



Review on Herbal Lipstick

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ABSTRACT:

This review explores the multifaceted world of lipstick, focusing on its various shades, formulations, and application techniques. It provides an overview of the historical significance of lipstick, tracing its evolution from ancient civilizations to modern-day cosmetics. The review delves into the science behind lipstick formulations, discussing the ingredients that contribute to its texture, longevity, and pigmentation. Furthermore, it examines the diverse range of lipstick shades available on the market, considering factors such as skin tone compatibility and trend forecasting. Additionally, the review addresses the importance of proper application techniques, offering tips for achieving flawless and long-lasting results. By synthesizing information from cosmetic chemistry, fashion trends, and beauty expertise, this review serves as a comprehensive guide for lipstick enthusiasts and beauty aficionados alike.

Key words: Natural Pigment, lips, beauty, women

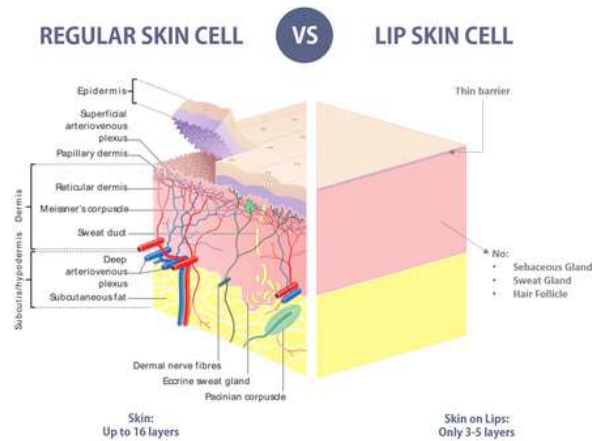
Introduction:-

There are a lot of synthetic lipsticks on the market right now. But because herbal lipstick is safe, comes from a natural source, and enhances consumer satisfaction, it has become more and more popular. Lipstick is a cosmetic primer that is used to tint lips and shield them from the outside world. Women use lipsticks the most frequently among makeup products to give their lips a beautiful colour and appearance. Women's apparent facial characteristics can be altered with lipstick. These are often produced as moulded sticks and are made of colouring pigments that have been dissolved or scattered in a fatty base made of an appropriate mixture of fats, oils, and waxes that have been appropriately scented. Lipsticks are cosmetic preparations that give the lips colour, texture, and protection. They are made of pigments, waxes, oils, and emollients.

There were only a few hues of lipstick available in the early 20th century. One of the most in-demand colours throughout the 19th and 20th centuries was dark red. Coal tar and other synthetic colours can lead to rashes, allergic reactions, nausea, and lip dryness.

Difference between lip and regular skin:

The lips are more attractive than the usual skin. The top corneum layer of normal skin usually has 15 to 16 layers, mostly for protection. The top corneum layer of the lip has only three or four layers, which is incredibly thin compared to typical facial skin. The skin on the lips is devoid of melanin cells. Because of this, the blood vessels are more visible through the skin of the lips, giving them a lovely pink tint. The skin of the lips is devoid of hair follicles and sweat glands. It doesn't have body oil or sweat to protect the lip from the weather as a result.



Anatomy of lips:

The lips function as speech, suction, and prehension organs. It is made up of the muscles that are inserted surrounding it (areolar tissue & mucous membrane), the skin, superficial fascia, and the orbicularis muscle. Dry, red mucous membrane that is continuous with the skin and has many touch corpuscles and vascular papillae covers the lip edges. Inside, the mucosal membrane produces the superioris and inferioris folds along the median line, reflecting off the gums on the upper and lower lips.

The coronary vessels that completely encircle the buccal orifice close to the lips' free edge are found in the areolar tissue, also known as the submucous layer. The superior and inferior coronary arteries, which emerge from the face, are the coronary vessels. Greater in size than its inferior counterpart, the superior coronary anastomoses with its counterpart on the other side, releasing a tiny artery into the septum arteriaseptinasi.

Nasal haemorrhage can occasionally be controlled by compressing this artery. The veins that drain the lower lip are called inferior coronary veins; however, the main branch from the lower lip usually descends to the submental vein, which then leads to the facial vein or frequently to the anterior jugular. The superior labial, also known as the coronary vein, starts as a plexus in the orbicularis muscle of the upper lip, passes with the coronary artery, and empties into the facial vein a little below the alae of the nose.

The mental, which leaves the bone through the mental foramen and sends thick twigs to the integument, mucous membrane, and fascia of the lip and chin, is the source of the nerves supplying the lower lip. While some of the lip's lymphatic veins go to the submaxillary glands, others flow to a gland located slightly above the hyoid bone's body. The submucous layer of the lips, directly surrounding the mouth opening, contains the labial glands. They release a mucous substance. The development of mucous retention cysts occurs when these glands' ducts obstruct.



Ideal characteristics of lipstick:

- 1) It has to be non-toxic.
- 2) It must not cause irritation.
- 3) When stored, it shouldn't dry out.
- 4) It had to have needed to be flexible.
- 5) It has to be chemically and physically stable.
- 6) There should be no significant particle present.

- 7) Its flavour, aroma, and taste should be pleasing.
- 8) It must not melt or solidify within a suitable range of temperature fluctuations in the climate.
- 9) It should have a smooth, shiny appearance without perspiration.
- 10) It should keep lip colour vibrant for a longer amount of time following application.

Different types of lipstick:-

Here are a few lipstick types with common features

1. Moisturising Lipsticks: Because they maintain lips smooth and supple, moisturising lipstick is recommended for people with dry lips. These lipsticks' hydrating properties come from components like aloe, glycerin, and vitamin E. Wet and incredibly shine lips are two more wonderful benefits of wearing moisturising lipsticks.

2. Satin and Sheer Lipsticks: These lipsticks make lips glossy and shiny while also moisturising and nourishing them. Because they contain a lot of oil, sheer and satin lipsticks may seem darker in the packaging than they do on the lips. Another feature of oil-based lipsticks is that they require repeated replies.

3. Matte Lipstick: Matte lipsticks are the ideal choice for ladies looking for a lovely, vibrant tint. These lipsticks offer full coverage and give the appearance of flat, unlustrous lips. Matte lipstick makes your lips look younger and smoother. Additionally, combining matte lipsticks with products containing aloe and vitamin E is recommended.

4. Cream Lipstick: Cream lipsticks are recommended for women with small lips. Cream lipstick has a smoothing effect on the lips but lacks shine. For the desired look, you must apply lip gloss afterwards. In order to preserve lips, cream lipsticks employ more wax, which might have the unintended consequence of making lips dry.

5. Pearl and Frosted Lipstick: Lips gleam and shimmer with frosted lipstick. Frosted and pearl lipsticks reflect light and give your lips an extremely glossy appearance. The side effects include the possibility of dry, cracked, and heavy lips. It is recommended that you moisturise your lips prior to using these lipsticks.

6. Gloss Lipstick: Because it makes lips sparkle and adds dimension to the lips, gloss is a very popular lipstick for females with small, thin lips. You could use gloss in addition to regular lipstick.

7. Cream Lipstick: Cream lipsticks apply smoothly on the lips thanks to their creamy texture. They have a satin-like finish and provide good hydration and coverage.

8. Long Wearing and Transfer Resistant Lipsticks: Long wearing lipstick is a good option for women who don't have much time to use lipstick. The composition in these lipsticks keeps lips looking flawless for four to eight hours. They hold up well, and before long, you'll eat something fatty. A lot of them have moisturiser in them to counteract the lips' dryness.

Mechanism of lipstick:

A lipstick swivelling mechanism consists of a cup with a lipstick bullet nosepiece that serves to enclose the cup and direct its movement, held in place by the cup body. A screw that was received inside the spiral and detachably attached to the cup, as well as helical guiding grooves fashioned on its inner surface, were part of the rotatably connected nosepiece. The screw's exterior surface is constructed with double-helical protrusions. Rotating the spiral causes the double-helical protrusions to be received in and guided by the helical guiding grooves inside the spiral, which causes the screw and the cup to move upward or downward.

Advantages of lipstick:

- 1) The natural lipstick's ingredients are completely natural and safe to use.
- 2) They also include organic nutrients that maintain the health of lips.
- 3) Their impacts are less or on aspect.
- 4) They are used to treat lip leucoderma and are non-toxic, highly lipophilic, antioxidants, anti-microbial, and anti-inflammatory.
- 5) A wide variety of colours to select from.
- 6) Colourants come in a variety of original colour tones, including deep magenta, dark purple, orange, deep violet, ruby red, beetroot purple, pastel red, rose red, and purplish red.

7) In addition, you have a variety of finishes to pick from, like metallic, glossy, satin, and matte. This lets you try on different lipsticks to find the ideal match for your particular style, occasion, and attitude.

8) These colours can be combined to create a variety of tints.

9) Different hues of colour can be achieved by incorporating both organic and inorganic acids and bases.

10) Lipstick may accentuate your lips' natural colour and shape while drawing attention to them. It can provide the appearance of larger, more defined lips, glamming up your entire appearance.

11) Applying lipstick can help you feel put together and more confident. It can be an easy, yet powerful, approach to draw attention to your best qualities and boost your confidence. Your self-esteem might benefit when you are confident with your appearance.

12) Lipstick completes your makeup like the cherry on top. It can elevate your appearance and give you a more put together appearance. Lipstick can provide that last splash of colour to finish off your overall style, whether you're trying for a dramatic, statement look or a natural, daily one.

13) Using lipstick to show your individuality and style is a unique and enjoyable way. Lipstick gives you the opportunity to express your uniqueness and make a statement, whether you choose to go for a subtle, natural look or like playing around with bright, dramatic colours.

Components of lipstick:

Base: Bees wax, candelilla wax, carnauba wax.

Oils: coconut oil, Sweet Almond oil, Jojoba seed oil, Castor oil, Coconut oil, Carrot oil, Wheat oil, Sunflower oil, Pomegranate oil, Rose oil, castor oil

Colouring agent: Tomato, beetroot, Paper flower, sandalwood, carrot, saffron, hibiscus pomegranate, annato, watermelon, Alkanet, Turmeric

Flavoring agent: vitamin E, Essential oils, Plant based preservatives such as grapefruit seed oil

Antioxidants: Lemon juice.

List of natural colorants :

origin	
Plant origin	Tomato, beetroot, Paper flower, sandalwood, carrot, saffron, hibiscus pomegranate, annato, watermelon, Alkanet, Turmeric
Animal origin	By dye yielding insect Lac, cochineal, kermes, etc.
Mineral origin	Various metallic salts and metal oxides.

Name	Chromophore	Colour
Tomato	Lycopene	Red
Beetroot	Betainin	Red
Paper flower	Betalain	Magenta/purple
Sandalwood	Santarubin A	Pale yellow
Carrot	Carotenoids	Orange
Saffron	Crocetin	Red
Hibiscus	Anthocyanins	Red/pink
Pomegranate	Lycopene	Red
Annato	Bixin	Orange/Red
Dragon	Betalains	Red violet
Watermelon	Lycopene	Red
Alkanet	Alkannanin	Red /purple
Turmeric	Curcumin	Yellow
Buriti	Beta-carotene	Red/ orange

Extraction methods:

Extraction of Lycopene from *Lycopersicon Esculentum* (Tomato)

The primary colouring agent found in tomatoes is lycopene. Trans-lycopene makes up 35–96% of the total lycopene content in tomatoes and tomato-based products, while cis-lycopene makes up only 1–22%. Mash the tomatoes to release the crude tomato juice, then strain the juice to extract the pulp

and serum. Add 30ml of heated benzene to the warm paste, stir, and then decant the benzene. Five times over, repeat this. After the benzene was distilled out, we obtained the residue and used ether to recrystallize it.

Extraction of Betanin from Beta Vulgaris (Beetroot)

The primary source of beetroot red, a natural red dye, is beetroot. The primary component of the red colourants derived from ordinary beets is beta nine. The roots are usually a rich reddish-purple colour, although they also come in a wide range of other hues, including golden yellow and red and white stripes. Pigment is extracted by homogenising fruit pulp and solvents at a 1/1w/v ratio. Take 100g of the watery-textured, peeled fruit and macerate it for 15 minutes in an ice bath with 100ml of solvents (EtOH and aqueous ethanol 50:50). After centrifuging the aqueous mixture for 20 minutes at 4°C and 18,000 rpm, filter it right away through nylon mesh. With a rotating evaporator, condense the extract to 3–4 millilitres under vacuum at 35°C. After concentrating the alcohol entirely, store the samples in a dark container.

Extraction of Lycopene from Daucus Carrota (Carrot)

Carrots are a fruit or vegetable that can be used as a natural colour since they have a high carotenoid content. The primary pigment that was derived from the carrot is lycopene. Fresh carrots should be dried in an oven at 40°C. Powder the sample coarsely with a mixer grinder. Combine 450ml of 95% ethanol with 50g of this air-dried sample. After a 24-hour incubation period, filter it. Under vacuum, evaporate the solvent and maintain the extract at 4°C.

Extraction of Bixin Form Bixa Orenella (Annatto)

The carotenoids bixin, nor-bixin, and their esters make up the reddish-orange colour dye known as annatto, which is extracted from the outer layer of plant seeds. Powder the dried seeds of Bixa orenella. After that, extract 100g of the material for 18 hours using ethanol at 60–80°C. 1:2 ratio. When the extraction is finished, run the hot extract through Mann filter paper (NO.10) to get rid of any remaining contaminants. Using vacuum distillation, concentrate the extract volume to 1/10; transfer the extract to a 100 ml beaker and evaporate the leftover solvent over a water bath. Dark reddish extract should be kept in desiccators to eliminate excess moisture. Pack the dry extract into a glass jar that is airtight.

Extraction of Betalains from Hylocereus Polirhizus (Dragon Fruit)

Betalains is a naturally occurring colourant found in dragon fruit. Among the naturally occurring pigments known as betalains are the yellow betaxanthins and the reddish-violet beta cyanins. Dragon fruit is extracted using a solvent extraction method that combines ethanol and n-hexane. 20g of the material should be ground in a blender and then soaked in n-hexane and ethanol for the entire night. Solvents should be totally eliminated using a rotary evaporator. This should be done three times total till the extraction is finished.

Extraction of Lycopene from Citrullus Lanatus (Watermelon)

Organic solvents like chloroform, hexane, acetone, benzene, petroleum ether, and carbon disulfide are typically used to extract watermelon pigment. One way to make extraction easier is to grind the material efficiently with a machine. It is best to avoid exposing extracted lycopene to light and to utilise only red, yellow, or gold light. revealed that lycopene's isomerization was enhanced by heating at 60 and 80 degrees Celsius. The extraction of lycopene from pure matrix was enhanced by heating at 120°C and heating for an extended period of time at 100°C. Light exposure did not significantly alter total or all trans lycopene, however it did significantly reduce cis-isomer lycopene.

Extraction of Curcumin from Turmeric

Conventional solvent-extraction method -

Fiber-formed rhizome (1 kg) is kept in a 3 L amber glass beaker and extracted at room temperature with 1 L of absolute ethanol, soaked and stirred (400 rounds/min). Cover the beaker to prevent loss of ethanol, then leave it for a week. The extracts were filtered separately under vacuum. They can be removed from the ethanol and stored for use as a dry composition. The prepared ethanol extract is transferred to the round-bottomed flask of a rotary evaporator and heated to a maximum temperature of 45 °C. The condensed ethanol is collected via a condenser for the purpose of re-using in subsequent extractions, and the rest of the extracted solution that is free from solvent is removed from the flask for curcumin precipitation with hexane. The resultant powder is stored in an amber bottle until needed. The dried powder was weighed accurately and percentage yield was calculated (sample N1). Afterwards, weigh out a small amount of this sample and prepared it into a solution with concentration 1 mg/mL for HPLC/MS analysis.

Extraction of Anthocyanins from Ipomoes Batatas (Potato)

The purple sweet potato pigment was extracted from purple sweet potato wine vinasse powder using an oscillation extraction method for 90 minutes at 60 degrees Celsius. A specific ratio of a mixture of citric acid and ethanol was used. Centrifugation was used to recover the supernatant (5000 rpm, 5 min). After two more extractions, the supernatant was combined to create a crude extract of purple sweet potato pigment.

Extraction of Phenolic Compound from Citrus Sinensis (Orange)

A refrigerator water circulator re-cooler connected to the extractor was used in the extraction experiment along with a quadruple soxhlet apparatus to facilitate solvent condensation and provide phenolic pigment. The solvent employed was ethanol. This took roughly six hours to complete. Heidolph brand Hei-VAP Precision model rotary evaporator was used to produce orange coloured extract in powder form, and the semi-fluidized sample was allowed to dry in the dark.

Method of preparation:

- Primelling of pigments

Pigment premilling is the initial stage in the manufacture of herbal lipstick, which breaks down the powder's agglomerates to give the lipstick a uniformly smooth and equal colour.

- Melting and mixing

The next step entails melting and blending, as waxes remain solid at ambient temperature and cannot be blended with other substances to facilitate the melting process. Usually, it can be mixed with oil, and then the pigment and additional ingredients are added and mixed together to create a uniform material that is melted into the foundation.

- Molding

Combining and melting The subsequent phase entails melting and blending, as waxes remain solid at ambient temperature and cannot be blended with other substances to facilitate the melting process. Usually, it can be mixed with oil, and then the pigment and additional ingredients are added and mixed together to create a uniform material that is melted into the foundation. • Forming The actual moulding process involves pouring the molten lipstick into a plastic or metal mould while it is still hot to help it solidify. The mixture is then gently extracted from the mole by applying a little pressure.

- Flaming

The final step involves flaming the lipstick, which involves holding it in the flame for a maximum of one second while twisting it to create a shiny finish. After that, the lipstick is taken out of the flame and placed back into the bottle. From Test 1 to Test 5, many formulas are created using colourant and oil as variable parameters in an effort to identify the best lipstick.

Evaluation Parameters :

1.Colour and texture: The colour, glossy finish, and smooth texture of the prepared lipsticks were examined.

2.pH:

A digital metre and pH paper were used to measure the pH of herbal lipstick formulations.

3.Determination of Melting Point:

The melting point can be used to determine the upper limit of safe storage. The capillary tube method was used to determine the formulated lipstick's melting point. A sample of lipstick weighing about 50 mg was melted and then put into a glass capillary tube that had been opened on both ends. The capillary was raised using a thermometer after being chilled with ice for a full day. The beaker with water in it was set on a heating plate with a magnetic stirrer, and the thermometer with its capillary was buried deep within. Slowly and at a set pace, heating and stirring were initiated. Melting point was defined as the temperature at which a material flows along a capillary tube.

4.Breaking Point:

The purpose of this test was to determine the highest load that lipstick can bear before breaking. This test gives lipstick its strength. The prepared herbal lipstick was positioned one inch from the edge of support and held horizontally in a socket. The breaking point was determined by gradually increasing the weight by a predetermined amount (10 g) at predetermined intervals of 30 seconds.

Determination of hardness: Formulated lipstick from each formulation was selected randomly and measured using Monsanto hardness tester. The average result of each formulation was calculated and recorded.

5.Determination of Spreadability:

The lipstick was applied to the glass slide several times to test the consistency of the protective layer's formulation and to see if the stick broke, fragmented, or distorted while being applied.

Good: Perfect application, no lipstick deformation, homogeneity, and absence of pieces. →

Intermediate: consistent, retain pieces, excellent application, but not overly distorted.

Bad: Not uniform, distorted, and leaves many fragments. Applying it is also tough.

6.Softening Point:

Lipstick should be resilient enough to endure a variety of situations that it may encounter in the customer's purse. It need to withstand changes in temperature and be as simple to use as an axe in cold weather and as easy to apply in hot weather. The Ring and Ball method was used to find lipstick's softening point.

7.Ring and Ball method:

A prepared herbal lipstick was placed into a ring or support orifice. Using a sharp knife, the excess material above and below the opening was cut away, leaving lipstick tablets inside the ring. This was kept in a 60°C refrigerator for roughly ten minutes. A stand had the ring fastened to it. A 500 ml beaker of room temperature water is set on a hot plate and stirred with a magnetic stirrer. The lipstick tablet was carefully placed on top of a steel ball. After that, the bar was inserted into the beaker until it was submerged in it. Using a thermometer, gently stir and heat. The temperature at which the steel balls and lipstick mass loosened and settled to the beaker's bottom was identified as the lipstick's softening point.

8.Rancidity:

When using dark-colored lipstick, this test is likely to be vitiated since the peroxide number endpoint may not be very sharply defined. In such circumstances, it is expected that the manufacturer will routinely use the peroxide number test to determine the rancidity of lipstick raw materials, particularly vegetable oil and other components that are prone to rancidity in base combinations without colours.

Reagents: Acetic acid, chloroform, Potassium chloride solution, saturated sodium thiosulphate- approximately 0.01N

Method: Weigh the lipstick sample (5.0 and 0.05 g) in a 250 ml conical flask, then dissolve it in 30 ml of a combination of acetic acid and chloroform (3:2). If needed, use heat to dissolve the sample. After adding 30 ml of distilled water and shaking for two minutes, add 0.5 ml of freshly produced saturated potassium iodide solution. Titrate with 0.01N sodium thiosulphate solution using starch as an indicator.

The peroxide number (PN) is calculated as per

the equation given below.

$$PN = ME \times A \times N \times 1000 / MS \dots (1)$$

Where, ME is Milli equivalents peroxide per 1000 g sample,

A is volume in ml and

N is Normality of sodium Thiosulphate solution and MS is Mass of sample.

Microbiological test:

This test involves plating a known mass of the sample on two culture media that have been carefully chosen to support the growth of bacteria and fungus. It then involves incubating the media for a certain amount of time to allow the growth of visible colonies that can be counted.

Equipment:

Provided are durable glass tubes that snugly fit metal, appropriate-sized autoclaves. They are responsible for maintaining the chamber's consistent temperature up to and including 1200 °C, which is the sterilising temperature. They must have a pressure gauge, a precisely placed thermometer to record the lowest temperature within the sterilising chamber, a correctly adjusted safety valve, a Petri dish, and a colony counter. Nutrient Agar Medium as a Medium: In a two-liter beaker filled with distilled water, dissolve 5 grammes of beef extract (or yeast extract), 5 grammes of sodium chloride, and 10 grammes of peptone by boiling over a water bath. Boil the mixture after adding 25 grammes of powdered agar until the agar dissolves fully. With the use of sodium hydroxide solution and a pH metre or comparator, bring the pH down to 7.4. Pour the hot mixture through a lint cloth that has been placed in a funnel, and then transfer the 20 ml portion into tubes. After sealing the tubes with cotton or metal caps, autoclave them for 20 minutes at 121 °C and 1.05 kg/CMG pressure. Store the tubes in a refrigerator after autoclaving.

Procedure:

Weigh the sample and aseptically transfer four 0.5 g portions to four nutritional agar tubes that have melted. Shake the tubes to ensure that the contents are well mixed, then pour the mixture into sterile Petri dishes. For 48 hours, incubate the nutrient agar tubes at 370 °C. Calculate the average number of colonies on a nutrient agar tube for each gramme of the material.

9.Aging stability:

The prepared herbal lipstick was kept for one hour at three different temperatures: 40 °C in the refrigerator, 20 to 250 °C at room temperature, and 30 to 400 °C at high temperature. A number of characteristics were noted, including bleeding, streaking, catering, and blooming.

10. scent stability: The prepared herbal lipsticks underwent a 30-day scent stability test.

11. Skin irritation test: This involves putting the product on the skin for ten minutes and looking for any signs of irritation.

12. Surface anomalies: Any surface flaws, including surface crystal formation, mould growth, fungus, etc., are being investigated.

13. Solubility test: To determine the herbal lipstick's solubility in different solvents, it was dissolved.

14. Skin irritation test: Apply the medication and leave it on for ten minutes.

15. Force of Application: This test is used to ascertain the appropriate force to be used while applying. Using a piece of coarse brown paper that is balanced on a shadow graph, cover a one square inch area with lipstick at a 45-degree angle until it is completely covered. The pressure leading serves as a gauge for the applied force.

Defects in lipstick:

Sweating:

Because of excessive oil content or poor oil binding, this is the most prevalent issue with lipstick formulation. In any climate or temperature range, it may rise.

Bleeding:

The term "bleeding" describes the process by which coloured liquids separate from their waxy base.

Streaking:

On the completed product, a thin line or band of a different colour or material shows.

Issues Associated With Moulding Laddering:

After congealing and setting, lipstick takes on a multi-layered appearance rather than a smooth or uniform appearance.

Deformation:

The lipstick appears to have a distorted shape due to a moulding issue. It's obvious and shows up on the lipstick's two sides.

Cratering:

This occurs during the split moulding process and manifests as burning when the stick acquires dimples.

Mushy Failure:

This issue occurs when the lipstick's middle becomes brittle and lacks structure.

Conclusion:

The herbal lipstick review concludes that it offers a natural alternative to conventional lipsticks, with potentially beneficial ingredients. However, its efficacy, longevity and color range should be considered for comprehensive assessment.

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