



Design, Development, And Assessment of Herbal Lipstick from Beetroot

Sakshi Dilip Chavhan¹, Ambika D. Nagarbhadiya², Payal S. Rathod³

Research Scholar¹, Assistant Professor², Research Scholar³

ISHWAR DESHMUKH INSTITUTE OF PHARMACY, DIGRAS, YAVATMAL, MAHARASHTRA, INDIA¹

a

Abstract: Since the beginning of time, cosmetics have been highly sought after. Lipstick formulas are designed to improve the appearance of lips. A lipstick is a cosmetic product that adds color, texture, and shielding to the lips. Emollients, oils, waxes, and pigments are also present. There are a number of lipstick varieties that are exclusive to female use. Organic lipstick contains the natural and secure ingredient. They also have natural nutrients in them that help maintain healthy lips. Long-term usage of synthetic lipstick colors can cause serious skin problems, such as rashes and cancer. It can be less harmful to use natural color extracts from different natural sources. This review primarily focuses on the formulation, extraction, and evaluation of natural colorants used in lipsticks.

Keywords: Lipstick, Beetroot, Herbal Lipstick,

INTRODUCTION:

With the beginning of the civilization, Herbal cosmetic also known as “natural cosmetics”, peoples (men and women) had a magnetic dip towards impressing others with their looks was and there area number of wide range of herbal cosmetics products to satisfy your beauty regime, is very safe for the skin. Human beings have been using herbs for different purpose like food, medicine, beautifying with the advancement of science & technology was studied².

The phenomenon of herbals, nowadays becoming a full-fledged, encircling both health and beauty care. The lips perhaps constitute the most sensitive part of our body and it is also very close to the nose and mouth. The natural aroma and colour compounds used in the lipstick, by transdermal absorption of the skin, lips and also inhaling the vapors of selected combinations of aroma principles could release neurochemicals in the brain through the receptors in the mouth (lips) and nose takes the desired effects. In the cosmaceutical application, the lipstick functional is safe, eco-friendly, health protective and herbal colours, aroma useful as natural colors are now being well researched and also considered as powerful agents for promoting the physical health was studied³ and in similar study

Cosmetics include skin care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial make up, colored contact lenses, hair colours, hair sprays, gels, deodorants, baby products, bubble bath, basalts and many more products great demand in both developing and developed countries⁴, the demand of herbal In another study, Natural pigment or color in biological system is one, that synthesized and accumulated in, or extracted from living cells and natural dyes may be defined as chemicals which are obtained from vegetable and animal sources without chemical processing. The applied colour should be fast to sunlight, water washing and to action of mild acid and alkali. The different natural colorants are obtained from following categories is shown in the table 1

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, extracts of the petals of *Rosa rubiginosa*, flowers of *Bougainvillea spectabilis* extract, juice of the *Beta vulgaris* (Beetroot) and extract of the flower of *Crocus sativus*.

The development process involves careful selection of natural ingredients known for their skin-friendly and nourishing properties, as well as their ability to impart colour and texture. Additionally, considerations such as stability, shelf-life, and sensory attributes will be addressed to ensure the quality and efficacy of the final products

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.

Herbal lipstick are used to impart an attractive color, texture and protects to lips. Lipstick is A cosmetic product containing waxes, oils, pigments and dyes, alcohol and fragrance, Preservatives and antioxidants, colors, and surfactants. These lipstick preparations do not Damage to our lips and no side effect. They involve a colors change as well as shine and Smooth out of wrinkles and folds on lips. It is a most famous cosmetics items and available in

Different styles, design and packaging of lipstick. Lipstick having many advantages it should Be protects lips from dryness and cracking. It brightens your smile and provides hydration to Our lips. It should be free from grittiness and should be non-drying required plasticity.

Different Types of Lipstick and Their Uses:

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 reapplied many times.

3. **Mate and Lipstick:-**

Mate 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 smoother and younger with matte lipstick. Plus it is advised to mix products with vitamin E and aloe with mate 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.

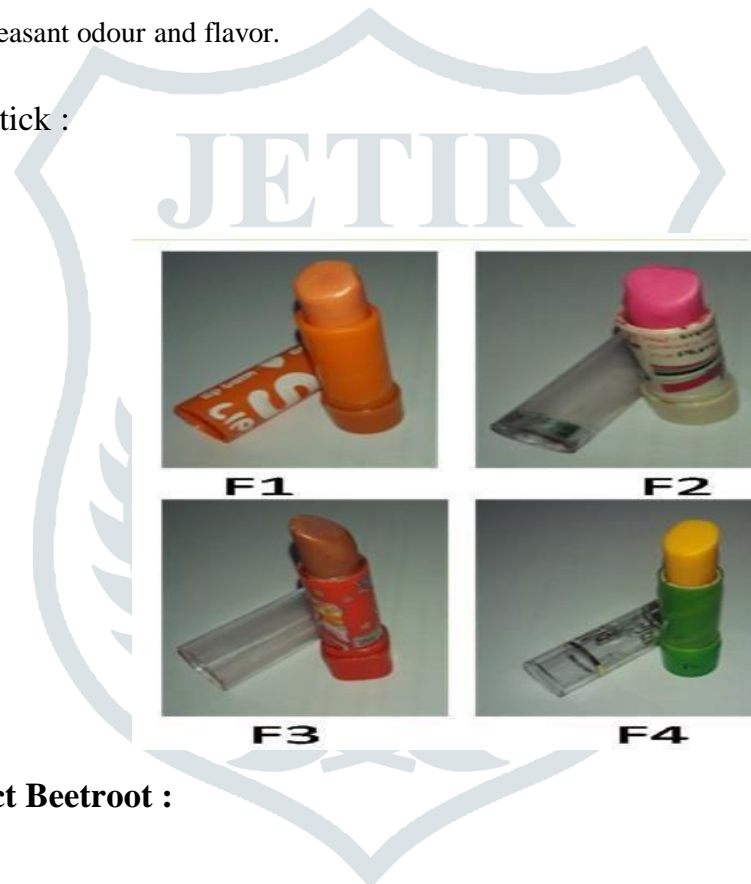
CHARACTERISTICS :

- 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 regionable 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.

Formulation of herbal lipstick :



By Using Natural Extract Beetroot :

- **BEETROOT -**

Beetroot (*Beta vulgaris*) is a versatile vegetable known for its rich color and potential health benefits. In the realm of cosmetics, beetroot extract has gained attention for its natural pigments, making it an excellent candidate for formulating herbal lipstick. This study focuses on the design, development, and assessment of herbal lipstick utilizing beetroot extract as a primary ingredient.

- **BETA VULGARIS :**

Synonym: Beta vulgaris rubra, Chukandar

Biological source: It consists of fresh root of Beta vulgaris. Family: Amaranthaceae

Chemical constituents: It consist of multiple biologically active phytochemicals including Betalains, flavonoids, polyphenols, saponins and inorganic nitrate, it is a rich source ofDiverse minerals such as potassium, sodium, phosphorous, calcium, magnesium, copper, iron, Zinc.

Uses: - It is used as colouring agent. It is used as a binder. It gives glossy appearance to lips. It also provides emollient action on lips. It also prevents cracking of lip



BEETROOT

- **Ideal Charateristics of Herbal Lipstick :-**

1. Herbal lipstint 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.

- **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.

- **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. It hydrates the lips.
4. Non -irritation to the skin of lips.

COMPOSITION :

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.

Selection of herbs:- The various herbs used in present formulation of herbal lipsticks were selected on the basis of literature survey.

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.

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.

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:-

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..

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, 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

FORMULATED HERBAL LIPSTICKS



Acknowledgement:

We would like to express our sincere gratitude and appreciation to the **Ishwar Deshmukh Institute of Pharmacy, Digras**, its Principal, **Dr. Ranajit D. Tijare Sir**, Our Guide Assistant Professor **Miss Ambika D. Nagarbhadiya**, and all the other teaching and non-teaching staff members for their invaluable support and assistance during our research work.

Their guidance, encouragement, and cooperation have been instrumental in helping us achieve our research goals. Their expertise and knowledge have been invaluable in providing us with the necessary resources, facilities, and guidance to carry out our research work efficiently.

we are deeply grateful to the college and its staff members for their continuous support and motivation, which has helped us immensely in our academic pursuits. we would also like to extend our heartfelt thanks to fellow students who have always been there to offer their support and encouragement.

Once again, we express our heartfelt thanks to everyone at the Ishwar Deshmukh Institute of Pharmacy, Digras, for their invaluable contribution to my research work.

REFERENCES :

1. Chander Mohan., NRDC to commercialise herbal beer & lipstick. *Ancient science of life* 2002, XXII (1), p. 55-56.
2. Acharya Deepak and Shrivastava Anshu., *Indigenous Herbal Medicine, Tribal Formulation and Traditional Herbal Practices*, Avishkar Publisher Distributor, Jaipur, India, 2008, p. 421.
3. Bouldin AS, Smith MC, Garner DD, Szeinbach S L, Frate DA, Croom EM. Pharmacy and herbal medicine in the US. *Soc Sci Med.* 49, 2, 1999, 279-289.
4. Chaudhuri DK Gazette of India, Sc'F' & H, PCD1 June 2006.
5. Chattopadhyay PK. *Herbal Cosmetics and Ayurvedic Medicines*, I ed. National Institute of Industrial Research, 2005, p.45-50.
6. Gulrajani ML. In; *Natural Dyes and their application to textiles* Department of textile Technology, IIT, Delhi, 1992, p. 1-18.
7. Kapoor VP. *Natural food colours: present scenario and future prospects* Proc Natl Sem Role Rural Ind Develop, December 7-8, Lucknow, 2000, p. 12-14.
8. Kapoor VP, 2002a, *Role of Natural colours in food industry*. Proc Sem Develop food process, Ind Uttar Pradesh. January 16-17, Lucknow Chapter no-16
9. Kapoor VP. 2002b, In *Advances in legume research in India*, Bishen Singh Mahendra Pal Singh, Dehradun, 2002, p-211- 222.
10. Mandal G Chatterjee C Chatterjee M., Evaluation of antiinflammatory activity of methanolic extract of leaves of *Bougainvillea spectabilis* in experimental animal models. *Pharmacognosy Res.*, 7, 2015, 18–22.

11. Adebay JO, Adesokan AA, OlatunjiLA, Buoro DO, Aoladoye AO. Effect of ethanolic extract of *Bougainvillea spectabilis* leaves on haematological...
12. Mandal G Chatterjee C Chatterjee M., Evaluation of antiinflammatory activity of methanolic extract of leaves of *Bougainvillea spectabilis* in experimental animal models. *Pharmacognosy Res.*, 7, 2015, 18–22.
13. Adebay JO, Adesokan AA, OlatunjiLA, Buoro DO, Aoladoye AO. Effect of ethanolic extract of *Bougainvillea spectabilis* leaves on haematological and serum lipid variables in rats. *Biochem.*, 17, 2005, 45–50.
14. Bhat M, KothiwaleSK, Tirmale AR, Bhargava SY, Joshi BY., Antidiabetic properties of *Azardirectaindica* and *Bougainvillea spectabilis*: In vivo studies in murine diabetes model. Evidence-Based *Complementary and Alternative Medicine* 2011, Article ID 561625. P.1- 9.
15. Jawla S, Kumar Y, Khan MSY., Hypoglycemia activity of *Bougainvillea spectabilis* stems bark in normal and alloxaninduced diabetic rats. *Asian Pac J Trop Biomed.*, 2, 2012, 919–923.
16. Mishra N, JoshiS, Tandon VL., A. Munjal. Evaluation of antifertility potential of aqueous extract of *Bougainvillea spectabilis* leaves in swiss albino mice. *Int J Pharm Sci Drug Res.*, 1, 2009, 19–23.
17. Hembrom AR, Pragya S, Singh VN., Selective and directional influence of *Bougainvillea spectabilis* on anodic electrophoretic proteins and m-isozymes of LDH in semen of mice in relation to fertility control., *Int Res J Pharm .*, 5, 2014, 576–577.
18. Chaires-Martinez L, Monroy-Reyes EA, Bautista Bringas HA Jimenez-Avalos G Sepulveda-Jimenez., Determination of radical scavenging activity of hydroalcoholic and aqueous extracts from *Bauhinia divaricata* and *Bougainvillea spectabilis* using the DPPH assay. *Pharmacognosy Res.*, 1, 2009, 238–244.
19. Venkatachalam RN, Singh K, Marar T., *Bougainvillea spectabilis*, a good source of antioxidant phytochemicals, *Res J Pharm Biol Chem Sci.*, 3, 2012, 605–613.
20. MalairajanP,Gopalakrishnan G, Narasimhan S,Jessi KVK., Antiulcer activity of crude alcoholic extracts of *Bougainvillea spectabilis*Willd. Jundishapar, *J Nat Pharm Prod.*, 2, 2007, 1– 6.