

Formulation and Evaluation of Herbal Lipstick from Beetroot Powder

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ABSTRACT

The aim of present study to create the herbal lipstick from the natural colorants. In order to prepare herbal lipstick from the beet root powder and evaluate the prepared lipstick. Lipstick are formulations commonly used to improve the gorgeousness of lips and add glamorous touch to the makeup. Herbal lipstick is a cosmetic formulation containing pigments, perfumes, waxes, preservatives, anti-oxidants, oils, colors. The advantage of herbal lipstick is safe, cost effective, non-toxic, and pigments used from easily available plants and vegetables. The aim of the present study which includes the formulation and evaluation of herbal lipstick using color pigments from natural sources such as beetroot.

Due to lot of side effects of available synthetic formulation in the market the prepared herbal lipstick evaluated on parameters such as color, pH parameter, skin irritation test, perfume stability, solubility study, surface anomalies, aging stability. The present study concluded that the use of natural colorants in lipstick formulation having less or no side effects. It has potential to increase consumer acceptance because of use of different natural ingredients and harmless colorant used.

KEYWORDS: Beet root, Natural colorant, Herbal lipstick formulation, *Betavulgaris*, color cosmetic, skin testing.

I. INTRODUCTION

Cosmetics is a word comes from the Greek word “**Kosmtikos**” it means the organization, power and skill in beautifying^[1]. Cosmetics are the formulations that are used to improve the appearance of the human beauty^[2,3]. Cosmetic substances include lipstick, skin care creams, lotions, perfumes, powders, hair colors, nail polish, gels, baby products and other so many products are in huge demand in developing and developed countries^[4]. Herbal cosmetic products have increasing demand in the world market and they are precious gift from the nature. There is broad choice of herbal cosmetic products to convince our beauty regime^[5]. Herbal lipsticks are produced from natural color from frequently available vegetables and plants. Commonly used colored pigments are beet root, rose, papaya, tomato, carrot, henna, alkanet root, indigo and it is easy to produce blends for our need. The commonly used ingredients for the preparation of lipstick are oil, emollients, waxes and pigments. Such ingredients mainly used for protection of lips, texture and color^[6]. Herbal lipstick contains many natural nutrients are present which are safer to use and it is free from hazardous chemicals and it is safe

to consume, therefore herbal lipstick prepared from the natural ingredients from beet root powder, rose water, bees wax. Herbal lipstick contains natural ingredients that are non-toxic as compare to the synthetic agents [7].

Beet root is usually known in Canada and the USA as a beet and it is a taproot part of a beet plant. The vegetable is stated to as a beetroot in British English, it is also known as red beet, garden beet, table beet, golden beet or dinner beet. It is one of numerous cultured diversities of *Betavulgarissub*, specious *vulgaris* Conditiva Group [8]. *Beta vulgaris* (Beet root) is a plant from Chenopodiaceae family that is concluded in Amaranthaceae family [9]. Red purple color of beets due to the variety of betanin pigments and is commonly used industrially as a red feed coloring and coloring agent in lipstick [10].

IDEAL CHARATERISTICS OF HERBAL LIPSTICK:

1. Herbal lipsticks are smooth and are easy to apply.
2. It is non-toxic and non-irritant.
3. It has different color, odour, texture and packing and specific plasticity.
4. It is free from contamination.
5. It is free from gritty particles.
6. It does not melt or hard within a variation of climatic temperature.
7. It should be stable in shelf-time and it is free from bloom and sweating during storage condition of lipstick.
8. It should have a good degree of indelibility.
9. It should be non-drying.
10. It should not lose its shiny appearance during storage.
11. It should remain free from the bloom or sweating during storage.
12. It should be a long lasting [11,12].

BENEFITS OF HERBAL LIPSTICK:

1. It is safe to use.
2. It is natural in nature.
3. It is cost-effective and non-expensive.
4. It has no side effects.
5. It is free from hazardous chemicals.
6. It is kinder to the environment.
7. It is not tested on animals [13].

ADVANTAGES OF HERBAL LIPSTICK:

1. Natural ingredients used in herbal lipstick hence it is safe to use.
2. It contains natural nutrient that keep lips healthy.
3. Different shades and combination should be obtained from these natural pigments.

4. Natural colorants have different natural shades of color such as ruby red, beetroot purple, pale red, deep violet, dark purple.
5. It hydrates the lips.
6. Non -irritation to the skin of lips.
7. Stable physically and chemically.
8. Shiny and smooth appearance.
9. Wide range of shades of color to choose from^[14].

II. MATERIALS AND METHODS

Materials:

Bees wax, paraffin wax, castor oil, beet root powder, lemon juice, vanilla essence, rose water. These are the various ingredients which are used for the preparation of herbal lipstick.

Vanilla essence and rose water purchased from the local market of Solapur. Lemon juice was squeezed from the lemons practically. Bees wax, paraffin wax and castor oil were used from laboratory.

Selection of herbs:

The selection of herb used in the formulation of herbal lipstick based on the literature survey.

1. Collection of plant material:

Beetroot was purchased from the local market of Solapur.

2. Extraction method:

Beetroot was purchased from the local market of Solapur. Beetroot was washed and peeled, cut into small-uniform size pieces. These small-uniformed pieces spread over the butter paper and It cover with fine mesh and kept it for shade dry for a day. If there is any moisture content left then it dry in oven. Then take a dried beetroot and make fine powder by using grinder. These fine powder pass through the fine sieve. Check the powder for the grainy particles and again sieve if it is required. Weigh the amount of powder and packed it^[15].

Ingredients of herbal lipstick:

Table. I :

Ingredients	Use
Castor oil	Blending agent
Paraffin wax	Glossy and hardness
Bees wax	Glossy and hardness
Beet root powder	Coloring agent
Rose water	Flavouring agent
Lemon juice	Antioxidant
Vanilla essence	Preservatives

III. METHOD OF PREPARATION OF HERBAL LIPSTICK

The herbal lipstick was prepared by general method of lipstick formulation. Bees wax and paraffin wax were melted in china dish on water bath till becomes hot liquid. Beet root powder mixed with required quantity of castor oil and heated. Then add the first preparation into the second preparation. Now add required quantity of lemon juice and heat properly. After that add required quantity of vanilla essence and rose water. Then final formulation is kept in the mould and cool it by keeping in ice for 30 mins. After 30 min remove and the store prepared lipstick in refrigerator ^[16]

Table.II Formulation Table of herbal Lipstick:

S. No.	Ingredients	Use	F1	F2	F3	F4	F5	F6
1	Castor oil	Blending agent	4ml	4ml	4ml	4ml	4ml	4ml
2	Paraffin wax	Glossy and hardness	1gm	1.5gm	2gm	2.5gm	3gm	3.5gm
3	Bees wax	Glossy and hardness	2gm	2.5gm	3gm	3.5gm	4gm	4.5gm
4	Beetroot powder	Coloring agent	1.5gm	2gm	2.5gm	3gm	3.5gm	4gm
5	Rose water	Flavouring agent	1ml	1ml	1ml	1ml	1ml	1ml
6	Lemon juice	Antioxidant	0.5ml	0.5ml	0.5ml	0.5ml	0.5ml	0.5ml
7	Vanilla essence	Preservative, Q.S.	q. s.	q. s.	q. s.	q. s.	q. s.	q. s.

IV. EVALUATION OF HERBAL LIPSTICK:

The formulated herbal lipstick was evaluated for different evaluation tests such as melting point, skin irritation, perfume stability, surface abnormalities, aging stability, solubility test, pH.

1. Organoleptic properties:

The formulated lipstick was evaluated for organoleptic properties such as color, odor, and texture^[17].

2. Solubility test

The prepared herbal lipstick was dissolved in many solvents like acetone, hexane, petroleum ether, water, alcohol etc. and determine the solubility^[18].

3. Melting point:

Melting point is determined to indicate the limit of safe storage. The melting point of prepared herbal lipstick was determined by capillary tube method. The melting point of lipstick was done by taking melted sample in a capillary tube and then capillary tube is subjected to the ice for 2 hrs for cooling then capillary tube is tied to a thermometer. Then capillary tube was dipped into the beaker containing water which was subjected to continuous stirring. A temperature at which the sample start to increase along with capillary tube it is considered as melting point^[19,20].

4. Skin Irritation test:

The prepared herbal lipstick formulations were studied for the skin irritation test. The skin irritation test done by applying the formulated herbal lipstick on the skin for 15 minutes and observe results.

5. Determination of pH:

The pH of the prepared of herbal lipstick was determined by using pH meter. 1 gram of lipstick was dissolved in 100 ml of distilled water and measure the pH .

6. Perfume stability:

Perfume stability test done by storing the prepared lipstick at 40°C and periodically comparing ,after bringing the temperature down ;with the fresh lipstick.

7. Surface abnormalities:

Surface abnormalities studied by the surface defects such as formation of crystals on surface, contamination by moulds, fungi etc . Formation of wrinkles, exudation of liquid substances and of solid fatty substances.

8. Aging stability:

Aging stability test was done by product was stored in 40°C. And periodically observe of oil bleed , crystallization of wax on the surface^[21].

V. RESULT

The formulated herbal lipstick was evaluated and it was found that, F4 was the best among the six batches. From the present study it was concluded that the formulated herbal lipstick has better option to the women because of the minimal side effects.

The aim of the present study formulation and evaluation of lipstick containing herbal ingredients which has minimum side effects and cost effect over the synthetic formulation.

Table no.III

Evaluation Parameters	F1	F2	F3	F4	F5	F6
Color	Light pink	Light pink	Pink	Dark pink	Dark pink	Wine
Texture	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth
Melting point	55	54	58	60	62	65
Ph	6.20	6.32	6.50	6.66	6.80	6.82
Skin irritation	No	No	No	No	No	No
Perfume stability	Good	Good	Good	Good	Good	Good
Surface anamolies	No defect	No defect	No defect	No defect	No defect	No defect

VI. DISCUSSION

Cosmetics with the natural ingredients are safer than the synthetic means the chemical-based cosmetics. Cosmetics prepared with the natural ingredients have ability to protect the skin. The present work formulation and evaluation of herbal lipsticks were carried out to formulate a herbal lipstick using natural ingredients which has minimum side effects compared synthetic ones. The present formulation of herbal lipsticks formulated by using different natural ingredients , such as Bees wax, castor oil, paraffin wax, beet

root powder, rose water, vanilla essence, lemon juice. Beet root used as a natural coloring agent it better option as compared to the synthetic color which have hazardous side effects.

The formulation table of herbal lipstick containing (F1-F6) were prepared and evaluated tests were performed. From the six formulation all formulations showed promising results.

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VIII. REFERENCES

- [1]. Yogesh S Mali, Ganesh Newad, Azam Z Shaikh. Review on Herbal Lipstick. Research Journal of Pharmacognosy and Phytochemistry. 2022; 14(2):113-8. doi: 10.52711/0975-4385.2022.00021
- [2]. Talpekar P, Borikar M. Formulation, development and comparative study of facial scrub using synethetic and natural exfoliant. Research J. Topical and Cosmetic Sci. 2016, 7(1), 01-08.
- [3]. Gavarkar P, Adnaik R, Chavan D, Bagkar A, Bandgar R. Physicochemical Investigation of Some Marketed Herbal Hair Oil. Research J. Topical and Cosmetic Sci. 2016, 7(2), 70-72.
- [4]. Rautela Sunil, Tailor Chandra Shekhar, Badola Ashutosh. Formulation and Evaluation of a Herbal Lipstick : A New Approach. International Journal of Pharmaceutical Erudition. May 2013, 3(1), 26-30.
- [5]. G. Sudha Rani , G. Pooja , V. Harshvardhan , B. Vamshi Madhav , B. Pallavi Formulation and Evaluation of Herbal Lipstick from Beetroot (*Beta vulgaris*)Extract. Research Journal of Pharmacognosy and Phytochemistry. 2019; 11(3):197-201. doi:10.5958/0975-4385.2019.00034.7
- [6]. Devika R. Kotekar¹, Rakshata Desai , Nagesh C., Suma N. , Pratiksha Patil and Aishwarya Patil. Formulation And Evaluation Of Herbal Lipstick Using Natural Colorants. World Journal of Pharmaceutical Research: Volume 11, Issue 4, 1335-1344.
- [7]. D. A. Bhagwat, N. D. Patil, G. S. Patel, S. G. Killedar, H. N. More. Formulation and Evaluation of Herbal Lipstick using Lycopene Extracted from *Solanum lycopersicum* L. Research J. Pharm. and Tech. 2017; 10(4): 1060-1064. doi: 10.5958/0974-360X.2017.00192.5
- [8]. Sainath M, Kumar KS, Babu KA. Formulation and evaluation of herbal lipstick. International Journal of Advanced Research In Medical & Pharmaceutical Sciences (IJARMPS), 2016; 1(1).
- [9]. Jamdade K, Kostha A, Jain N, Dwivedi S, Malviya S, Kharia A. Formulation and Evaluation of Herbal Lipstick Using *Beta Vulgaris* and *Punica Granatum* Extract. International Journal of Pharmacy & Life Sciences, 2020; 1: 11(4).
- [10]. Akilandeswari K, Shanthini N, Formulation and Evaluation of Herbal lipsticks, 2018; 1(1): 1-10.

- [11]. Pandit Deepika, Gujrati Aditi, Rathore K S, "Formulation and Evaluation of Herbal Lipstick from the Extract of Papaya", International Journal of Pharmaceutical Science, July-August 2020; 63(1): 107-110.
- [12]. AboliBornare, TejasviTribhuwan, ShrutikaMagare, Aishwarya Shinde, Swati Tarkase, "Formulation and Evaluation of Herbal Lipstick", International Journal of Creative Research Thoughts, September 2020; 8: 2390- 2397.
- [13]. Shayesta Khan, uzma s, Abdul Sameeh, Juveria M, S M Shahidulla .Formulation and Evaluation of Beta Vulgaris Herbal Lipstick . International Journal of Innovative Research in Technology. May 2022Volume 8: Issue12.
- [14]. Swetha Kruthika V, S Sai Ram, Shaik Azhar Ahmed, Shaik Sadiq, Sraddha Deb Mallick, and T Ramya Sree, "Formulation and Evaluation of Natural Lipsticks from coloured pigments of Beta Vulgaris Taproot", Journal of Pharmacy and Pharmaceutical Sciences, July-September 2014; 3: 65-68.
- [15]. Anilkumar V., Kalyani R., Sangeeta Kumari L. Design, Development And Evaluation of Herbal Lipstick from Natural Colour Pigment. International journal of pharmacy and pharmaceutical Research. May 2020; volume-18: issue 2.
- [16]. Sanket Jain, Shraddha Jain, Sujit Pillai, Rampal Singh Mandloi, Nidhi Namdev. Formulation and Evaluation of Herbal Lipstick by using Beet root extract. Research Journal of Pharmacognosy and Phytochemistry. 2022; 14(1):23-5. doi: 10.52711/0975-4385.2022.00005.
- [17]. Neeraj Bainsal, Simranjeetkaur,SudhanshuMallan. Pharmacognostical Physiochemical and Phytochemical studies of different varieties of Beet root grown in Punjab. Research J. Pharm. And Tech. 2021;10(3):1689-1692.doi:10.5958/0974-360X.2017.00192.5
- [18]. Nuha Rasheed, Syed Abdul Rahman, Samreen Hafsa. Formulation and Evaluation of Herbal Lipsticks. Research J. Pharm. and Tech. 2020; 13(4): 1693-1700.17.
- [19]. Kawarkhe PR, Deshmane SV, Biyani K. Formulation and Evaluation of Antioxidant Face Cream Containing Raspberry Fruit and Grape Seeds Extract. Research J. Topical and Cosmetic Sci. 2016, 7(2), 73-78.
- [20]. Elumalai A, Chinna M, Nikhitha M. Formulation and Evaluation of a Herbal Lipstick from Punica granatum Fruit Peel. Res. J. Topical and Cosmetic Sci. 3(1), 2012, 20-22.
- [21]. Nutan Gawande, Sanika Kate, Karishma Waghmare. Formulation and Evaluation of some Cosmetic preparations using novel natural colorant from Ixora coccinea. Asian J. Res. Pharm. Sci. 2021; 11(1):22-28. doi: 10.5958/2231-5659.2021.00004.7