

FORMULATION AND EVALAUTION OF HERBAL LIPSTICK

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ABSTRACT

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 carrot, beetroot, turmeric, tomatoes, pomegranate, and cocoa, 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, carnauba wax, white soft paraffin, strawberry essence, vitamin e, and lemon juice. Lipsticks made of herbs have few adverse effects. The natural nutrients or chemicals in the herbal lipstick make it safe to use and maintain healthy lips. The primary subjects of this review are lipstick's natural components, formulation, extracts, and flaws. The reason we use herbal lipstick is because it has no negative effects. In addition, criteria such as smoothness, greatness, melting point, breaking point, and ph are being evaluated. Lipsticks made of herbs have few adverse effects. the natural nutrients or chemicals in the herbal lipstick make it safe to use and maintain healthy lips. the primary subjects of this review are lipstick's natural components, formulation, extracts, and flaws. the reason we use herbal lipstick is because it has no negative effects. In addition, criteria such as smoothness, greatness, melting point, breaking point, and pH are being evaluated.

KEYWORDS: Herbal lipstick, natural colorants, pomegranate powder, beetroot powder, rosepowder, evaluation, formulation.

INTRODUCTION

Herbal cosmetics are formulations that incorporate natural ingredients derived from plants and botanicals. These products are gaining popularity as consumers seek safer and more sustainable alternatives to conventional cosmetics. Herbal lipsticks, in particular, are favored for their non-toxic nature, skin compatibility, and added benefits such as hydration and nourishment. The word cosmetic is defined as substance which is beautified and hygiene the skin. Herbal cosmetics have a growing demand worldwide and it is an invaluable gift of nature. There is a wide range of Herbal products to satisfy the beauty regime.^[1] The drawback of the personal health care system is the side effects of synthetic preparation. Hence, people are opting for herbal medicine.^[2] There are various shades are available in market. In present days use of cosmetic products has increased, and choice of color shades, textures, This can be observed from the fact that lipstick is being marketed in hundreds of shades of colors to satisfy the increasing demand., Sometime during the food the lipstick is eaten by women therefor the colouring harmful pigments were also gone in stomach with food, which may cause harmful effects, so to overcome these situation, the herbal lipsticks are formulated.^[3]

As we can see the herbal cosmetics have minimum side effects or no side effects. In present work there is lipstick which is prepared from pomegranate Pigment and Sindur. The pomegranate is for pink color and Sinduri is use for orange color.^[4] The ingredients are use in herbal lipstick are give benefit to lips like lemon juice is use for as an antioxidant and as well as vitamin E capsule is also use as an antioxidant. The ideal characteristics of lipsticks are that it should be non-irritating and nontoxic should be stable both physically and chemically, should be free from gritty particles.^[30] The herbs which are used in cosmetic preparation have varieties of properties like antioxidant, anti-inflammatory, antiseptic, antibacterial and Moisturizing activity.^[5] Thus the lipsticks which are made from herbs are safe and effective than marketed products.^[31]

Anatomy of lips

Lips are a prominent and vital part of the human face, playing an essential role in facial expression, speech, sensation, and ingestion.^[32] They are not only functional but also hold significant aesthetic and cultural value, influencing perceptions of beauty and health.^[33]

Lip anatomy consists of a number of structures that affect both the function and appearance of the lip.^[6]

Skin: The outer layer of the lips is skin, just like the rest of the body. Lip skin, on the other hand, is more delicate and thinner^[34]. The visible line dividing the vermilion-colored portion of the lips from the surrounding skin is known as the vermilion border.^[6]

Vermilion zone: The reddish region of the lips is known as the vermilion zone. It is crimson in color because it has more blood vessels than normal.^[35,36]

Philtrum: A vertical groove or indentation in the middle of the top lip that continues from the base is known as a philtrum.^[37]

Cupid's: The cupid's bow is the double curve or V-shaped area in the middle of the top lip.

Oral mucosa: The inner surface of the lips is protected by a thin, moist layer of tissue called the oral mucosa. It is separate from the outer skin and aids in maintaining the moisture of the lips. To keep the lips moisturized and to

facilitate speech and eating, lips include small glands called labia.^[7]



Nerve ending: One of the many muscles that make up the lips and are in charge of their movement and expression is the orbicularis oris, which surrounds the mouth and facilitates smiling and puckering.^[38] Lips are extremely sensitive to touch, warmth, and pain due to their high density of nerve endings.^[39]

Different lip problems

Lip problems include lip dryness, cracking, pain, numbness, sores and swelling.^[40] There are many causes of lip symptoms; they range from mild to serious. The duration and course of lip symptoms vary widely, depending on the cause.^[41] Lip Problems occurs as a result of injury, such as biting lips, burning them with hot food.^[42] Even a common infection can cause lip symptoms. Diseases or conditions that affect the nerves and muscles, including nerve damage or neuropathy, can be associated with symptoms that involve the lips.^[43,44] Lip symptoms may also be the result of cold and dry weather, infection, nutritional deficiencies, or medication side effects. Suitable drug candidates for medicated lipsticks are locally acting on the lips, soothing, anti-irritant agent, skin protectant, keratolytic agent, steroids, antibiotics, and anti-inflammatory agent.^[8]

Herbal lipstick

Herbal lipsticks are lip color products made using natural waxes, oils, and colorants derived from plants^[45]. They are free from artificial dyes, parabens, heavy metals, and petroleum derivatives. Natural colorants, such as pomegranate peel powder, beetroot powder, and rose petal powder, offer a safe and effective alternative to synthetic pigments.^[9]

These plant-based ingredients not only impart color but also help nourish and protect the lips. Pomegranate has antioxidant and anti-aging properties, beetroot is rich in betalains for vibrant pigmentation, and rose petals soothe and hydrate the skin. These herbal extracts add therapeutic value to the cosmetic product.^[10]

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 cur cumin and pomegranate arils extract.^[46]

Curcumin having yellow color and pomegranate arils extract having faint pink color, hence, combination of both gives dark color formulation.^[47] It gives moisturizer effect on lips and these possibly reduce side effects & cost of lipstick.^[11]

The aim of the work was to formulate and evaluate a herbal lipstick containing natural antifungal natural agent (Cur cumin) To evaluate the lipstick for various parameters.^[48] 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.^[50] 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.^[50] 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.^[12]

Ideal properties of herbal lipsticks

1. Smooth and easy to apply.
2. Non-irritant and non-toxic.
3. It should have required plasticity
4. It should be long lasting.
5. Should have attractive color and shine.
6. Free from grittiness and should be non-drying.
7. It should have required plasticity.
8. It should have pleasant taste, odor and flavor.
9. Should not lose its smooth and shiny appearance during storage.
10. Stable during its shelf life- means free from biocompatibility.
11. It should not melt or harden within reasonable variation of climatic temperature.

Herbal lipstick benefits

- Natural Ingredients – Made from plant-based components like fruit powders, herbs, and natural oils, reducing the risk of harmful side effects.
- Chemical-Free – Free from synthetic dyes, preservatives, and petroleum-based ingredients that can irritate sensitive lips.
- Moisturizing Properties – Contains natural moisturizers like beeswax, shea butter, and coconut oil that help keep lips soft and hydrated.^[13]
- Antioxidant-Rich – Herbal ingredients like pomegranate and beetroot are rich in antioxidants, which help protect lips from damage caused by free radicals.
- Safe for Long-Term Use – Gentle on the skin, making them suitable for regular or daily use without causing pigmentation or dryness.
- Eco-Friendly – Biodegradable and less polluting than conventional lipsticks, supporting sustainable beauty practices.
- Healing Properties – Herbal components like rose and aloe-Vera have soothing and healing effects on cracked or chapped lips.
- No Animal Testing – Most herbal lipsticks are cruelty-free, appealing to ethically conscious consumers.
- Naturally Tinted – Provide a natural color payoff that enhances lip appearance without artificial colorants.
- Hypoallergenic – Lower chances of allergic reactions due to the absence of harsh chemicals.

Advantages of Herbal lipsticks

- **Safe and Non-Toxic**- Herbal lipsticks are formulated using natural ingredients, minimizing exposure to toxic chemicals commonly found in synthetic lipsticks.

- **Skin-Friendly-** The use of herbal powders and natural oils makes these lipsticks gentle on the lips, reducing the chances of allergic reactions, irritation, or dryness.^[14]
- **Rich in Nutrients-** Herbal ingredients like beetroot, pomegranate, and rose are rich in vitamins, minerals, and antioxidants that nourish and protect the lips.
- **Natural Colorants-** These lipsticks use plant-based colorants, avoiding synthetic dyes that may be harmful or carcinogenic with prolonged use.^[51]
- **Moisturizing Properties-** Many herbal lipsticks contain natural emollients that help retain moisture, preventing lip cracking and promoting softness.
- **Healing and Therapeutic Effects-** Herbs used in formulations often have healing properties that help in soothing chapped or inflamed lips.^[14]
- **Environmentally Sustainable** - Herbal formulations are biodegradable and eco-friendly, contributing to sustainable cosmetic production.
- **No Harmful Additives-** Free from parabens, sulfates, artificial fragrances, and preservatives, making them safer for daily use.

Importance of Natural Pigments in Cosmetics

Synthetic dyes used in conventional lipsticks may cause allergic reactions and long-term health risks. Natural pigments, on the other hand, are biodegradable and rich in nutrients.^[52] They not only provide color but also offer additional therapeutic properties. Their use aligns with the rising demand for organic, eco- friendly, and cruelty-free products in the cosmetic industry.^[15]

1. Pomegranate

Name	Pomegranate
Synonyms	Anar, Pomegranate
Family	Lythraceae
Biological source	Punicagranatumplant
Genus	Punica
Uses	Anti-oxidant, Anti-inflammatory, Anti- Microbial

Geographical source- The pomegranate is believed to be native to a region encompassing modern-day Iran and parts of Central Asia, including Afghanistan and Pakistan.^[53]

Physical Appearance- Pomegranates are berry-like fruits with a leathery, often reddish-pink or deep red skin, enclosing many chambers filled with juicy, ruby-red arils (the edible pulp) and seeds.^[54]

Climatic Conditions- Pomegranate thrives in semi-arid, hot, and dry climates with mild winters, requiring hot, dry weather during fruit development and ripening, and tolerating temperatures up to 45-48°C.^[15]

Chemical constituents

- Anthocyanins
- Fatty acids
- Phenolic compounds
- Ellagic acid
- Organic acid

Pharmacological Uses

- Anti-diabetic: Pomegranate consumption may improve gut micro biota, potentially preventing obesity and diabetes.
- Anti-tumor: Pomegranate contains compounds with anti-cancer properties.
- Anti-inflammatory: Pomegranate possesses anti-inflammatory properties.^[55]
- Anti-bacterial: Pomegranate has antimicrobial properties that can fight oral germs, potentially preventing gum disease and bad breath.
- Heart Health: Pomegranate juice may lower systolic blood pressure.^[16]

2. BEET ROOT

Name	Beetroot
Synonyms	Beta Vulgarisrubra, Chukandar, Table beet
Biological source	It consists of fresh root of <u>Beta vulgaris</u>
Family	Amaranthaceae
Genus	Beta
Uses	Colouring agent, Glossy Appearance to Lips

Geographical Source- Beet root, scientifically known as Beta vulgarism, is believed to have originated along the coasts of the Mediterranean Sea with its wild form sex tending east ward as far as Indonesia and west ward along the Atlantic coasts.^[56]

Physical Appearance Beetroots are typically round or oval root vegetables with a smooth, firm skin and flesh that can range in color from dark purplish-red to nearly white or orange, depending on the variety.^[16]

Climatic Conditions- Beetroot, a cool-weather crop, thrives in temperatures between 15°C and 25°C (50-75°F) and requires well- drained, deep, and organic-rich soil with a pH between 6.0 and 7.5.^[66]

Chemical Constituents Beetroot (Beta vulgaris) contains many biologically active chemical constituents, including betalains, carotenoids, phenols, flavonoids, and inorganic nitrate.^[67] It's also a rich source of minerals like potassium, calcium, iron, and magnesium.^[57]

Pharmacological Uses

Nitrates and Blood Pressure

Improved Blood Flow

Reduced Risk of Heart Disease.^[68]

3. ROSE

Name	Rose
Synonyms	Vincaroseae, Catharanthus, Madagascar Peri wrinkle
Biological Source	Rose is the dried entire plant of <u>Catharanthus roseus</u> linn
Family	Apocynaceae
Genus	Catharanthus
Uses	Perfumes, Cosmetic Pharmaceuticals, Inflammation ^[69,70]

Geographical Source-Roses, belonging to the genus *Rosa* within the rosaceous family, are native to the temperate regions of the Northern Hemisphere, with the majority of species originating in Asia, followed by North America and Europe.^[17]

Physical Appearance Roses are typically shrubs or climbing plants with showy, often fragrant flowers and stems usually covered in prickles or thorns, with leaves featuring too the dredges and oval leaflets ^[71]. They come in a wide variety of colors and sizes, with some having multiple petals and others having only five.^[58,59]

Climatic conditions- Roses grow best in climates with moderate temperatures, lots of light and moderate humidity.^[60]

Chemical Constituents Roses contain a variety of chemical constituents, including flavonoids, phenolic acids, organic acids, and vitamins.^[61]

Pharmacological Uses

- Anti-inflammatory
- Anti oxidant
- Anti microbial
- Anti-aging
- Anti depressant and Anti-anxiety ^[72]

MATERIALS

Various materials and their roles in herbal lipstick formulation are listed in table

List of ingredients use in the formulation of herbal lipstick

Sr. NO	Common Name	Role
1.	Beeswax	Lubricating agent Lock in moisture
2.	Beet root	Heals dry and chapped lips Getting rid of darker lips brighter and lighter.
3.	Rose oil	Fragrances and perfuming agent.
4.	Lemon juice	Antioxidant.
5.	Coconut oil	Protective barrier to keep lips soft and supple.
6.	Vitamin E	Preservative, Hydrating agent
7.	Almond oil	Improve natural color ^[73,74]

METHOD OF PREPARATION

Preparation of plant base powder

Drying Process: Fresh beetroot, pomegranate peels, and rose petals were collected, cleaned, and dried using a hot air oven at 40–60°C until completely moisture-free.^[62]

Grinding: The dried materials were then finely ground using a grinder to obtain beetroot powder, pomegranate powder, and rose powder.^[17]

Sieving: The powders were passed through a fine mesh to get a uniform texture suitable for incorporation into the lipstick base ^[63]. **Drying Process:** Fresh beetroot, pomegranate peels, and rose petals were collected, cleaned, and dried using a hot air oven at 40–60°C until completely moisture-free.^[18]

Preparation of herbal lipstick

Melting Base Ingredients

In a beaker, beeswax, paraffin wax, and shea butter were weighed and melted together using a heating mantle.^[27]

Addition of herbal powder

After melting, the herbal powders(pomegranate,beetroot,rose) were added in desired proportions and stirred thoroughly to ensure uniform mixing.^[18]

Flavoring: A few drops of essential oil (like lemon or rose) were added for fragrance

Molding: The mixture was poured into lipstick molds while still warm and allowed to cool and solidify at room temperature.^[26]

Molten mixer poured into lipstick mould.

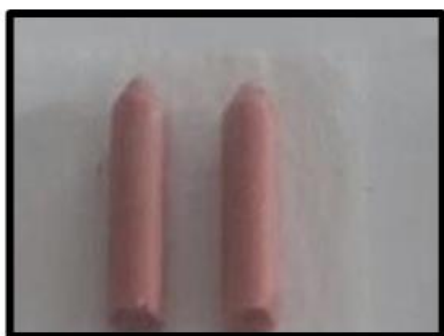


Demolding: Once fully solidified, the lipsticks were carefully removed from the molds and stored in suitable containers.^[25]

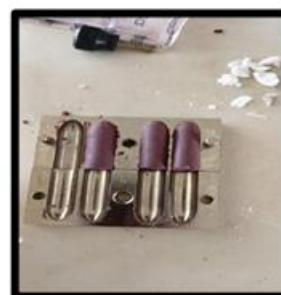
FORMULATION OF HERBAL LIPSTICK

Ingredient	Quantity	
	F1	F2
Paraffin wax	0.7gm	1gm
Beeswax	0.7gm	1gm
Coconut	5ml	8ml
Lemon oil	3ml	5ml
Pomegranate	10gm	15gm
Acacia	6gm	8gm
Vitamin-E	Q.S	Q.S
Beetroot powder	20gm	25gm

F1



F2



Evaluation of herbal lipstick

Evaluation of the formulated herbal lipsticks is essential to assess their physicochemical properties, aesthetic appeal, stability, and performance. Various parameters were studied using standard protocols to ensure the lipsticks meet desired quality standards.^[64]

- i. **Organoleptic properties:-** Visual inspection methods are used to evaluate the organoleptic properties of the herbal lipstick. Color, texture, order and state were examined during this assessment.^[19]
- ii. **Absorption test:-** It was done by applying the lipstick on to the skin and rub until it gets completely absorbed.^[24]
- iii. **pH test:-** The pH values of this purely herbal lipstick were determined by using pH meter.^[65]
- iv. **Breaking point:-** Breaking point analysis was used to assess lipstick strength. The lipstick was positioned one inch from the edge of support and held horizontally in a socket. The weight was progressively increased by a predetermined amount (10 gm) every 30 seconds, with the weight at which it broke being regarded as the breaking point.^[20]
- v. **Perfume Stability:** After 5 days, the formulated lipstick was tested to determine its fragrance.
- vi. **Skin irritation test:** The Skin Irritation Test (SIT) is a non-animal, in vitro test that is intended to detect substances and mixtures that have the potential to cause moderate skin irritation.^[28]
- vii. **Aging Stability:** For one hour, prepared herbal lipsticks were kept in the cold (4oC), at room temperature (20–25oC), and at a high temperature (30–40oC). Many characteristics were noted, including bleeding, striping, catering, and flowering.^[21]
- viii. **Spreadability:** It was tested by repeatedly applying the lipstick onto the glass slide to observe the uniformity in the formulation of the protective layer and whether the stick fragmented, deformed, or broke during application.^[22]
- ix. **Hardness or Breaking Point:-** Tested by applying pressure at one end and checking the force at which the lipstick breaks. Indicates product stability during handling and use.^[23]

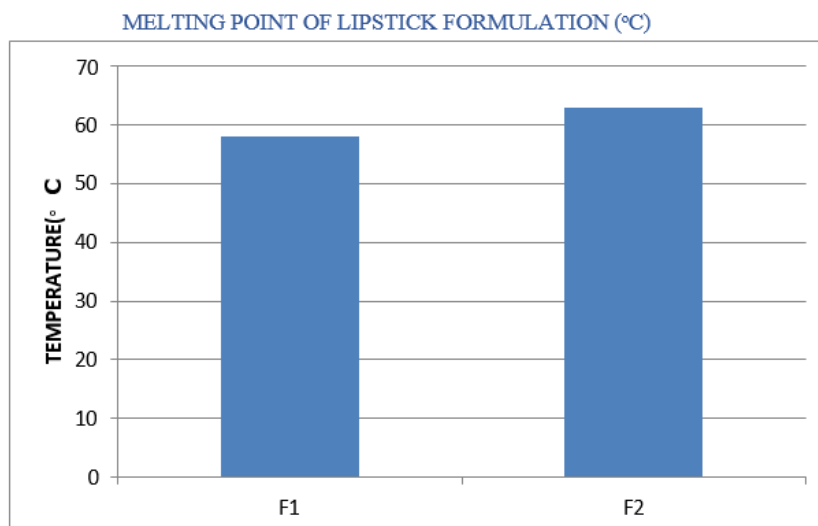
RESULT

The herbal lipstick was formulated by using various types of ingredients such as Pomegranate powder, Beetroot Powder, rose powder, Coconut oil, Vitamin E, rose oil, lemon juice, Beeswax, paraffin wax. All three herbs used in formulation of herbal lipstick contain antimicrobial and flavoring properties to enhance the beauty of face and moisture to lips. Vitamin E has anti-aging property.

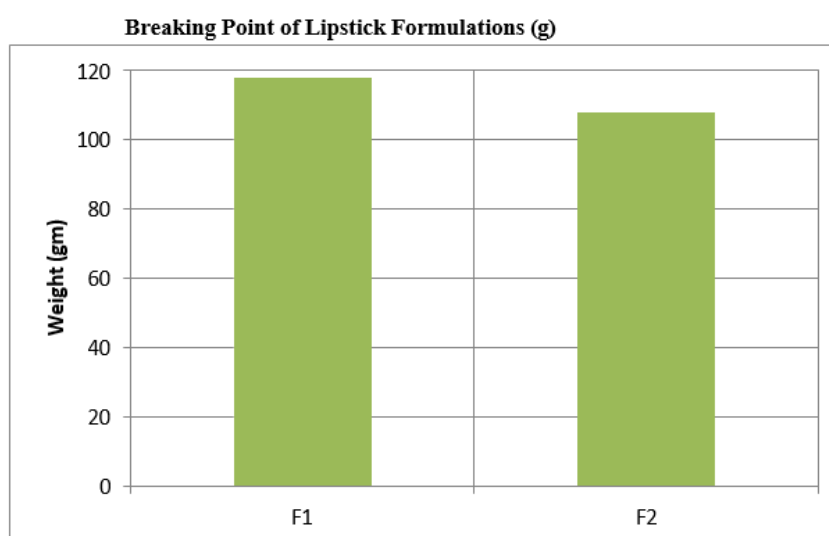
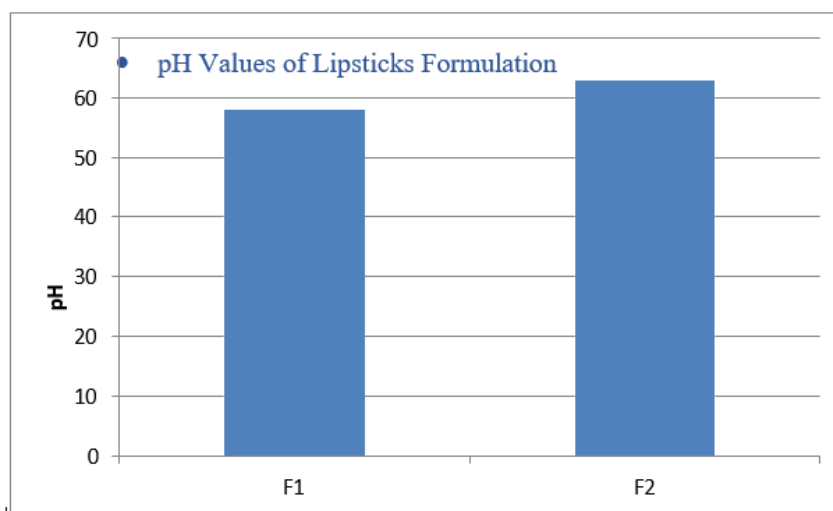
The herbal lipstick was evaluated to various parameters such as Physiochemical parameter , pH, wash ability, skin irritancy, Smoothness, melting point, breaking point etc Used to check the quality n performance of formulation. The effect of different ingredients in the formulation has the Physiochemical property of formulation such as color is light pink, odor is pleasant and state is solid. The pH of formulation is neutral and wash ability is also good.

THE RESULT OF EVALUATION PARAMETER OF HERBAL LIPSTICK

Sr. No	Parameter	F-1	F-2
1	Color	Light Pink	Dark Red
2	pH	5.9	6.0
3	Skin Irritation Test	No	No
4	Melting Point	58-60°C	60-62°C
5	Breaking Point	27gm	30gm
6	Force Application	Easy	Easy
7	Perfume Stability	++	++++
8	Surface Anomalies	No Defect	No Defect
9	Aging Stability	Smooth	Smooth
10	Solubility Test	Chloroform	Chloroform

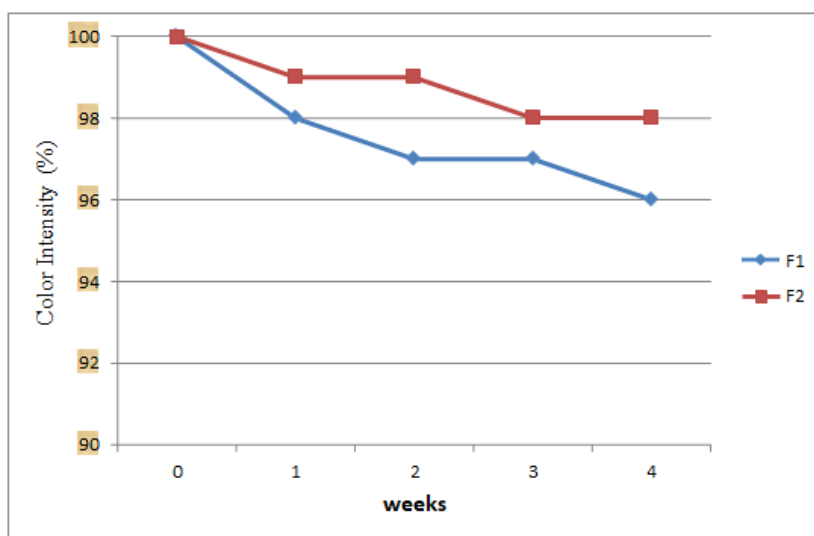


Melting point of lipstick.



Breaking point of lipstick.

• COLOR RETENTION OVER 4 WEEKS



However from the above chart it depicts that the herbal lipstick with F2 is better as compared to F1. Hence, from present investigation it is concluded that this formulated herbal lipstick has better option to women with minimal side effects through a detail chemical trial maybe done to access the formulation for better efficacy.

CONCLUSION

The formulated herbal lipsticks utilizing pomegranate powder, beetroot powder, and rose powder as natural colorants demonstrated promising results in terms of physical properties, safety, and performance. These findings suggest that such natural ingredients can be effectively used in cosmetic formulations to provide products that are both aesthetically pleasing and beneficial for lip care. Further studies on long-term stability and consumer acceptance would be valuable to support commercialization.

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. 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. Wrinkles, Fine lines, can be effectively controlled by using natural lips. In this work, we found excellent properties of the herbal lipstick and further studies are needed to be performed to ascertain more useful benefits of herbal lipstick as cosmetics. Natural remedies are accepted nowadays with open hands as they are safer with fewer side effects than the chemical based products. Herbal formulations are required in large amounts to fulfill the needs of the growing world market. It is an effective attempt to formulate the herbal lipstick containing different natural nutrients.

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