

Formulation and Evaluation of Herbal Lip Sun Protection Lipstick

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ABSTRACT:

The cosmetic used to colourize the lips is lipstick. It improves the lips' visual appeal. Lipstick is intended to protect the lips from many forms of harmful UV rays, enhance beauty, and make them appear more attractive. In addition to pigments, oils, scent, preservatives, colours, and textures, herbal lipstick also provides protection for the lips. It is now a component found in practically all women's handbags. Smooth lips, shiny lips, shiny lips, and moist lips all require just little cosmetic adjustments. Because natural cosmetics are secure, herbal lipsticks are becoming more and more popular. To meet women's desire, the market offers hundreds of colour tones in both liquid and stick on lip application forms. Natural lipsticks with few negative effects. It has safe, natural substances or nutrients that maintain the health of lips. Lipstick that uses artificial colourants, which are comprised of dangerous chemicals, is particularly bad for our skin. Synthetic colour usage over an extended period of time may result in major health issues like skin blemishes, lip cancer, skin inflammation, etc. Lipstick exhibits a variety of harmful effects, including allergic reactions, nausea, dermatitis, drying of the lips, and even death. Because herbal compounds are safe, demand for cosmetics incorporating them has therefore increased globally. Different parameters were used to evaluate the herbal lipstick, including colour, pH, melting point, surface anomalies, ageing stability, perfume stability, skin irritation, etc. These factors led to the conclusion that this herbal lipstick formulation had the greatest local effect on the lips and had few to no negative effects. This study primarily focuses on lipstick formulation, natural colourant extraction, and evaluation.

KEY WORDS: Herbal cosmetics, herbal lipsticks, natural ingredients, besellarubra berries

I. INTRODUCTION:

According to D&C act 1940 & rules 1945, cosmetics mean any article intended to be sprayed, poured, rubbed, or sprinkled on or introduced into, or applied to the human body or its any part for ablation, glamorize, promoting enchantment or reshape the appearance.^[1] Lipstick get their colors from diffusion of pigments and lake dyes however now not limited to Bromo acid, D&C Red No: 21, Calcium lake which include D&C Red 7 and D&C Red 34, and Orange No: 17 there are organic and inorganic pigments.^[2]

Herbal cosmetics are also known as "natural cosmetic" or "ayurvedic cosmetics". Herbal cosmetics came into existence when human race started using cosmetic products. So they are oldest products used by mankind. Some common cosmetics include creams, face packs, scrub, hair oil, hair colors, shampoos, hair conditioners, lipsticks, blush-on or rouge as it is sometime known, eyeliners, mascaras, foundations and eye shadow, perfumes and fragrance, soaps, etc. The formulation of all these cosmetic product includes addition of various natural additives like oils, waxes, natural colors, natural fragrances and parts of plants like leaves, flower etc. by specific formulation methods. Herbal cosmetics, are thus referred as products, formulated using various permissible cosmetic ingredients to form the base in which one or more herbal ingredient are used to provide defined cosmetic benefits only. The natural content in the herbs does not have any side effects on the human body; instead enriches the body with nutrients and other useful minerals. Some well known marketed products are turmeric skin cream by Vicco India ltd; hair shampoos and hair conditioners by Himalaya company India.

Herbal cosmetics are developed by applying distinct Cosmetic essentials to form the base in which one or more elements of natural origin are used. Plants are primarily used for

improvement of new drug product for cosmetic formulation. In herbal cosmetics the herbs are used in crude or extract form. Herbs include crude plant material like fruits, flowers, leaves, seeds, wood, bark, stems, rhizomes, roots or other plant part, which may be integrated, disintegrated or powdered. Herbal materials also include fresh juices, gums, fixed oil, essential oils resins and dry powders on herbs. Herbal cosmetics are formulated by using different decant cosmetic ingredients to form the best in which one or more herbal ingredients are used to cater defined cosmetic benefits. Herbs do not produce immediate treatment. They provide a way to make the body in proper composition with nature. An excessive number of cosmetic and toiletry formulation have devise and developed due to their skin ability and lack of side effects. The best tract of the herbal cosmetics is that it is hardly made by the herbs and shrubs and hence without any side effect. The natural ingredients in the herbs also provide nutrients and minerals to body. The term cosmaceuticals was first developed by Raymond read member of U.S Society of Cosmetics Chemist in 1961. The word cosmetic was derived from the Greek word “kosmtikos” which means having the power, to arrange and having skill in decoration^[3].

1.1 HISTORY OF LIPSTICKS

5000 years ago, in Mesopotamia, colored cosmetics were first used by crushing and applying rare and semi-precious jewels on the lips and eyelids^[4]. In 1915, lipstick started to be sold in metal tubes with a cylindrical shape^[5]. A large portion of ancient civilization of Egypt used cosmetic to improve the appearance and also to provide protection from the sun and hot winds of desert, except for the poor who could not afford the cost of cosmetics, whereas the lipstick became a daily part of their lives. In the past seaweed extract, iodine and bromine mannite were used to make early lipsticks, which were extremely hazardous. Eventually they figured out how to extract the carmine colour from ants and beetles. Red lips were frequently used to depict cleopatra (51-30 BC). Cosmetic were virtually non-existent in Europe for the first 1500 years after Cleopatra’s reign at least until the renaissance. Lipstick as a phrase wasn’t coined until 1880 and it wasn’t widely used until the late 19th and early 20th centuries. Lipstick and other cosmetic gained popularity in the 1920s and this tendency has persisted to the present day^[6]. Lipstick is currently

a necessary item for many consumers. A wide variety of colour tones and textures are available. To meet the rising demand, lipstick is being marketed in hundreds of different color tones as can be seen everywhere^[7].

1.2 SYNTHETIC LIPSTICKS

Lipstick contain wide range of the ingredients made from natural sources, chemical sources, and a mix of both. Nevertheless, synthetic-based lipstick ingredients and natural-based lipstick ingredients are available in market. Using synthetic-based ingredients of lipsticks may produce a serious adverse reaction. For example, the presence of lead in lipsticks and colouring ingredients is one of the most serious issues. Nickel and copper, two metals commonly found in cosmetics, can trigger allergic reaction in certain people^[8].

On some occasion, regular usage of synthetic products that contain ingredient such as lead, petrolatum, and phthalates may be harmful to consumers. These products may cause lip irritations and dry, chapped lips and can lead to health problem such as allergies, asthma, and cancer^[9, 10]. The habits of licking lips or eating and drinking while wearing lipstick can worsen the problems. Due to chronic exposure and their neurotoxic nature, harmful chemicals such as lead in lipsticks should not be ignored^[11,8].

1.3 HERBAL LIPSTICKS

Rational of the present study was to formulate the lipstick formulation for treatment of fungal lips infection such as angular cheilitis. Formulation prepared by using natural antifungal agent and coloring agent such as curcumin and pomegranate arils extract. Curcumin having yellow color and pomegranate arils extract having faint pink color, hence, combination of both gives dark color formulation. It gives moisturizer effect on lips and these possibly reduce side effects & cost of lipstick. The aim of the work was to formulate and evaluate a herbal lipstick containing natural antifungal natural agent (Curcumin) To evaluate the lipstick for various parameters. To minimize adverse effects, drug interaction and increased patient compliance. Lipstick formulations are most widely used to enhance the beauty of lips and to add glamour touch to the makeup. Lipsticks are cosmetic formulations for the modification or accentuation of lip color and are prepared by molding a dispersion of colors in a waxy base, in

the form of stick/crayon. Any preparations used in beauty treatments for lip make-up also known as sticks or more commonly known in beauty treatments by the name of lipsticks. When these preparations contain herbal ingredients, they are also known as herbal lipsticks.

1.4 EPIDEMIOLOGY OF LIPS^[12,13]

- **SWELLING**

An allergic reaction can make the lips swell. The reaction may be caused by sensitivity to certain food or beverages, drug, lipstick, or airborne irritants. When a cause can be identified and then eliminated, the lips usually return to normal but frequently the cause of the swelling remains a mystery. A condition called hereditary angioedema may cause recurring bouts of swelling. Non-hereditary condition such as erythemamultiforme, sunburn, cold and dry weather, or trauma may also cause the lips to swell.



Fig : 1.1 Swelling

- **SUN DAMAGE**

The sun damage may make the lips, especially the lower lip, hard and dry. Red speckles or a white filmy look signal damage that increases the chance of subsequent cancer. This type of damage can be reduced by covering the lips with a lip balm containing sunscreen or by shielding the face from the sun's harmful rays with a wide-brimmed hat. Inflammation of the lips (Cheilitis) the corners of the mouth may become painful, irritated, red, cracked, and scaly. Cheilitis may result from a deficiency of vitaminB12 in the diet.



Fig : 1.2 Sun damage

- **DISCOLORATION**

Freckles and irregularly shaped brownish areas (melanin macules) are common around the lips and may last for many years. These marks are not caused for concern. Multiple, small, scattered brownish-black spots may be a sign of a hereditary disease called peutz-jeghers syndrome, in which polyps form in the stomach and intestines. Kawasaki disease, a disease of unknown cause that usually occurs in infants and children 8 years old or younger, can cause dryness and cracking of the lips and reddening of the lining of the mouth.



Fig : 1.3 Discoloration

- **SORES**

A raised area or a sore with hard edges on the lips may be a form of skin cancer. Other sores may develop as symptoms of others. Medical conditions, such as oral herpes simplex virus infection or syphilis still others, such as keratoacanthoma, have no known cause.



Fig : 1.4 Sore

1.5 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.

1.5.1 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.

1.5.2 SATIN AND SHEER LIPSTICK :

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 re-applied many times.

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

1.5.4 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 desired look. Cream lipsticks contain more wax to be able to protect lips, but also cause aftereffect of dry lips.

1.5.5 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 utilizing this lipsticks.

1.5.6 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.

1.5.7 LONGWEARING 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.

1.6 IDEAL CHARACTERISTICS OF LIPSTICK^[14]

- It should be non - irritant.
- It should have required plasticity.
- It should non-toxic.
- It should be stable both physically and chemically.
- It should not dry on storage.
- It should be free from great particle.
- It should maintain lip color for longer period after its application.
- It should give shiny and smooth appearance free from sweating.
- It should have pleasant taste, odor and flavor.
- It should not melt or harden within reasonable variation of climatic temperature.

1.7 ADVANTAGES OF HERBAL LIPSTICK OVER SYNTHETIC LIPSTICKS^[15]

- They also contain natural nutrients that maintain the health of lips.
- The component in natural lipstick is entirely natural and safe to use.
- They have minimal or no impact on aspects.
- They are used to treat leucoderma of the lips and are non-toxic, highly lipophilic, anti-oxidants, anti-microbial, and anti-inflammatory.
- A wide variety of colours from which to pick.
- Purplish red, ruby red, beetroot purple, dark violet, pastel red, pale red, purplish red, rose red, deep magenta, dark purple, orange, and deep violet are only a few of the original colour that are available in colourants.
- From these colours, various combinations and shades can be made.
- Organic and inorganic acids and bases can be added to modify the colour to different hues.

II. MATERIAL AND METHOD

To make the herbal lipstick, pigment that has been derived from plants and plant parts is used. The choice of plant is made based on the presence of pigment and the colour it contains in order to be employed in the creation of lipstick. Using the plants and plant parts from Table No.1 During formulation, plant parts like basella rubra berries are employed. In addition to this raw material, we also need the ingredients listed in Table No. 2. Utilisation of ingredients during formulation and usage that are White soft paraffin is utilised for glossiness, while coconut oil is used for mixing. Bees wax is used for shiny and hardness. During the formulation, ingredients such

as ginger powder, vitamin, vanilla essence, basella rubra fruit pigment, and lemon juice are employed as anti-oxidants, anti-microbials, and antioxidants respectively.

2.1 MATERIAL

Bees wax, white soft paraffin wax, lemon juice, vanilla essence, basellarubra berries, perfume are the various material which are used in a current investigation.

2.2 Selection of herbs

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

TABLE NO : 01 Plant part used for formulation

S.No.	Botanical name	Common name	Plant part used	Source
01.	Basellarubra	Malabar spinach	Fruit	Vegetable market of bhilai
02.	Citrus limon	Lemon fruit	Fruit	Vegetable market of bhilai

TABLE NO : 02 Composition & importance of different ingredients used for preparation of herbal lipstick

S.No.	Ingredients	Importance	Quantity
01.	Bees wax	Glossy and hardness	2gm
02.	White paraffin wax	Glossy and hardness	1.5gm
03.	Coconut oil	Blending properties	3ml
04.	Castor oil	Blending properties	1.5ml
05.	Basellarubra berries	Coloring agent	4ml
06.	Aloe vera gel	Moisturizing and soothing	1.5 gm

		properties	
07.	Ginger powder	Anti-microbial	1 gm
08.	Lemon juice	Anti-oxidant	0.5 ml
09.	Vanilla essence	Flavoring agent	q.s

2.3 EXTRACTION PROCEDUR

The basella rubra berries were boiled with ethanol to create the decoction procedure, which was utilised to extract the colour pigment. boiled with ethanol for around 15 minutes at 60 to 80 °C. The volume is reduced to one-fourth its original volume by boiling throughout the extraction process from a starting ratio of 1:6 for crude drug

to ethanol. The concentrated extract is subsequently filtered and incorporated in the formulation in this form. Extract with a dark crimson hue was produced. The surplus moisture was then drawn out of the concentrated extract by keeping it in desiccators. For additional research, the dried extract was placed in an airtight glass container.



Fig: 2.1 Basella rubra berries Fig: 2.2 Basella rubra

2.4 METHOD OF PREPATATION OF LIPSTICK

- Extract the color pigmentation from basellarubra berries
- ↓
- Waxes were melted in china dish on water bath with decreasing order of their melting point
- ↓
- Basellarubr berries extraction was mixed with coconut and castor oil and heated.
- ↓
- Both phases were mixed at same temperature.
- ↓
- Lemon , ginger powder, vitmine E, vanilla essence were added at 40°C
- ↓
- Then mixture was poured into lipstick mould in excess amount and mould was kept on ice bath.



Fig : 2.3 Excipients that use for the formulation



Fig : 2.4 Lipstick in mould



Fig : 2.5 Formulation of herbal lipstick

III. EVALUATION OF HERBAL LIPSTICK :

It is very essential to maintain uniform standard for herbal lipstick, keeping these view in mind the herbal lipstick was evaluated on the parameter such as melting point, breaking point force of application surface anomalies etc.

3.1 MELTING POINT:

Determination of melting point is important as it is unindication of the limit of safe storage. The melting point formulated lipstick was determine by capillary tube method, the capillary was filled and keep in the capillary apparatus and firstly observed the product was slowly slowly milted. After some time observed product was completely melted. The above procedure was done in 3 times and melting point ratio was observed in all formulation.

3.2 BREAKING POINT:

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

3.3 SOLUBILITY TEST:

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

3.4 PHPARAMETER:

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

3.5 SURFACE ANOMALIES:

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

3.6 AGING STABILITY:

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

3.7 SKIN IRRITATION TEST:

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

3.8 PERFUME STABILITY:

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

IV. RESULTS

Table 4.1 :Evaluation of Herbal Lipstick

SR.NO.	PARAMETERS	F1	F2	F3
01.	Colour	Redish pink	Redish pink	Redish pink
02.	PH	6.2	6.2	6.4
03.	Skin irritation	No	No	No
04.	Melting point	58-60	58-60	60-62
05.	Breaking point	25	26	25
06.	Solubility test	Chloroform	Chloroform	Chloroform
07.	Surface anomalies	No defects	No defects	No defects
08.	Aging stabilitu	Smooth	Smooth	Smooth
09.	Perfume stability	+++	+++	+++

V. DISCUSSION

The present work formulation and evaluation of herbal lipstick was aimed to formulate a lipstick using herbal ingredients with a hope to minimize the side effects as produced by the available synthetic ones. Herbal lipstick has been tremendous boost in use of cosmetic by women. It also help the medicinal that softening, reduce inflammation, moisturizing the lip.

VI. CONCLUSION

An herbal lipstick is applied to rehydrate the lips' muscles, preserve the skin's elasticity, sweep away stuck-on dirt, and enhance blood flow. Herbal-based cosmetics have the advantage of being nontoxic. It nourishes the skin on the lips. This lipstick gives the lips the necessary nutrition. It aids in removing wrinkles, cracking, dryness, and lip folds. Lipstick has a soothing, calming, and cooling effect on the lips with minimal exfoliation.

They do so in the quickest possible time to restore the lip's natural sheen. Utilising natural lips frequently enhances their attractive colour and structure. The lip is negatively impacted by pollution and severe temperatures, but these effects can be lessened by regularly wearing herbal lipstick. They aid in maintaining the suppleness of lip cells, preventing early lip ageing. Using your natural lips, you may easily reduce wrinkles and fine lines. We discovered the herbal lipstick to have outstanding characteristics in this study, but more research is required to determine its full potential as a cosmetic. Natural medicines are now widely recognised since they are less likely to have negative effects than products with a chemical base and are safer. In order to meet the demands of the expanding global market, extensive quantities of herbal formulations are needed. The formulation of the herbal lipstick with various natural nutrients is a successful endeavour.

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