

FORMULATION AND EVALUATION OF HERBAL LIPSTICK FROM BETA VULGARIS TAPROOT

Nileshwari P. Chaudhari*, Harshada A. Chaudhari, Namarata U. Chaudhari, Laxmi A. Premchandani ,
Amitkumar R. Dhankani, Dr. Sunil P. Pawar

Department of Pharmaceutics, P.S.G.V.P.Mandal's, College of Pharmacy, Shahada- 425409, Dist.-Nandurbar, Maharashtra, India

<p>*For Correspondence: Department of Pharmaceutics, P.S.G.V.P.Mandal's, College of Pharmacy, Shahada- 425409, Dist.-Nandurbar, Maharashtra, India</p>	<p>ABSTRACT Betanin is a red condiment which is derived from the roots of Beta vulgaris. It is often used to impart a red color to food, but sometime also for its natural antioxidant. The aim of present investigation was to formulate and evaluate herbal lipstick from colored pigment of the Beta vulgaris, since lipstick is one of the key cosmetics to be used by the women. Coloring skin particularly skin of face and lips is an ancient practice going back to prehistoric period. In present day the use of such a product has increased and choice of shades of color, texture and luster have been changed and become wider. This can be observed from the fact that lipsticks are marked in hundreds of shades of colors to satisfy the demand of women. The coloring pigment from beta vulgaris taproot was extracted by decoction method and 3 different formulations (F1, F2, and F3) were prepared using Olive oil, Paraffin wax, Bees wax, Pigment-Betanins, Acacia, Lemon juice, Vanilla essence. Among the prepared lipsticks, formulations F3 revealed ideal characteristics of lipsticks. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate an herbal lipstick having minimal or no side effects which will extensively use by the women of our communities with great surety and satisfaction.</p> <p>KEY WORDS: Herbal Cosmetics, Olive oil, White soft paraffin, Beetroot extract, Bees wax, Acacia.</p>
<p>Received: 25.07.2018 Accepted: 22.03.2019</p>	
<p>Access this article online</p>	
<p>Website: www.drugresearch.in</p>	
<p>Quick Response Code:</p> 	

INTRODUCTION

Cosmetic are substances used to enhance the appearance of the human body. Cosmetic means any article intended to be sprayed poured rubbed or sprinkled on, or introduced into or any parts for cleansing, beautifying, promoting attractiveness or altering the appearances. ^[1] Cosmetic also include skin care skin, lotions, powders, perfumes, fingernails and toy nail polish, eye, color contact lenses hair colors, hair spray and gels, deodorants, baby products, bath oils, bubble bath, bath salts, butters and many other types of product are in a great demand in both developing and developed countries. ^[2, 3] Herbal cosmetics have growing demand in the world market and are invaluable gift of nature. The word herbal is symbol of safety in contrast to the synthetic one which has adverse effect on human health. Herbal preparation viz., herbal tablet, herbal tonics, herbal paste, herbal shampoo, herbal contraceptives and herbal lipstick has become popular among the consumer herbal medicines represent the fastest growing segment to heal various ailments. There

are wide range of herbal cosmetics products to satisfy your beauty regime, adding herbal in cosmetic is every safe for skin. Human being has been using herbs for different purpose like food, medicine, beautifying with advancement of science and technology use of natural things including plant has been reduced except for food, vegetarian takes plant and plant only. However, there is resurgence of use of herbs both as drug and cosmetics. [4]

Coloring lips in ancient practice date back to prehistoric period. In present days the use of product as increase and choice of shades of color textures, lustier, have been changed and become wider. The dyes that contribute to the color of the lipstick are dangerous to human on consumption. In a mild form, the coal tar that are the basic ingredients from which synthetic dyes are formed can cause allergy, nausea, dermatitis, and drying of the lips. In the more severe form, they can be carcinogenic and human fatal. [5]

Different Types of Lipstick and Their Uses: [6]

You can find various kinds of lipsticks and they can be utilized based on your mood or shape of one's lips. Today's lipstick market contains number of products with many effects and characteristics. Below are a few forms of lipsticks with basic characteristics.

1. Moisturizing Lipsticks:-

Individuals who have dry lips should use moisturizing lipsticks as it keeps lips soft and smooth. These lipsticks moisturize lips due to ingredients like vitamin E, glycerin and aloe. Other great things about using moisturizing lipsticks are wet and very shiny lips.

2. Satin and Sheer Lipsticks:-

These lipsticks also moisturize and nourish lips and ensure it is shiny and glossy. Sheer and satin lipsticks have high oil ingredients and they could appear darker in the package than they are on lips. Another characteristic of lipsticks with oil components is that it must be repled many times.

3. Matte Lipstick:-

Matte lipsticks are perfect selection for women who are seeking colorful and nice shade. These lipsticks have affectation of flat and not shiny lips. Your lips will look smother and younger with matte lipstick. Plus it is advised to mix products with vitamin E and aloe with matte lipsticks.

4. Cream Lipstick:-

Women who'd small lips should use cream lipsticks. Lipstick with cream formula is not shiny, but it's smooth influence on lips. You need to use lip gloss afterward for desire look. Cream lipsticks contain more wax to be able to protect lips, but also cause aftereffect of dry lips.

5. Pearl and Frosted Lipstick:-

Frosted lipstick makes lips sparkle and glisten. Pearl and frosted lipstick reflects light and makes very shiny effect on your own lips. Negative effects are that could cause lips feel heavy, crack and dry. It is advised to moisturize your lips before utilize this lipsticks.

6. Gloss Lipstick:-

Gloss is extremely popular lipstick for girls with thin and small lips because make lips shine and improve the dimension of depth. Gloss may be along with traditional lipstick.

7. Long Wearing and Transfer Resistant Lipsticks:-

Women who don't have time to utilize Lipstick frequently may use long wearing lipstick. These lipsticks have formula that keep lips look perfect from 4-8 hrs. They're resilient and soon you eat something greasy or oily. Many of them contain moisturizer to balance the dryness of lips.

CHARACTERISTICS [3, 4, 7]

- 1) Lipstick should essentially give good color, apply easily and gives a very natural look.

- 2) It should be free from blemishes on the surface such as large air holes, sweating, blooming, laddering or cracking, a smooth and shiny appearance.
- 3) It makes the lips soft.
- 4) A suitable degree of firmness during reasonable variations of climatic temperature, melting point range of lipsticks is kept between 50-60 °C. So that it can withstand tropical temperature (60-70 °C) as well as be able to spread as fine film over lips at a temperature of $(37 \pm 2 \text{ }^\circ\text{C})$.
- 5) It should have high retention of color intensity without any change in shade.
- 6) The film must adhere firmly to the lips without being brittle and tacky, free from grittiness and be non-drying.
- 7) It should have a desirable degree of plasticity.
- 8) It should be non-irritating to the skin.
- 9) It should have a pleasant odour and flavor.

COMPOSITION ^[7]

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.

MATERIALS AND METHODS

Material:- Bees wax, White soft paraffin, Olive oil, Pigment Betanin, Acacia, Lemon juice, Vanilla essence, perfume are the various material which are used in a current investigation. Following method was adopted during the course of present investigation. ^[8, 9]

Selection of herbs:- The various herbs used in present formulation of herbal lipsticks were selected on the basis of literature survey. ^[10, 11]

Extraction Procedure:- Decoction process was used for the extraction of color pigment and it was prepared by boiling the beetroot with ethanol. The vegetable material was cut into slices having approximately 21mm length, 5mm width and 1-2mm and boiled with ethanol at 60 to 80 °C approximately for 15 min. The starting ratio of crude drug to ethanol is 1:6; the volume is then brought down to one-fourth its original volume by boiling during the extraction procedure. Then, the concentrated extract is filtered and used as such in the formulation. Dark reddish colored extract was obtained. The concentrated extract was then kept in desiccators to remove the excessive moisture. The dried extract was packed in air tight glass container for further studies. ^[12]

Method of Preparation of lipstick:-

- 1) First, the raw ingredients for the lipstick are melted and mixed separately because of the different types of ingredients used.
- 2) One mixture contains the solvents; a second contains the oils, and third contains the fats and waxy materials. These are heated in separate stainless steel or ceramic containers.
- 3) The solvent solution and liquid oils are then mixed with the color pigments.
- 4) After the pigment mass is prepared, it is mixed with hot wax
- 5) The mixture is agitated to free it of any air bubbles. Then it is poured into tubing moulds, cooled and separated from the moulds.
- 6) After final touch up and visual inspection, the lipstick is ready for packaging.

TABLE NO.1- COMPOSITION OF HERBAL LIPSTICK

SR.NO.	INGREDIENT	IMPORTANCE	QUANTITY		
			F1	F2	F3
1.	Olive oil	Blending agent	3ml	3ml	1ml
2.	Paraffin wax	Glossiness	6g	4g	6g
3.	Bees wax	Glossy and Hardness	14g	12g	14g
4.	Pigment-Betanin	Coloring agent	3g	7g	5g
5.	Acacia	Surfactant	1g	1g	1g
6.	Lemon juice	Anti-oxidant	1ml	1ml	1ml
7.	Vanilla essence	Preservative	1ml	1ml	1ml
8.	Perfume	Fragrance	q.s	q.s	q.s

EVALUATION OF HERBAL LIPSTICK

It is very essential to maintain a uniform standard for herbal lipstick, keeping this view in mind the formulated lipstick was evaluated on the parameters such as melting point, breaking point, force of application, surface anomalies etc. which are as follows:- [7, 11,13,14,15,16]

1) Melting point:

Determination of melting point is important as it is an indication of the limit of safe storage. The melting point of formulated lipstick was determined by capillary tube method the capillary was filled, kept in the capillary apparatus and firstly observed the product was slowly melted. After sometimes was observed the product was completely melted. The above was done in 3 times and the melting point ratio was observed in different-different formulation.

2) Breaking point:

Breaking point was done to determine the strength of lipstick. The lipstick was held horizontally in a socket 1/2 inch away from the edge of support. The weight was gradually increased by a specific value (10 gm.) at specific interval of 30 second and weight at which breaks was considered as the breaking point.

3) Thixotropic character:

It is indication of thixotropic quality and was done by using penetrometer. A standard needle of specific diameter was allowed to penetrate for 5 second under a 50-gm. load at 25 °C. The depth of penetration was a measurement of the thixotropic structure of lipstick.

4) Force of application:

It is test for comparative measurement of the force to be applied for application. A piece of coarse brown paper can be on a shadow graph balance and lipstick can be applied at 45° angle to cover a 1 sq. inch area until fully covered. The pressure reading is an indication of force of application.

5) Surface anomalies:

This was studied by the surface defects, such as no formulation crystals on surfaces, no contamination by moulds, fungi etc.

6) Aging stability:

The product was stored in 40°C for period of 1 hour. Various parameters such as bleeding, crystallization of on surface and ease of application were observed.

7) Solubility test:

The formulation herbal lipstick was dissolved in various solvents to observe the solubility.

8) pH parameter:

The pH of formulated herbal lipstick was determined using pH meter.

9) Skin irritation test:

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

10) Perfume stability:

The formulation herbal lipstick was tested after 30 days, to record the fragrance.

RESULTS AND DISCUSSION

In last few decades there has been tremendous boost in use of cosmetics by women. However, the hazards cause by these chemicals has come into lime light very recently. 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. Hence, from present investigation it was concluded that this formulated herbal lipstick has better option to women with minimal side effects though a detailed clinical trial may be done to access the formulation for better efficacy. Results of evaluation test are represented in a following table:

TABLE NO.2- EVALUATION OF FORMULATED HERBAL LIPSTICK

Sr.NO.	Evaluation Parameters	Inferences		
		F1	F2	F3
1.	Color	Pink	Dark Red	Pinkish Red
2.	pH	6.2	6.4	6.5
3.	Skin Irritation Test	No	No	No
4.	Melting Point	59-60°C	60-61°C	61-63°C
5.	Breaking Point	21	22	24
6.	Force of Application	Easy	Good	Good
7.	Perfume Stability	+++	++	+++
8.	Surface Anomalies	No Defect	No Defect	No Defect
9.	Aging Stability	Smooth	Smooth	Smooth
10.	Solubility	Chloroform	Chloroform	Chloroform

CONCLUSION

The formulation F3 was found to be the best and more stable among all the three herbal formulation of lipstick as per the outcomes of evaluations test and showed ideal properties like shining, spreading ,etc. after its application. Formulations containing natural ingredients serve as guidelines to use of natural products in lipstick formulation so as to avoid toxic effects of harmful chemicals otherwise used in synthetic lipstick.



F1

F2

F3

Images: - FORMULATED HERBAL LIPSTICKS

ACKNOWLEDGEMENTS

The authors would like to thank P.S.G.V.P.Mandal's, College of Pharmacy, Principal Dr. S.P. Pawar for providing facility to carryout research work. The authors give their sincere thanks to Professors of Department of Pharmaceutics P.S.G.V.P.Mandal's, College of Pharmacy, Shahada.

REFERENCES

1. C.K. Kokate. Textbook of Forensic pharmacy
2. www.pharmaquest.weebly.com/uploads/9/9/4/2/9942916/formulationcosmetic.pdts.pdf
3. Acharya Deepak, Shrivastava Anshu, Indigenous Herbal Medicine, Tribal Medicine, Tribal Formulation and Traditional Herbal Practices, Avishkar Publisher Distributor, Jaipur, India, 2008: 421.
4. Chattopadhyay, P.K., Herbal Cosmetics and Ayurvedic Medicines, National Institute of Industrial Research, 2005:45-50.
5. www.wikipedia.org/naturalcolouringagents.
6. <http://www.mavenchic.in/blog/different-types-of-lipstick-and-their-uses/>
7. Praveen Kumar Gupta, Sanjiv Kumar Gupta. Pharmaceutics and Cosmetics. Pragati Prakashan, Edition second 2011, 189-196.
8. Benett, W.et.al.Benett's Cosmetic Formulary, Edition-II, Chemical publishing company, New York, 1983:90-100
9. Nadkarni, A.K. Indian Materia Medica, 3rd Ed, vol.II.Popular Prakashan, Mumbai.1975.
10. Sharma P.P. Cosmetic-formulation and Quality Control, 3rd edition. Vandana Publication.2005:35-54
11. Vishwakarma, B. Sumeet, D. Kushgra, D. Dan Herman, J., Formulation and Evaluation of Herbal Lipstick. International Journal of Drugs Discovery and Herbal Research (IJDDHIR), India, 2011.
12. Rgptonline.org.
13. Jain S.K. & Sharma N.K. A Text Book of Pharmaceutics. Vallabh Prakashan. 2005;127-72.
14. Mittal B.M. and Saha R.N. Handbook of Cosmetic 1st Ed. A Vallabh Prakashan. 2003;132-56.
15. 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. Dwivedi, S.,Dwivedi, S.,Patel,P.C.Formulation ,evaluation and antimicrobial activity of herbal lipstick, In Recent Advances in Prospects and Potential of Medicinal Plants.2009: 39-43.