

**TO STUDY THE FORMULATION AND EVALUATION OF
NATURAL LIPSTICK FROM BIXA ORELLANA**

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ABSTRACT: Cosmetic are the substance used to alter the appearance and fragrances of the human body. Nowadays the demands for herbal cosmetics in the world market. In contrast to synthetic ones, herbal cosmetics are safe for human health. Herbal formulations like herbal lipsticks, herbal creams, herbal shampoos and herbal paste have always attracted considerable attention because of their good activity and comparatively lesser side effects with synthetic materials. Herbal cosmetics are defined as the beauty products which possess desirable physiological activity such as enhancing, soothing appearance, healing, conditioning properties because of herbal ingredients.

Lipstick is the cosmetic used to color the lips. It enhances the appearance of the lips. Lipstick is used for the purpose to improve appearance, look attractive and protection of lips for many types damaging UV rays etc. Herbal Lipstick is a cosmetic product containing pigments, oils, fragrance, preservatives, colors, texture and protection to the lips. Herbal lipsticks are gaining popularity because natural cosmetics are safe. It contains natural ingredients or nutrients it is safe to use that keep lips healthy. Lipstick containing synthetic colorants which are made up of harmful chemicals and it is very harmful for our skin. So, the demand of the cosmetics containing herbal ingredients increased universally because it is safe. The present work focused on lipstick background, types, formulation method, color pigment extractions, natural oils, bases, flavors, physical evaluation, and various evaluation taste ^[2]

KEYWORDS: Natural, Herbal, Color, Ingredients, Lipstick Formulation, Herbal lipstick, Evaluations.

2. INTRODUCTION:

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. Cosmetics are the substance use to alter of appearance or fragrance of human body. Lipstick is most widely used cosmetic added in the make up to enhance the beauty of lips ⁽¹⁾

In a cosmetic product to enhance women's natural lipsticks are used to impart an attractive color, texture and protects to lips. Lipstick is a cosmetic product containing waxes, pigments and dyes, alcohol and fragrances, preservatives and antioxidants, colors, surfactants. These lipstick preparations do not damage to lips and no side effect. They involve a color change as well as shine and smooth out of wrinkles and lips. It is a most famous cosmetics item and available in different styles, design and packaging of Lipstick having many advantages it should be protects lips from dryness and cracking. It brightens mile and provides hydration to our lips. It should be free from grittiness should be non-drying required tiny. In natural lipstick many natural nutrients available safe for lips. It is free from chemicals like ben, sulphate, phthalate and others its unsafe to consume that's why we are doing natural lipstick like wax, Bixa Orellana, almond oil, rose essence.

The practice of applying color to cheeks and lips is very old. Today lipstick is on the most widely

used cosmetics by Women, Lipsticks are basically consisting of suitable of oils, fats and waxes Suitably fumed and a flavored, molded in the form of stick and enclosed in a case.



Fig no.1-Lipstick

1.1 APPLICATIONS OF LIPSTICKS:

- To impart an attractive color.
- To give glossy and moist appearance to lips
- Accentuating good points of lips.
- Dosing the defects.
- To prevent cracking and chapping of lips.

1.2 IDEAL CHARACTERISTICS OF LIPSTICK:

1. It should give glossy and smooth appearance free from sweating.
2. It should be non-irritant and non- toxic to the lips.
3. It should not dry on storage.
4. The container should operate easily.
5. It should impart uniform color to the area of application.
6. It should be free from gritty particles.
7. It should not melt or harden within reasonable variation of climatic temperature.^[2]

3. ADVANTAGES OF HERBAL LIPSTICK OVER SYNTHETIC LIPSTICKS:

- The ingredient in the natural lipstick is all natural and is safe to use
- They also contain natural nutrient that keep lips healthy.
- They have fewer or no aspect impacts.
- They are non-toxic, highly lipophilic, anti-oxidants, anti-microbial, anti-inflammatory. and are used in leukoderma of lips.
- Extensive range of color to choose from.
- Colorants has different originals shades of color from purplish red, ruby red, beetroot purple, dark violet, pastel red, pale red, purplish red, rose red, deep magenta, dark purple, orange, deep violet.
- Different combination and shades can be obtained from these colors.
- By adding organic and inorganic acids and bases color may be changed to different shades ^[20,2]



Fig no.2-Properties of lipstick

1.4 HISTORY OF LIPSTICK:

Orange color that symbolizes of positive, cheerful, energy. Many women in 20’s applied lipstick to their lip as a symbol of their new founds positive, cheerful, energy. It has been estimated that 92 million American women do not leave home without their lipstick.

It recognized that the Egyptians of long ago wore lipstick Since Cleopatra in 60 BC, women have applied the cosmetic to their lips. From existing depictions of the Ancient Greece, we can see that they wore wigs kohl, and henna made of plant dye from focus align and bromine (which was poisonous) on their lips. Queen Elizabeth, a trend setter and ruler, wore red on her lips. Not everyone loved the lipstick in 1770; the British Parliament passed a law that said a woman wearing lipstick could be tried for witch craft Queen Victoria of Britain said it was considered "impolite" to wear any make-up. [21,22,27,28]

Men began using colors for adornment in approximately 3000 BC in order to attract the animals they wanted to hunt. Generally, the concept and construct of "cosmeceuticals" was first articulated by Raymond Reed (1961), the founder of the US Society of Cosmetic Chemists. Its talent" Later, in 1984, Albert Kingman used the word "cosmeceuticals" referring to the compounds that have both cosmetic and medicinal properties²³. Many herbs and floras have been used in the manufacture of cosmetics for the purposes of beauty and protection from external influences. The natural chemicals in cosmetics do not harm the human body; instead, they provide it with nutrients and minerals [23]. Lipsticks, in particular, have been used by humans for over 500 years [24]. Lipstick was first discovered as a rough fragment of brick in ancient Mesopotamia [24]. Coloring lips is an ancient tradition that dates to the prehistoric period. Lipstick was first introduced in France in 1869 as a cosmetic product made from animal fat and beeswax. The availability of lipstick in the form of cylindrical metal tubes was introduced in 1915^[25]. Presently lipsticks have become an essential product for many consumers. There is an extensive choice of color shades and textures. This can be observed from the fact that lipstick is being marketed in hundreds of shades of colors to satisfy the increasing demand^[26]

1.5 LIPSTICK BACKGROUND:

Cosmetics can be traced back to ancient civilizations. In particular, the use of lip color was prevalent among to Sumerians, Egyptians, Syrians, Babylonians, Persians, and Greeks. Later, Elizabeth I and the

ladies of court colored their lips with red mercuric sulfide.^[5] For years, rouge was used to color both the lips and the cheeks depending on the fashion of the times. In Western society during the latter half of the nineteenth century, was generally believed only promiscuous women wore lipstick or makeup at all. It was not until the twentieth century that lipstick and cosmetics in general, gained true societal acceptance.

Improvement in the manufacture of applicator and metal tube reduced the cost of cosmetic. This combined with new found acceptance by the general population caused widespread use and popularity to increase.^[28]

1.6 THE FUTURE OF LIPSTICK:

For many years, the Indian beauty industry has been one of the fastest-growing markets in the world. With over a billion people and rising disposable income, India is considered one of the most promising markets for global companies looking to expand their reach.

Lipstick can change color after application due to heat and acidity in the skin. Future lipsticks may exploit this by making lipsticks that change color more dramatically depending on the skin type of the wearer. This is available already as a joke product.

Lipsticks of the future will be more dramatic in color and sparkle. Exciting future lipstick products may include metallic lipsticks, mirror lipstick, lipsticks that change patterns according to body heat and moisture, production lies in the ability of manufacturers to supply product that is sophisticated and non-toxic to lipsticks that attach themselves to your lips not glasses and drinking straws. Lipstick is the least expensive and most popular cosmetic in the world today. In 1986 lipstick sales in the United States were more than \$720,000,000. There are no accurate figures for current sales of lip balm, since the market is expanding and shades of lipstick, and there is a tremendous variety of product available at moderate cost.^[29]

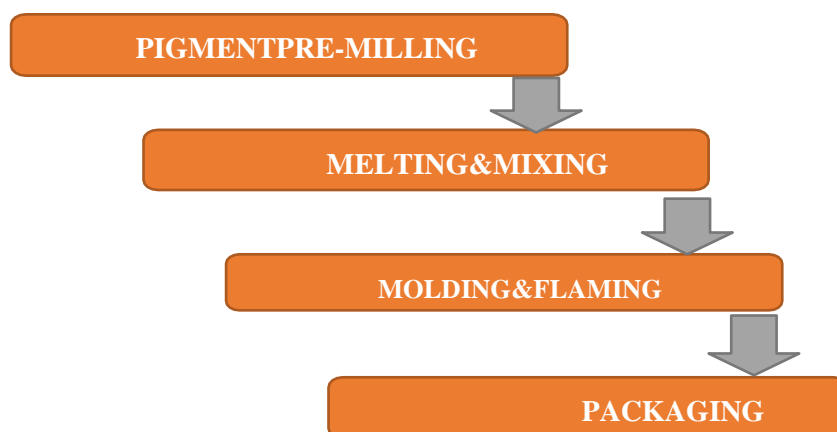
1.7 FORMULATION:

The Lipstick mainly contains a color material dispersed and suspended in a suitable base made by blending oils and waxes in various proportions to yield desired melting point and viscosity. The temperature body varies between 36°C to 38°C with lips having the higher side. The base of lipstick must have a melting point appreciably higher than this, between 55°C to 75°C preferably about 62°C for the product to withstand posture to hot climates.

1.8 CLASSIFICATION OF LIPSTICKS:

The types of lipsticks can be classified as moisturizing satin and sheer, matte, cream, pearl and frosted, gloss, long wearing and transfer resistant lipsticks. Typical lipsticks are composed of Emollients (also can help disperse pigments): 41-79 percentage^[20]

1.9 BASIC MANUFACTURING PROCESS OF LIPSTICKS:



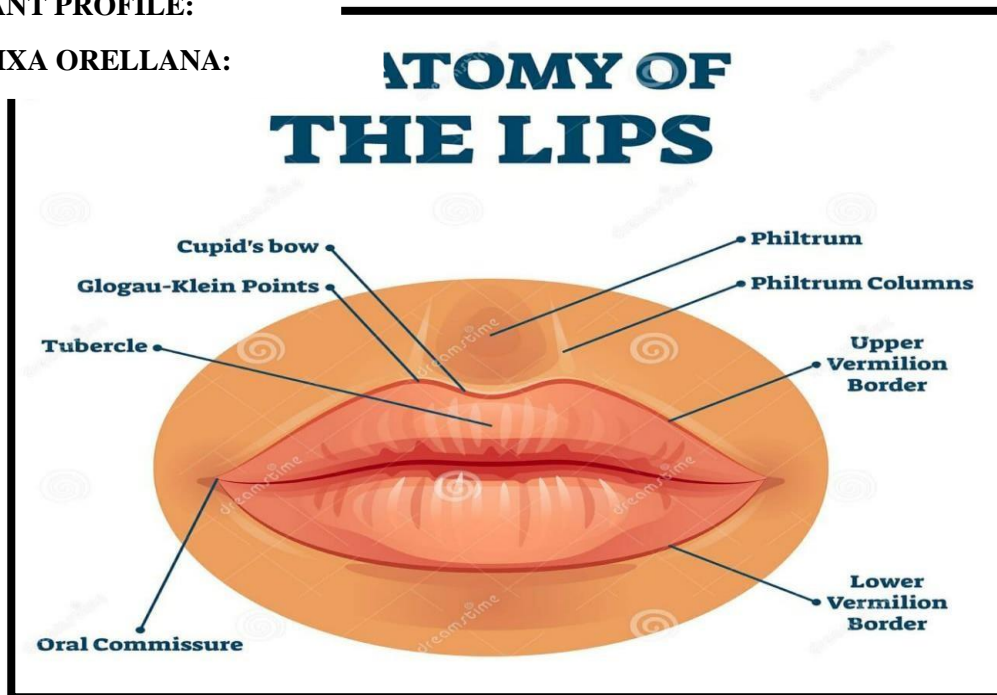
1.10 ANATOMY OF LIPS AND LIPSTICK:

During arousal in mammals the sex organs fill with blood and are flushed red. Naturally healthy lips and cheeks are rosy red in healthy sexual beings. This flush of red is simulated in the use of rouge and lipstick reddening of the face symbolizes youth, sexuality and fertility. Lipstick heightens the lips, makes them pre ball tore moist. Making them more red and more alluring

Fig no.3-Anatomy of lip

2. PLANT PROFILE:

2.1. BIXA ORELLANA:



- Common Name- Annatto, lipstick tree, Achiote.
- Biological Name-Annatto
- Scientific Name- Bixa Orellana Linn.
- Biological Source- Fresh Seed of. Bixa Orellana
- Family- Bixaceae
- Kingdom- plant
- Genus –Bixa
- Species- Orellana

2.2 PHYSICAL CHARACTERISTICS:

- 1) Color –Yellow, Reddish-Orange
- 2) Odor- Aroma
- 3) Solubility- a) In water soluble
b) In alcohol: soluble (Ethanol)
- 4) PH-5.73

2.3 CHEMICAL CONSTITUENTS:

A) Phytochemicals

- Carotenoid –
 - Bixin
 - Norbixin
 - Esters
- Terpenoid
- Tocotrienols
- Arenes
- Flavonoid Apigenin Luteolin



Fig no.4: Bixa Orella

3. PLANT DESCRIPTION:

Among the naturally occurring colorants an important one is annatto. It is a carotenoid-based dye, extracted from the outer coatings of the seeds of Bixa Orellana. Bixa Orellana Linn. Family (Bixaceae) is an ever-green shrub native to Argentina, Brazil, Chile, Colombia and exotic to India, USA and Thailand. Bixa Orellana Linn appears like a small bush like tree. It grows to about 5 or 6 meters high and has a peculiar reddish sap. The leaves are alternate, oval to heart shaped and 10- 30 cm long. The flowers are large, pinkish in color and produced in terminal clusters. The fruits are initially green but turn reddish-brown. They are fully covered by soft spines and when they dry open into two compartments exposing the seed.^[14]

3.1 INGREDIENT USED IN LIPSTICK PREPARATION:

3.1.1 BEES WAX:

- Waxes from an important group of ingredient for the manufacturer of personal care product and decorative cosmetics.
- Bees wax can help to the lips.
- Bees wax help retain moisturizing skin.
- Bees wax is widely used in cosmetic product.
- Bees wax is used in lip-balm, lip-gloss and hand creams ^[13]

3.1.2 SHEA BUTTER:

- Shea butter is an incredible emollient.
- It has the ability to form a barrier on the lip and help retain moisture in lips.

- It helps to soften the lip, reduce lip lines and pigmentation.
- It contains vitamin A and E which soothe and moisturize chapped lip.
- Protects lip from UV rays.
- It is used in many cosmetics and personal care product like lipstick, Body lotions, creams and conditioners.

3.1.3 COCONUT OIL:

- Its relief from cracked and chapped lips and provide nourishment.
- It is used superior hydration.
- It gives natural SPF Add protection.
- It is an antibacterial power house.

3.1.4 ACACIA:

- It increasing the viscosity of lipstick.
- It is an emulsifying and a suspending agent, preventing the color from lightening.
- Maintains the thickness of lipstick, used as demulcent.^[13]

3.1.5 BIXA ORELLANA SEED EXTRACT:

- Lends your lips a gorgeous orange color tint and at same time, clears up lip pigmentation
- It is used as coloring agent.
- It is used for glowing lip and ensure that lips remain soft hydrated and moisturized.

3.1.6 LEMON JUICE:

- Best for dry lip and it's universal shade.
- Used to healthy lip and prevent the cell damage.
- The incorporation of lemon juice in lipstick It's reduce the inflammation and essential for enhancing the formulation quality
- It has to fight the urge to smear and it used to prevent colds ^[13]

3.1.7 VITAMIN E:

- Vitamin E can be incorporated into nearly anything, even lipsticks and mascaras.
- Because it is a universally beneficial ingredient, it is hard to find products that do not contain this good-for-you product.
- Vitamin e is the ingredient of herbal lipstick.
- Used to preventing and treating fine lines and wrinkles and Its making lips softer.^[13]

3.1.8 VANILLA ESSENCE:

- The role of Vanilla essence is flavoring agent.
- It is important role in the taste masking used in ingredient of herbal lipstick.
- It softens the lips, nourishes and protects them against environmental impact.
- It gives the different color and flavor of herbal lipstick.

3.1.9 PERFUME:

- It is used to create a more natural aroma.
- It is used to give the pleasant scent and used as fragrance.

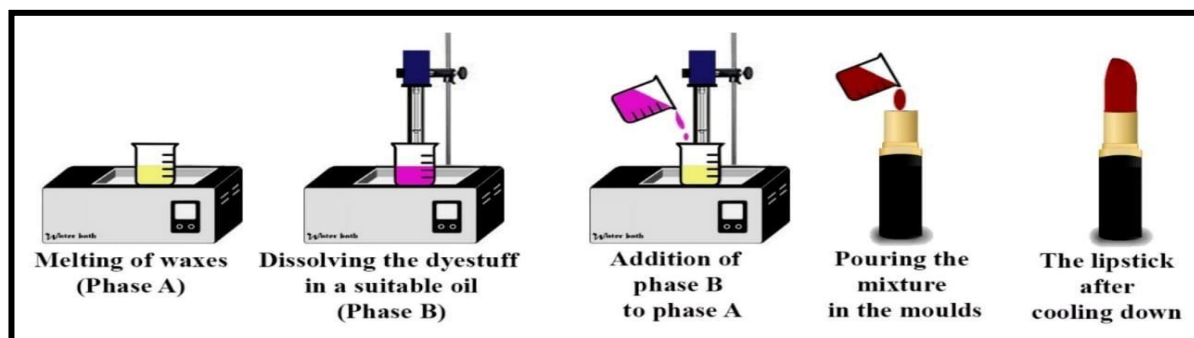
4. FORMULATION:

Sr. no	Ingredients	Use	F1	F2	F3

1	Bees Wax	Glossy & hardness	3gm	2.5gm	4.5gm
2	Shea Butter	Emollient	3gm	1.5gm	1.5gm
3	Coconut Oil	Blending Agent	10ml	6ml	5ml
4	Bixa Orellana	Coloring Agent	4ml	3ml	8ml
5	Acacia	Surfactant	3gm	2gm	1gm
6	Lemon Juice	Antioxidant	Q.S	Q.S	Q.S
7	Vitamin E	Humectant	0.5ml	1ml	1.5ml
8	Vanilla Essence	Preservatives	0.5ml	1ml	1.5ml
9	Perfume	Flavoring Agents	Q.S	Q.S	Q.S

5. METHOD OF PREPARATION:

Fig no.5 Method of preparation



EXTRACTION OF BIXA ORELLANA SEED:

- The shade dried coarsely powdered seed of bixa Orellana 100 gm extracted with ethanol for 18 hr. then filter with Whatman filter paper for removing impurities.
- Then reduce the volume by vacuum distillation to 1/10. then transfer into 100ml. then remaining solvent evaporated on water bath.
- Dark red colored is obtained. then using desiccation to remove moisture. Then packed in air tight container for study
- weigh all ingredients in porcelain dish. Place the porcelain dish in water bath with all ingredients are melted.
- Then beeswax is mixed with Coconut oil constantly.
- Then added the acacia to the mixture.
- pigment and lemon juice are also added Bixa Orellana Extract as a coloring agent, antioxidants and preservatives.

- Shea Butter is added as are moisturizing to lip.
- Then vitamin E as are the new cell developed and smoother.
- Flavoring agent is Vanilla essence is added for masking taste
- Then also added perfume for good smell.
- Molding is the actual step where the melted lipstick is poured into metal mold, the mix is poured while it is hot. However, it is beneficial to harden then Place in the freezer.
- Scarp the top layer by sharp knife and remove stick by the mold.
- Pass the lipstick through the flame is quick fashion it gives gloss to the surface layer of the lipstick.
- Perform Sifting temperature test.
- Place the lipstick in lipstick container [9,26]

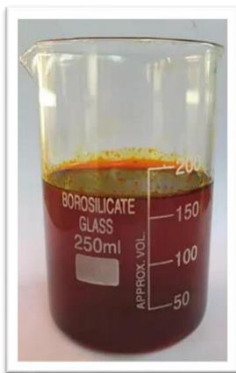


Fig no-6 Bixa Orellana seed extract



Fig no-7 Heating

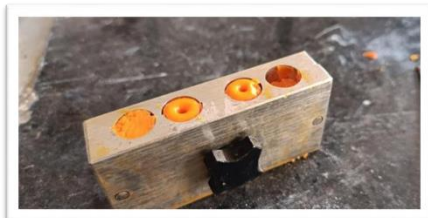


Fig no-8 Molding



Fig no-9 Mold opening



Fig no 10-Packaging

6. EVALUATION TESTS ^[12]

- Organoleptic properties
- Melting point
- Force of application
- Surface anomalies
- Solubility test
- PH parameter
- Skin irritation test
- Perfume stability

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

1. ORGANOLEPTIC PROPERTIES:

The prepared natural lipsticks were evaluated for organoleptic properties such as color, odor and texture.

2. MELTING POINT:

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

3. DETERMINATION OF PH:

The pH of the formulated lipstick was analyzed by using PH meter.

4. SKIN IRRITATION:

The natural lipsticks of all the formulations (F1-F3) were evaluated for skin irritation test by applying the product on the skin for about 15min.

5. PERFUME STABILITY:

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

6. SURFACE ANOMALIES:

This was studied for the surface defects, such as no formation of crystal on surface, no contamination by molds, fungi etc.

7. AGING STABILITY:

The product was stored in 40°C for 1 hours. various parameters such as blending, crystallization on surface and ease of application were observed.

8. SOLUBILITY:

Formulated herbal lipstick was dissolved in various solvent to observed the solubility.

These studies were conducted on all the three (F1- F3) formulations of natural lipstick to record the evaluation parameters.



Fig no-11 Melting Point



Fig no-12 Skin Irritation



Fig no-14 Solubility



Fig no-15 Weighting

7. RESULT:

RESULT OF EVALUATION PARAMETER:

Sr. No	Evaluation Parameter	Formulation Code		
		F1	F2	F3
1	Color	Orange	Light Orange Reddish	Reddish Orange
2	Odour	Aromatic	Aromatic	Aromatic
3	Texture	Smooth	Smooth	Smooth
4	Melting point	69 ⁰ c	72 ⁰ c	79 ⁰ c
5	Determination of PH	6.5+-0.3	7.4+-0.3	7.3+-0.3
6	Force of application	Good / Easy	Easy	Poor
7	Skin irritation	No Irritation	No Irritation	No Irritation
8	Surface Abnormalities	No Defect	No Defect	No Defect
9	Perfume Stability	+++	++	+
10	Aging Stability	Smooth	Smooth	Smooth
11	Solubility			
	a) Water	Insoluble	Insoluble	Insoluble
	b) alcohol	Slightly Soluble	Slightly Soluble	Slightly Soluble
	c) chloroform	Soluble	Soluble	Soluble

+++ Excellent, ++ Very Good+ Good.

The present work of formulation and evaluation of herbal lipstick was aimed to formulation of lipstick using a herbal ingredient prospect to safe over the available synthetic one .The prepare formulation of lipstick ,were evaluated and it was found that the **F1**was best one among all three lipstick formulations, it was concluded that theses formulated lipstick has better option to women with a minimum side effect also further more formulation can formulated & evaluated along with detailed clinical trial for every formulation for their better efficacy.⁽¹⁾

8. CONCLUSION:

Pollution and harsh climates badly affect the lip and these effects can be countered by the regular usage of Herbal lipstick. They help to retain the elasticity of lip cells, thereby controlling premature aging of the lips. An herbal 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 of Herbal 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 color

Bixa Orellana, commonly known as annatto or lipstick tree, is a plant that is widely used for its natural pigment properties. Its seeds are known to produce a bright red-orange color that has been traditionally used as a natural dye for textiles, food, and cosmetics.

Herbal lipstick made from bixa Orellana seed extract is believed to offer numerous benefits. For instance, it is said to be a natural alternative to synthetic lipsticks, which may contain harmful chemicals. Additionally, the plant extract is thought to provide antioxidant and anti-inflammatory properties that may help protect and soothe the lips. While there is limited scientific research on the specific benefits of bixa Orellana seed extract in lipstick, many users report positive results. Some claim that the herbal lipstick helps moisturize and hydrate their lips, while others appreciate the

natural-looking color and texture. Overall, while more research is needed to fully understand the potential benefits of herbal lipstick made from bixa Orellana seed extract, it is a promising natural alternative to traditional lipsticks that may offer a range of benefits for those seeking a more natural approach to their beauty routine.

There is no definitive conclusion on the effectiveness or safety of herbal lipstick, as the available evidence is limited and mixed. Some studies suggest that certain herbal ingredients in lipsticks may have potential health benefits, such as moisturizing and antioxidant properties. However, other studies have raised concerns about the potential for allergic reactions or other adverse effects from certain herbal ingredients. Ultimately, the choice to use herbal lipstick is a personal one that should be based on individual preferences and priorities. It may be beneficial to consult with a dermatologist or other healthcare professional to determine if herbal lipstick is a good choice for you, particularly if you have any preexisting skin or allergy concerns

Sr. No	Evaluation Parameters	Inference
1	Color	orange
2	Odor	Aromatic
3	Texture	Smooth
4	Melting Point	69 ⁰ c
5	Determination of PH	6.5+0.3
6	Force of Application	Good
7	Skin Irritation	No Irritation
8	Perfume stability	+++ (Excellent)
9	Surface Abnormalities	No Defect
10	Aging Stability	Smooth
11	Solubility	
	a). Water	Insoluble
	b). Alcohol	Slightly soluble
	c). Chloroform	Soluble

9. REFERENCE:

1. Pooja Mishra and sumeet Dwivedi, formulation and Evaluation of lipstick containing herbal ingredient, Asian J Med. pharm Res.,2(3):58-60,2012.
2. Uzma S, Shayesta K, Abdul Sameesh, juveriya M, Herbal lipstick – An Updated Overview; IJCRT, Vol 10 ,Issue5, 2022.
3. Miss Kolekar Aparna sandipan Dr. Hingne L.D “Formulation and Evaluation of Herbal Lipstick” IJCRT,Vol10,Issue 6,2022.
4. Benefit of Herbal Lipstick <https://www.herbiar.com/>
5. V. Anilkumar, M .D Dhanaraju , A Review on Herbal Lipstick ,J Pharma Adv Res , 2021; 4(4) 1179-1190
6. Niranjana Dalapati, Prasanna Kumar Kar,simanchal Panda , “Preparation And Evaluation Of Herbal Lipstick ”,WJPR Vol 7,Issue 9,245-249
7. Chattopadhyay P.K (2005) Herbal Cosmetic and Ayurvedic Medicines,I ed National Institute Of Industrial Research ,45-50.
8. Hole Pundlik, Renuka R Deshpande, et.al “Formulation And Evaluation Of Herbal Lipstick, IJIRT, May (2020) Vol 6 Issue 12
9. Saeid Mezail Mawazi,N.A. Othman ,et.al “ Lipstick History ,Formulation ,and Production : A Narrative Review ”, feb 2022.
10. Jaysingh A, Rajpurohit , Sameer R.Shaikh ,et.al “Formulation And Evaluation Of Herbal Lipstick By Using Bixa Orellana as coloring Pigment , IJP And Chemical Research ,Vol 3 ,Issue 3, Jul-sep (2017).
11. Abhijeet A.Aher Shripad M,et.al “Formulation and evaluation of herbal
12. Lipstick from colour pigment of bixa Orellana (Bixaceae)Seeds, IJP and pharmaceutical Science,vol 4,suppl 5, 2012
13. Amol Sherikar, Desing Development And Assessment Of Herbal Lipstick Form Natural Pigment ” April 2020.
14. Aboli Bornare, Tejasvi Tribhuvan et.al, “Formulation And Evaluation Of Herbal Lipstick”, IJCRT.
15. Swetha Kruthika V, S Sai Ram et.al, “Formulation & Evaluation Of Natural Lipstick From Coloured Pigment Of Beta Vulgaris Taproot,” Research & Review:Journal Of The Pharmacy & Pharmaceutical Science Vol 3,Issue3,July-Sep,2014.
16. Sharma pp et.al formulation and quality control 3rded.vandana publication:2005.
17. Dobret.Floarea,O.Separation of chemical compounds from natural product. Edit Matrix ROM,bucuresti:1997.
18. Bijauliya, R.K.; Alok, S.; Kumar, M.; Chanchal, D.K.; Yadav, S. A comprehensive review on herbal cosmetics. Int. J. Pharm. Sci. Res.2017, 8, 4930-4949.
19. Munawiroh, S.Z.; Nabila, A.N.; Chabib, L. Development of water in olive oil (W/O) Nanoemulsions as lipstick base formulation.Int. J. Pharm. Med. Biol. Sci. 2017, 6, 37-42. [CrossRef]
20. Ragas, M.C.; Kozlowski, K. Read My Lips: A Cultural History of Lipstick; Chronicle Books LLC: San Francisco, CA, USA, 1998. 13. Rasheed, N.; Rahman, S.; Hafsa, S. Formulation and evaluation of herbal lipsticks. Res. J. Pharm. Technol. 2020, 13, 1693. [CrossRef]
21. B.Chengiah, et.al/int j.pharmatech Res 2010,2(1) page no:145-150.
22. Dwivedi S. Dwivedi A. Dwivedi S N. Folklore uses of someplants by the tribal are of Madhya Pradesh with specialreference to their conservation. Ethno botanical Leaflets, 2008; 12: 74 1-743
23. M.A. Pedreno, J. Escribano, "Correlation between antiradical activity and stability of betanine from Beta vulgaris L. roots underdifferent temperature, pH and light conditions", Journal of the Science of Food and Agriculture, vol. 81, 2001, pp. 627-631
24. Bijauliya, R.K. Alok, S: Kumar, M.; Chanchal, D.K. Yadav, S. A comprehensive review on herbal cosmetics. Int. J. Pharm. Sci. Res.2017, 8, 4930-4949
25. Munawinh, S.Z. Nabila, A.N. Chabib, L. Development of water in olive oil (W/O)

- Nanoemulsions as lipstick base formulation Int. J Pharm. Med. Biol. Sci. 2017, 6, 37-42. [CrossRef]
26. Ragas, M.C Kozlowski, K. Read My Lips: A Cultural History of Lipstick: Chronicle Books LLC San Francisco, CA, USA, 1998
 27. Rasheed, N. Rahman, S. Hafsa, S. Formulation and evaluation of herbal lipsticks Res J Pharm. Technol 2020, 13, 1693. [CrossRef]
 28. Kaul S. Dwivedi S. Indigenous ayurvedic knowledge of some species in the treatment of human disease and disorders. Inter J Pharm and Life Scil 2010, 1 (144-49)
 29. <https://www.slideshare.net/RitaKhoury2/cosmetic-process-lipstick-synthesis>
 30. Kapoor V.P Terbal cosmetics for Skin and Hair care, Natural Product Radiance, 2005,1(4),306- 314