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Formulation and evaluation of herbal lipstick

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Abstract

Herbal beauty formulations are increasingly recognized for their safety, minimal side effects, and therapeutic advantages over synthetic cosmetics. Lip care products prepared from natural sources not only enhance appearance but also support lip health. This study focuses on the development and evaluation of a herbal lipstick incorporating naturally derived ingredients, including beetroot extract, rose, beeswax, and vitamin E. These components serve as natural colorants, moisturizers, antioxidants, and texturizing agents, contributing to both aesthetic appeal and protective functions. The prepared formulation underwent various physicochemical and stability assessments, including melting point determination, breaking strength, pH analysis, solubility testing, skin sensitivity evaluation, organoleptic inspection, and stability studies. The results showed favorable characteristics with acceptable texture, smooth application, stable fragrance, proper pH, and absence of irritation or microbial contamination. Overall, the herbal lipstick demonstrated promising performance comparable to commercial lip products while maintaining a natural ingredient profile. This study supports the growing preference for herbal cosmetic alternatives and highlights the potential for developing safe, eco-friendly, and consumer-friendly lip care solutions using natural resources.

Keywords: Herbal lipstick, natural pigments, plant-based cosmetics, beeswax, beetroot extract, vitamin E, lip care formulation, cosmetic evaluation, antioxidant property

Introduction

Cosmetics are products used to make our body look better. They include things like skin creams, lotions, powders, perfumes, lipsticks, nail polish, and eye makeup. The word cosmetic comes from a Greek word that means to decorate or make someone look attractive. Herbal cosmetics, also called natural cosmetics, are beauty products made with approved ingredients along with plant-based materials to provide special skincare benefits. They are becoming very popular, and the global market for herbal beauty products is growing rapidly. "The Drugs and Cosmetics Act, 1940 was established to control the import, production, distribution, and sale of medicines and cosmetic products in India. The Drugs and Cosmetics Rules, 1945 were created under this Act to lay down the legal requirements for issuing licenses for manufacturing and selling drugs. These rules help ensure that the medicines produced and sold in the country are safe, effective, and of good quality. According to the FD&C Act, cosmetics are products designed to be applied to the human body— whether by rubbing, pouring, sprinkling, spraying, or any other method— with the purpose of cleansing, enhancing beauty, improving attractiveness, or altering one's appearance. Indian consumers are increasingly choosing natural and herbal cosmetic products. Herbal cosmetics are preferred because they generally cause little to no side effects. The herbs used in these formulations possess multiple beneficial properties, such as antioxidant, anti-inflammatory, antiseptic, and antibacterial effects. Therefore, lipsticks made from herbal ingredients are considered safer and more effective compared to commercially marketed alternatives.

Lipstick

Lipstick is one of the most commonly used cosmetic formulations designed to enhance the appearance of the lips and add a touch of glamour to overall makeup. Herbal lipsticks are developed to naturally highlight feminine beauty and are composed of pigments, oils, waxes, and emollients. These formulations are evaluated for various organoleptic characteristics, including melting point, Spreadability, hardness, skin compatibility, shine, and gloss, to ensure they offer a pleasing and attractive finish. In the United Kingdom, lipstick is often referred to as "lippy."

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Objectives of herbal lipstick

1. To formulate a lipstick using herbal and naturally sourced ingredients.
2. To assess the physical, chemical, and sensory characteristics of the product.
3. To determine the safety and suitability of the lipstick for topical use.
4. To design a chemical-free alternative to conventional synthetic lipsticks.
5. To explore herbal colorants and emollients for cosmetic innovation

Type of herbal lipstick**1. Ayurvedic Herbal Lipstick**

These lipsticks are made using traditional Ayurvedic herbs that naturally beautify and safeguard the lips. Ingredients such as manjistha, turmeric, and beetroot offer colour enhancement along with healthy nourishment.

2. Plant-Pigment Based Herbal Lipstick

This variety uses colorings agents derived from natural plants instead of artificial dyes. Pigments extracted from beetroot, hibiscus flowers, rose petals, and pomegranate produce safe and attractive shades.

3. Moisturizing lipstick

Moisturizing lipsticks are best for dry lips, keeping them soft and smooth with hydrating ingredients like aloe, Glycerine, and vitamin E

4. Mate lipstick

Mate lipsticks are a perfect option for women seeking a rich and elegant color finish.

These lipsticks give the lips a smooth, shine-free appearance with a velvety matte effect.

5. Long-lasting lipsticks

They are designed to stay on the lips for extended periods, typically lasting anywhere from 8 to 24 hours. Nutritive lipsticks- they are ideal for winter as they nourish and shield the lips from harsh, cold weather. **Anatomy of Lips** Lips are an important part of the face. They help us talk, eat, feel touch, and show expressions like smiling. They also add beauty to the face. Parts of the lips

1. Skin

The outside of the lips is thin and soft skin. The line separating the lip from the face skin is the vermillion border.

2. Vermilion Zone

The red, soft part of the lips. It looks red because it has many blood vessels.

3. Philtrum

The small vertical line in the middle of the upper lip, below the nose.

4. Cupid's Bow

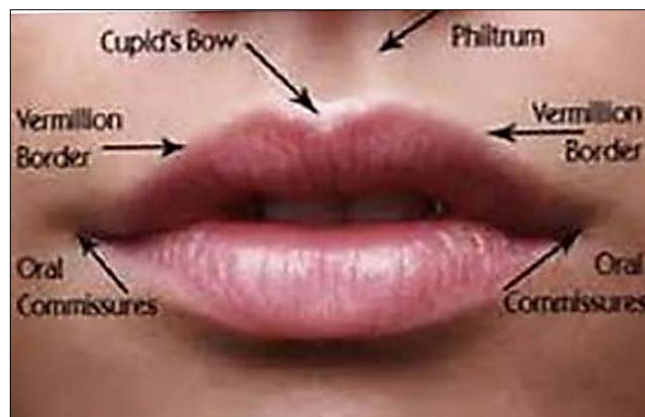
The V-shaped curve in the center of the upper lip.

5. Oral Mucosa

The inside of the lips is covered with a wet, soft layer that keeps lips moist. Small labial glands also keep lips hydrated.

6. Muscles & Nerves

A muscle called orbicularis oris helps the lips move, smile, and pout. Lips have many nerve endings, so they are very sensitive to touch and temperature.

**Advantages of herbal lipstick****1. Safe to Use**

Made with natural ingredients, so they avoid harmful chemicals.

2. Gentle on Lips

Soft on the skin and less likely to cause irritation or dryness.

3. Nourishing

Natural items like beetroot and rose provide vitamins and antioxidants for healthy lips.

4. Natural Colors

Uses plant colors instead of artificial dyes.

5. Moisturizing

Keeps lips soft and prevents cracking by holding in moisture.

6. Healing

Helps soothe dry or damaged lips with natural herbs.

7. Eco-Friendly

Biodegradable ingredients make them good for the environment.

8. Chemical-Free

No parabens, sulfates, or artificial fragrances safe for daily use.

Ingredients of herbal lipstick**1. Beeswax**

Synonyms: Yellow wax, Cera alba

Biological Source: Beeswax is produced from the honeycombs of *Apis mellifera* and other species of the *Apis* genus, which belong to the *Apidae* family.

Uses

1. Commonly used in preparing ointments, plasters, and various types of polishes.
2. Widely utilized in the cosmetic industry for making products like face creams and lipsticks.



2. Beetroot

Synonyms: Beta vulgaris, Chukander, Table beet

Biological Source: It is obtained from the fresh roots of the plant Beta vulgaris.

Family: Amaranthaceous (formerly classified under Chenopodiaceae)

Uses

1. Acts as a natural coloring agent.
2. Helps provide a glossy and attractive shine to the lips.



3. Rose

Synonyms: Vincaroseae, Catharanthus

Biological Source: Roses are obtained from the dried whole plant of Catharanthus roseus (Linn.)

Family: Apocynaceae

Uses: Widely used in perfumes, cosmetic formulations, and pharmaceutical preparations due to its pleasant fragrance and beneficial properties.



4. Coconut Oil

Synonyms: Copra oil, Coconut butter

Biological Source: Coconut oil is extracted from the dried endosperm (kernel) of the coconut fruit, obtained from Cocos nucifera L., a plant belonging to the Palmar (Arecaceae) family.

Uses: Applied topically, it helps moisturize and nourish the skin. It is also commonly incorporated into lipstick formulations for its hydrating properties.



5. Vitamin E

Synonym: Tocopherol

Biological Source: Vitamin E refers to a group of compounds naturally present in many foods.

Function

1. Vitamin E acts as a powerful antioxidant.
2. It protects body cells from damage caused by harmful free radicals
3. It supports a healthy immune system, helping the body defend against infections, viruses, and bacteria.

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Formulation for Herbal Lipstick

Ingredient	Function / Use in Formulation	Additional Role / Benefit
Beeswax	Acts as a base; provides structure and firmness	Gives smooth texture and enhances stability
Coconut oil / Castor oil / Almond oil (choose any)	Emollient; improves spreadability	Moisturizes lips and prevents dryness
Vitamin E (Tocopherol)	Antioxidant; prevents lipid oxidation	Helps repair and protect lip tissue
Beetroot extract	Natural coloring agent	Adds antioxidants and mild lip tint benefit
Rose extract / Rose water	Coloring and fragrance	Soothes lips and adds mild flavor
Essential oil (Rose / Lavender / Peppermint) (optional)	Natural fragrance	Refreshing and adds mild antibacterial effect
Aloe vera gel (optional)	Hydrating agent	Heals cracked lips and provides soothing effect

Evaluation of herbal lipstick

1. Melting point: Melting point plays a key role in lipstick formulation, as it helps determine the safe temperature range for storage. To evaluate this, the melting point of the prepared lipstick was measured using the capillary tube method.

2. Breaking point: The breaking point test shows how strong the lipstick is. The lipstick was kept sideways, one inch from the support. We added weight little by little every 30 seconds. The weight at which the lipstick broke was called the breaking point.

3. Colour and texture: The color and texture of the lipstick were checked through physical inspection.

4. pH: The pH of all the formulations was close to 7, which means they are gentle and should not cause any irritation on the lips.

5. Solubility test: The herbal lipstick was mixed with different liquids to see how well it dissolves.

6. Skin irritation test: The product was put on the skin for 10 minutes to check if it causes irritation.

7. Aging stability: The product was kept at 40°C for 1 hour, and it was then examined for changes such as bleeding and crystallization.

8. Perfume stability

The fragrance of the formulated herbal lipstick was evaluated to ensure it remained stable over time

9. Organoleptic properties: The herbal lipstick was assessed through visual observation to evaluate its sensory characteristics. Parameters such as color, texture, odor, and physical state were examined during this evaluation.

10. Surface check: The lipstick surface was inspected to make sure there were no crystals, mold, or any other contamination.

Applications of herbal lipstick

1. Can be used as a natural lip-color product offering nourishment and protection.

2. Suitable for consumers sensitive to synthetic cosmetic ingredients.
3. Useful in promoting herbal and organic cosmetic industries.
4. Supports eco-conscious and sustainable beauty product development.
5. Provides a model formulation for future herbal cosmetic research and education.

Conclusion

The herbal lipstick prepared in this study successfully incorporated plant-based ingredients to create a safe and effective cosmetic product. Beetroot extract provided natural pigmentation, while beeswax and vitamin E contributed to smooth texture, hydration, and antioxidant protection. Evaluation parameters confirmed desirable quality attributes, including appropriate melting point, ease of application, uniform color, and user-friendly consistency. The neutral pH and skin sensitivity testing demonstrated that the formulation is gentle and well-tolerated on the lips. Stability observations further indicated resistance to odor change, crystallization, and surface defects under controlled conditions. The product also delivered moisturizing benefits, helping maintain lip smoothness and preventing dryness, offering an advantage over chemical-loaded commercial formulations. These findings reinforce the value of utilizing natural ingredients for cosmetic purposes. The study concludes that herbal lipstick is a promising alternative for consumers seeking safe, nourishing, and environmentally responsible beauty products, and it offers scope for further enhancement and commercialization within the herbal cosmetics sector.

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