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Formulation and Evaluation of Herbal Lipstick

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Abstract: *The present study focuses on the formulation and evaluation of a natural herbal lipstick designed to promote natural nourishment, chemical free beauty, lip protection, healing and soothing. A Cosmetic item called herbal lipstick has pigments, oils, scents, preservatives, colors, textures, and lip protection. Lipstick composition is applied to enhance the appearance of lips The safety of natural cosmetics has led to an increase in the popularity of herbal lipsticks. Women can use and manage it with ease. Researchers have discovered that the artificial coloring compounds used in cosmetics have carcinogenic properties. Using colorants from natural sources such beetroot extract, the goal of this study was to prepare and assess herbal lipsticks. Herbal lipstick was created using a variety of natural components, including vanilla essence, castor oil, beeswax, lemon juice, orange essence, Shikakai powder, beet root extract.*

Keywords: Herbal lipstick, Cosmetic, Skin, Moisturizes

I. INTRODUCTION

HERBAL COSMATIC: Products made with a variety of approved cosmetic ingredients, including one or more herbal compounds, are known as herbal cosmetics. utilized to offer specific aesthetic advantages. Another name for them is herbal cosmetics. The newest thing on the fashion and beauty scene is herbal makeup. The market for the herbal cosmetics business is expanding, and its goods are being sold all over the world. The newest thing on the fashion and beauty scene is herbal makeup. The market for herbal cosmetics is expanding. graph showing its market and the things it sells worldwide.{2}

BENEFITS OF HERBAL LIPSTICK: This is because natural products give the body nutrients, improve health, and give satisfaction because they don't contain synthetic chemicals and have fewer negative effects than synthetic cosmetics. A cosmetic product called lipstick is applied to the lips to color them and shield them from the outside world. Lip coloring in an old-fashioned practice date back in time to the primordial era. The usage of herbal products has grown in recent years, and the range of color, texture, and gloss options has expanded. This is evident from the fact that lipstick is sold in a hundred different shades to meet the most recent demands of ladies. When consumed by humans, the dyes that give lipsticks color are extremely toxic. The primary component used to make synthetic dyes, coal tars, can result in rashes, allergies, nausea, and lip drying.{2}

LIPSTICK: Lipsticks are one of the most widely used cosmetic products. Social, psychological, and therapeutic benefits can be attained from using lipstick. The beauty and attractiveness of a person are enhanced as lipsticks Colour the lips and protect them from the external environment. However, current lip care products not only emphasize aesthetic value but also preferably have added medicinal value to the lip of consumers. This led to the emergence in the market of medicated lipsticks with active medicinal ingredients. The medicated lipsticks may provide protection against infections of bacteria due to the presence of an active medicinal ingredient in the formulation. This function adds on to the existing role of lipsticks, which provide moisture and emollient action to prevent cracking and chapping of the lips Recently the use of herbs in the production of cosmeceuticals products for personal care has been on the rise.{3}

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Different Types of Lipstick and their Uses:

1. Moisturizing Lipstick: Moisturizing lipsticks are recommended for people with dry lips since they maintain lips smooth and supple. These lipsticks' hydrating properties come from components like aloe, glycerin, and vitamin E. Wet and incredibly shine lips are two more wonderful benefits of using moisturizing lipsticks.{4}

2. Satin and sheer lipstick: These lipsticks guarantee that lips are glossy and shiny while also moisturizing 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. Lipsticks with all components also have the requirement to be answered several times.{4}

3. Mate Lipstick: Mate lipsticks are the ideal choice for ladies looking for a lovely, vibrant tone. These lipsticks provide the appearance of having matte, unlustrous lips.{5}

Advantages of herbal lipstick:

1. The natural lipstick contains only natural ingredients that are safe to use.{6}
2. They also include organic nutrients that maintain the health of lips.{6}

Disadvantages of Herbal lipstick:

1. They are difficult to hide taste and Odour.{7}
2. Manufacturing process is time consuming and complicated.{7}
3. Short shelf life.{7} 4. Color fades quickly.{7}

List of drug use in formulation

Sr.no:	INGREDIENT	USES	FAMILY	COLLECTION OF HERB
1	CASTOR OIL	Used as a laxative, hair care, skin care	Euphorbiaceae	Purchase from market
2	BEES WAX	Moisturizer and protectant	Apidae	Collect from lab
3	BEATROOT EXTRACT	Used as a cosmetic food product	Amaranthaceae	Purchase form market
4	SHIKAKAEI POWDER	Haie care, wound healing	Fabaceae	Purchase form market
5	LEMON OIL	Antimicrobial, anti- inflammatory	Rutaceae	Purchase from online
6	VANILLA ESSENSE	Used as a flavoring agent, cosmetic.	Orchidaceous, citrus	Purchase from online
7	ORANGE ESSENCE	Used as a flavoring agent, cosmetic	Orchidaceous, citrus	Purchase from online

Castor Oil

Synonym: Oleum Ricini, Castor Bean Oil, Palma Christi Oi.

Biological Source: Castor oil is the fixed oil obtained from the seeds of Ricinus communis Linn. Family: Euphorbiaceae

Chemical Constituents: Ricin oleic acid (~ 85–90%) –major active component.

Uses: Used as a purgative / stimulant laxative (internally).{9}

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Beeswax:

Synonym: Cera alba (White beeswax), Cera Flava (Yellow beeswax), Apies wax.
Biological Source: Beeswax is a purified wax obtained from the honeycomb of the hive of the honeybee, Apis mellifera Linn. Family: Apidae (insect family of the honeybee – not a plant.
Chemical Constituents: Myricyl palmitate ($C_{30}H_{60}O_2$).{9}

BEET ROOT EXTRACT:

Synonym: Red beet, beet.
Biological Source: Beetroot is obtained from the roots of the plant Beta vulgaris Linn.
Family: Amaranthaceae (formerly Chenopodiaceae).
Uses: Natural coloring agent (gives red/pink Colour due to Betalains).
Chemical constituent: betalanins, betanin, isobetanin.{10}

Lemon Oil:

Synonym: Citrus Oil, Lemon Essential Oil.
Biological Source: Lemon oil is obtained from the fresh peel of the fruit of Citrus limon (Linn.) Burm.f. Family: Rutaceae.
Chemical constituents: β-Pinene, γ-Terpinene
Uses: Antioxidant, Antimicrobial.{11}

Vanilla Essence

Synonyms: Vanilla, Vanilla extract, Essence of Vanilla.
Biological Source: Vanilla essence is obtained from the cured and dried fermented pods (beans) of the plant Vanilla planifolia Andrews. Family: Orchidaceous
Chemical Constituents: Vanillin (main active compound) – $C_8H_8O_3$, Eugenol.

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Uses: Mild stimulant and carminative, Used in aromatherapy and perfumery.{11}

Shikakai:

Synonyms: English name: Shikakai, Soap pod, Ayurvedic name: Shikakai. Biological Source: Shikakai consists of the dried pods, leaves, and bark of Acacia concinna (Willd.) DC., a climbing shrub native to tropical forests of central and southern India. Family: Fabaceae (Leguminosae).
Chemical Constituent: Saponins (about 20%) responsible for the foaming and cleansing property.
Uses: Natural hair cleanser and conditioner, promotes hair growth, reduces dandruff.{11}

Orange Essence:

Synonym: Sweet Orange Oil, Citrus Oil, Orange Peel Oil, Orange Essential Oil.
Biological Source: Obtained from the fresh peels of Citrus sinensis (L.) Osbeck. Family: Rutaceae.
Chemical Constituents: (+)-Limonene, β- Myrcene
Uses: Flavoring in beverages, confectionery, and pharmaceuticals, Fragrance in perfumes, soaps, and cosmetic. {12}

Preparation of formulation: -

SR. NO	INGREDIENTS	F1	F2	F3	F4
1	Castor oil	4gm	3.5gm	2gm	4gm
2	Bees wax	3.5gm	3gm	4gm	3.2gm
3	Beet root extract	1.5gm	1gm	1.2gm	1.3gm
4	Shikakai powder	0.4gm	0.5gm	0.3gm	0.2gm

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5	Lemon oil	0.8gm	0.6gm	0.5gm	0.7gm
6	Vanilla essence	1ml	0.3 ml	1ml	0.8ml
7	Orange essence	1ml	0.5ml	0.4ml	0.7ml

• METHODS

BEET ROOT EXTRACT:

PROCEDURE:

◇ Step 1: Prepare Beetroot

• Wash and peel 1 medium-sized fresh beetroot.
• Grate or chop it finely to increase surface area.
• Pour the mixture through a cheesecloth or fine sieve into a clean bowl.
• Squeeze or press to extract as much liquid as possible.{13}

◇ Step 2: Storage:

• Pour the beetroot extract into a clean dark glass bottle or airtight container Store in the refrigerator. Add a few drops of vitamin E oil if you'd like to extend shelf.{13}

METHOD OF PREPARATION

1. Melt Wax and Oil
• In a double boiler, add:
o 5g beeswax
o 5ml castor oil
• Gently heat until completely melted.
• Stir continuously to blend.
• Do not overheat. Remove from heat once fully melted.{14}
2. Add Color and Herbal Ingredients
• While still warm (but not too hot),
• add: 2-3ml beetroot extract (liquid), 1 g Shikakai powder
• Stir thoroughly to ensure even dispersion.
• Shikakai adds a slightly earthy tone and mild exfoliating texture.{14}
3. Add Flavor & Aroma
• Once the mixture cools slightly (around 40–45°C), add:2 drop orange essence and 2 drop lemon oil -(Optional) 1 drop of Vitamin E oil.{15}
4. Pour Into Molds
• Pour the warm mixture into: Lipstick molds, Lip balm tubes, Small cosmetic jars
• Let it set at room temperature or refrigerate for 30 minutes.{15}

EVALUATION PARAMETER OF LIPSTICKS:

1. Physical Appearance: - The physical appearance was visually checked for Appearance, colour, odour, Texture, Melting point, Spreadability of prepared base lipstick formulations.

Appearance: - Colour: Dark Pink, Odour: Pleasant and natural, Texture: Smooth, creamy

Parameters	F1	F2	F3	F4
Colour	Pink	Pink	Pink	Dark pink
Odour	Pleasant	Pleasant	Pleasant	Pleasant
Texture	Rough	Soft, creamy	Smooth, creamy	Smooth, creamy

DESCRIPTION: All Formulations (F1 to F4) exhibited pleasant Odour, slight Colour variation indicating uniform texture, stability and acceptable sensory properties.

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2. Determination of PH: - We use "determination" because we are quantitatively measuring the pH of the lipstick to ensure safety, stability, and effectiveness.

Parameter	F1	F2	F3	F4
PH	5	5.2	5.5	5.5

DESCRIPTION: The PH of all formulations ranges between 5 to 5.5. which is the ideal range for herbal lipstick application ensuring good compatibility.

3. Spreadability: - We determine Spreadability to quantitatively evaluate how well the lipstick will glide on lips, ensuring comfort, uniform application, and product quality.

Parameter	F1	F2	F3	F4
Spreadability	Rough	Slightly firmer	smooth	smooth

DESCRIPTION: F1 batch showed rough Spreadability and F2 batch showed slightly firmer while F3, F4 and batches exhibited good Spreadability indicating better uniformity, ease of application and enhanced appeal of the formulations.
Hardness Test (penetrometer): - We determine hardness to quantitatively evaluate the mechanical strength of herbal lipstick, ensuring stability, safety, and ease of application, and to confirm the correct wax–oil ratio in the formulation.

parameter	F1	F2	F3	F4
Hardness Test	7.0-10.0mm	5.0-7.0mm	3.5-5.0mm	3.5-5.0mm

DESCRIPTION: The hardness test for herbal lipstick was determining the range between 3.5- 5.0mm and 7.0-10.0mm. The hardness test of herbal lipstick is performed to determine the mechanical strength, firmness, and resistance to breaking
Melting point: - We determine the melting point to quantitatively evaluate thermal stability and ensure the lipstick maintains its shape, consistency, and usability under normal storage and application conditions.

Parameter	F1	F2	F3	F4
Melting point	60-61 °C	59-62°C	61°C	62-64°C

DESCRIPTION: The melting point test of herbal lipstick is performed to determine the temperature at which the lipstick begins to soften and melt. It is an important evaluation parameter because melting point indicates the thermal stability of the formulation.60 – 70 °C.

6. Skin irritation test: - We determine skin irritation to ensure the herbal lipstick is safe for human use, avoid allergic reactions, and confirm the compatibility of all herbal and natural ingredients with sensitive lip skin.

Parameter	F1	F2	F3	F4
Skin irritation test	NO	NO	NO	NO

DESCRIPTION:
F1, F2, F3, and F4 showed no signs of irritation, conforming that the herbal ingredients used are safe for topical application and well tolerated by the sink.
Perfume stability: - We determine perfume stability to ensure that the herbal lipstick retains its fragrance throughout shelf life, maintains consumer appeal, and prevents formation of unpleasant or unsafe odor changes.

Parameter	F1	F2	F3	F4
Perfume stability	Good	Good	Good	Good

DESCRIPTION:
It gives a Perfume stability refers to the ability of a fragrance formulation to maintain its physical, chemical, and olfactory (smell) characteristics over time when exposed to different environmental conditions.

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8. Stability Study-

The 5-week stability study showed no significant changes in colour, odour, Texture indicating good stability of the herbal lipstick formulation.

WEEKS	1 WEEKS	2 WEEKS	3 WEEKS	4 WEEKS	5 WEEKS
PARAMETER	F3	F3	F3	F3	F3
COLOUR	Pink	Pink	Pink	Pink	Pink
ODOUR	Pleasant	Pleasant	Pleasant	Pleasant	Pleasant
TEXTURE	Smooth, creamy	Smooth, creamy	Smooth, creamy	Smooth, creamy	Smooth, creamy
PH	5.5	5.5	5.5	5.5	5.5
SPREADABILITY	Good	Good	Good	Good	Good
HAEDNESS TEST	3.5-5.0mm	3.5-5.0mm	3.5-5.0mm	3.5-5.0mm	3.5-5.0mm
MELTING POINT	61°C	61°C	61°C	61°C	61°C
SKIN IRRITATION TEST	NO	NO	NO	NO	NO
PERFUME STABILITY	Good	Good	Good	Good	Good

DESCRIPTION:

The table shows 5-week stability results of formulation F3.

Colour and Odour stayed stability pink and pleasant and pH remained 5.5.

No skin irritation occurred, Spreadability, hardness test, perfume stability improved after the 1st week.

Summary

The formulated herbal lipstick was prepared using natural ingredients such as castor oil, bees wax, beet root extract, Shikakai powder, lemon oil, vanilla essence, and orange oil. Castor oil acts as a natural moisturizer that keeps the lips soft and hydrated. Beeswax provides structure, firmness, and a smooth texture to the lipstick. Beetroot extract serves as a natural coloring agent, giving the lipstick an appealing pinkish-red hue. Shikakai powder adds mild cleansing and antioxidant properties that help maintain healthy lips. Lemon oil and orange oil contribute refreshing fragrance and natural vitamin C, which help lighten pigmentation and rejuvenate the lips. Vanilla essence enhances the aroma and improves the overall sensory appeal of the product.

This herbal formulation offers a chemical-free, skin-friendly, and eco-safe alternative to synthetic lipsticks, combining beauty with natural lip care.

II. CONCLUSION

The herbal lipstick formulated using castor oil, beeswax, beetroot extract, Shikakai powder, lemon oil, vanilla essence, and orange oil demonstrated promising cosmetic and functional properties. Castor oil provided smooth texture and Spreadability, while beeswax contributed to structural integrity and stability. Beetroot extract acted as a natural, safe colorant, giving the lipstick an appealing shade. Shikakai powder enhanced antioxidant properties and added mild protective benefits for the lips. Essential oils such as lemon, orange, and vanilla improved aroma, added mild antimicrobial activity, and increased user acceptability.

Evaluation parameters including melting point, Spreadability, stability studies, pH, skin irritation tests, and color intensity showed that the formulation was stable, non-irritant, and aesthetically pleasing. The product maintained uniform color, had acceptable hardness, and displayed no phase separation or microbial growth during the study period.

Overall, the developed herbal lipstick can be considered a safe, effective, and consumer-friendly alternative to synthetic lip products, offering natural color, moisturization, and added therapeutic benefits from plant-based ingredients.

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