, "Formulation and Evaluation of Herbal Lip balm From Colour Pigments Of Bixa Orellana (Bixaceae) Seeds", Int J Pharm PharmSci, Vol 4, Suppl 5, 357-359, 2012.
3. J. A. Vinodkumar^{*}, G. K. Chandrarah and P. P. Deshmane, "Formulation and Evaluation of Organic Lip Balm", Indo American Journal of Pharmaceutical Research; ISSN NO: 2231-6876, 2019.
4. Christopoulos A, Mouth anatomy <https://emedicine.medscape.com/article/1899122-overview> Sep 11, 2018
5. Fernandes AR, Dario MF, Stability evaluation of organic lip balm. Brazilian Journal of Pharmaceutical Sciences, 2013; 49; 293-300.
6. Kadu M, Singh V. Review on natural lip balm International Journal of Research In Cosmetic Science 2015; (1): 1-7.
7. Alia SS, Kasojua N, Luthraa A, Singha A, Sharanabasavaa H, Saha A, et al. Indian medicinal herbs as sources of antioxidants. Food Res Int 2008; 41: 1-151
8. Torey A, Sasidharan S, Latha LY, Sudhakaran S, Ramanathan S. Antioxidant activity and total phenolic content of methanol extracts of *Ixora coccinea*. Pharm Biol 2010; 48: 1119-1123
9. Cronstein BN, Weissmann G. Targets for anti-inflammatory drugs. Annu Rev Pharmacol Toxicol 1995; 35: 449-462
10. Aggarwal BB, van Kuiken ME, Iyer LH, Harikumar KB, Sung B. Molecular targets of nutraceuticals derived from dietary spices: potential role in suppression of inflammation and

tumorigenesis1 *Exp Biol Med* 2009;234:85-8491

11. Latha PG, Panikkar KR1 Cytotoxic and antitumor principles from *Ixora coccinea* flowers1 *Cancer Lett* 1998;130:197-202

12. Jain S.K. & Sharma N.K. *A Text Book of Pharmaceutics*. Vallabh Prakashan;2005

13. B.N. Basha, K. Prakasam, D. Goli, Formulation and evaluation of gel containing fluconazole- antifungal agent, *International Journal of Drug Development and Research*, 3 (2011) 4.

14. M.S. Balsam, E. Sagarin, *Cosmetics science and technology*, second ed., Wiley Interscience Publication, NY, USA, 2008, 1, pp. 365.

15. J. Tarun, J. Susan, J. Suria, V. J. Susan and S. Criton. "Evaluation of pH of bathing soaps and shampoos for skin and hair care", *Indian J Dermatol*; 59:442-444, 2014.

16. S Karastogianni, S Girousi, and S Sotiropoulos, "pH: Principles and Measurement". *The Encyclopedia of Food and Health*, vol. 4, pp. 333-338, 2018.

17. M. Padiyar¹, *S. D Jain¹, D. Birla¹, J. Mukherjee¹ and V. Sharma², "Formulation and Characterization of Herbal Lip lipstick Using Colored Pigment of *Punica Granatum*", June 2018

18. N. Himanjan, "Formulation and Evaluation of Herbal Cream from *Azadirachta indica* Ethanolic Extract", *I Journals: International Journal of Research in Drug & Pharmaceutical Science (IJRDPS)*, Volume 1, Issue 1, June 2017.

19. P. Mishra^{1*} and S. Dwivedi², "Formulation and Evaluation of Lip balm Containing Herbal Ingredients", *Asian J. Med. Pharm. Res.*, 2(3): 58-60, 2012.