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A Review on Herbal Lipstick Incorporated Naturaloils, Waxes and Colorant

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Abstract: *Natural lipstick is a skincare product formulated with natural colorants, oils, waxes, preserving agents, and protective agents for the lips. It enhances the appearance of lips while providing nourishment and safety due to the use of natural ingredients. Unlike conventional lipsticks that may contain synthetic colorants with carcinogenic potential, herbal lipsticks use natural colorants such as carrot, beetroot, turmeric, tomato, pomegranate, and cocoa. Common ingredients include castor oil, beeswax, carnauba wax, white soft paraffin, vitamin E, vanilla essence, strawberry essence, and lemon juice. These natural components ensure smooth application, pleasant aroma, and lip protection. Natural lipsticks are becoming well-known since they are risk free, non-toxic, and simple to apply. They contain nutrients that help maintain lip health and have negligible side effects. Evaluation parameters for herbal lipsticks include pH, melting point, breaking point, smoothness, and appearance.*
Overall, herbal lipsticks represent a natural, safe, and eco-friendly alternative to synthetic lip cosmetics, offering both beauty and lip care benefits.

Keywords: Introduction, Herbal Ingredients, Natural Wax, Natural Colorant, Natural Oils, Formulation

I. INTRODUCTION

Cosmetics have a big part in human attractiveness in the quickly evolving realms of science and technology. Cosmetics, especially herbal medicines, are widely applied to improve the look of the body and have grown in popularity on the international market . [1], [2]

Shampoos, tonics, herbal tablets, lipsticks, and contraceptives are just a few of the herbal items whose market has been continuously growing. [3] Specifically, lipstick is a popular cosmetic that comes in a range of hues and textures.[4],[5]

Although lip colouring has been done since the beginning of time, it might be difficult to apply lipstick on cracked, dry lips that have ulcers and sores. Furthermore, the use of synthetic colours in lipstick formulations may be detrimental to human health, particularly if heavy metal contamination are present .[6],[7] Long-term health hazards from certain heavy metals, like lead, can include neurological problems and stomach cancers.

The use of natural ingredients in cosmetic formulations has drawn interest in an effort to lessen these negative effects. [8],[9],[10]

Beta vulgaris, also referred to as beetroot, is one such natural source of red dye that can be used in place of artificial dyes. The primary ingredient in beetroot's red hue, has the potential to be used in lipsticks .[11] Furthermore, lipsticks with medicinal qualities can be used as a therapeutic delivery mechanism for lip infections. [12] Prior research has investigated the use of botanical substances in the creation of natural lipsticks.[13]

The formulation's composition directly affects the quality of lipsticks, enabling control over their physical characteristics. In order to avoid the negative effects of synthetic preparations, the current study intends to create a medicinal lipstick utilizing beetroot powder combined with acyclovir .[14],[15]

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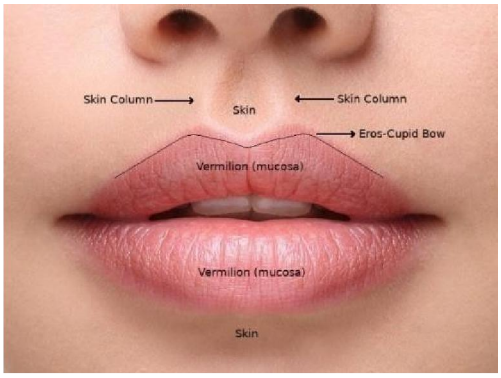

Figure 1 : Structure of Lips

Natural WAX Used In Lipstick:

1. BEES Wax

Carnauba is another name for bee wax.

The honeycomb of bees, including honeybees, is a biological source. Apidae is the family.

Chemical composition: The major constituents of beeswax are carbon (73.5%), hydrogen (13.2%), and oxygen (7.5%).

Uses: It acts as a moisturizing reagent to prevent drying out and cracking of your lips. It is an agent that thickens .[16]

Figure 2 : Bees wax

Natural Oils Used In Lipstick:

1. CASTOR OIL

Ricinus oil is a synonym.

Natural origin: Ricinus oil is a fixed, non-volatile oil obtained from the seeds of the Ricinus communis plant. Spurges are the family.

Chemical composition: It is mostly composed of neutral lipids and fatty acids.

Use: It has a slight laxative effect. It is used as a hydrating substance. Ricinoleic acid is found in lipstick, spermicidal cream, and jellies. It promotes drinking enough of water. [17]

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Figure 3 : Castor oil

2. OLIVE OIL

Also known as cold-pressed or swarthy oil.

Origin in biology: Swarthy oil is a particular kind of oil extracted from the fruit of the Olea europaea olive tree. It is extracted from the ripe olives' meaty portion. Oleaceae is the family. Its chemical makeup is primarily composed of triacylglycerols, with trace quantities of glycerol, phosphatides, free fatty acids, colorants, and sterols.Applications: It is a great way to stay hydrated. It offered natural SPF protection. It preserves your lips' moisture content. It was applied to your lips to remove dead skin and to restore your skin. It gives the lips nourishment. [18]

Figure 4 : Olive oil

3. COCONUT OIL

Coconut butter is a synonym.

Biological source: The dehydrated white portion of a coconut, known as the endosperm, of the coconut tree (Cocos nucifera), is used to make coconut oil. Palmae is the family.

Chemical composition: This mixture is composed of fatty acids, which include linoleic acid, oleic acid,palmitic acid, and stearic acid.

Use: It reduces discomfort. It is used as a hydrating substance. [19]

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Figure 5 : Coconut oil

4. VITAMIN E

The same as tocopherol.

The biological source is a group of substances that are present in a wide variety of foods.

Chemical makeup: This word refers to eight different compounds, including tocopherols, A-, β-, γ-, and the four tocotrienols that accompany them.

Use: They applied as a preservative and to treat wrinkles. It smoothes and softens the lips. [20]

Figure 7 : Vitamin E

5. ROSE OIL

Attar rose is a synonym.

Biological source: The Rosa damascena plant's blooms are used to make rose oil. Rosaceous is the family name.

Chemical components: Rose oil's primary chemical components are as follows:

1. Citronellol: A fragrant, pleasant substance. 2. Geraniol: A somewhat fruity and flowery substance. 3. Nerol: Has a fresh flowery aroma and is comparable to geraniol. 4. Phenylethanol: Provides a scent reminiscent of roses. Rose oil gets its distinct scent and medicinal properties from these ingredients.

Use: It is applied to produce a perfume that is more organic. To create lipstick. [21]

Figure 8 : Rose oil

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Natural Colourants Used In Lipstick:

1. Alkanet Root

INCI: Alkanna Tinctoria Root Extract Solubility:
Hydrophobic
Main chemical pigment(s): Alkannin
Colour: Red / purple

Alkanet is a herb in the borage family, whose roots yield a dark red dye. Although the plant's flowers are blue, it has a dark red root of blackish appearance externally but blue-red inside, with a whitish core. The main chemical compound found in alkanet root is called alkannin, which is soluble in alcohol, ether, and oils, but is insoluble in water. Keep in mind that alkanet root contains pyrrolizidine alkaloids, which are water-soluble compounds toxic for internal use in higher quantities. If you want to give your lip formulations a pleasant pinkish colour, choose for oil macerates rather than alkanet powder or water-soluble extracts like glycerites, which might not be appropriate (or safe) for this kind of product.

Figure 9 : Alkanet root

2. Annatto Seeds

INCI: Bixa 3rellana seed extract
Solubility: Lipohilic (Bixin), Hydrophilic (Norbixin)
Main chemical pigment(s): Norbixin, Bixin
Colour: Orange / Red

The seeds of the achiote tree (Bixa 3rellana) are the source of the orange-red colouring agent known as annatto. The resinous outer layer of the plant's seeds is primarily responsible for the annatto's reddish orange colour dye. Bixin and norbixin, two carotenoids, are the chemical substances that give things their yellow to orange hue. Bixin, a lipophilic pigment, can be saponified to become norbixin, a water-soluble pigment. For carotenoids, annatto has a unique dual solubility feature that is uncommon. The seeds have 4.5–5.5% pigment content, which is made up of 70–80% bixin. Annotto-based pigments are not precursors to vitamin A, in contrast to another well-known carotenoid called beta-carotene. A higher concentration of norbixin in an annatto colour makes it more yellow; a higher concentration of bixin makes it more orange.

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Figure 10 : Annatto seeds

3. Beetroot

INCI: Beta vulgaris (Beet) extract
Solubility: Hydrophilic
Main chemical pigment(s): Betanin
Colour: Red / Pink

A popular natural colourant for water-based cosmetics is beetroot. Its primary component, betanin, breaks down when exposed to light, heat, and oxygen. To get a vivid pink or crimson glycerite that you may use in your emulsions or water-based gels and tonics, mix beetroot powder with glycerin. Bear in mind that because beetroot is water-soluble, it cannot be used in oil macerations.

Figure 11 : Beetroot

4. Buriti Fruit

INCI: Mauritia flexuosa fruit oil
Solubility: Lipophilic (the oil)
Main chemical pigment(s): Beta-carotene
Colour: Red / orange

The palm buriti is also cultivated in the Amazon region. The fruits resemble chestnuts in certain ways. The fruit pulp is orange-yellow and is used to make juice and cooking oils. The oil is used in frying and cooking and is edible. The fruit's oval seed is edible. Buriti isspecial due to its high beta-carotene concentration, which is even more intriguing. A carrot contains 6.6 mg of beta-carotene per 100g of carrot pulp, whereas a buriti fruit contains 30mg of beta-carotene per 100g of fruit pulp, making it the richest natural source of the antioxidant. Even more beta-carotene is present in the oil, which has 330 mg per 100 grammes of buriti oil.

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Figure 12 : Buriti Fruit

5. Calendula Flower

INCI: Calendula officinalis flower extract
Solubility: Hydrophobic
Main chemical pigment(s): Flavoxanthin
Colour: Orange

Typically, petal colours in the yellow to red range are caused by carotenoids. Combinations of these carotenoid pigments are primarily responsible for the diverse range of petal colour in different types of calendulas. Extracts of the petals of calendula cultivars with orange and yellow flowers have been found to contain 19 carotenoids. The primary carotenoid in calendula petals has been identified flavoxanthin, and it is evident that this pigment is what gives calendula petals their distinctive orange colour. Lycopene and lutein are two more carotenoids that have been found in calendula. Although it is not permitted for usage in the EU or the USA, flavoxanthin is utilised as a food additive under the E number E161a.

Figure 13 : Calendula flower

6. Carrot root

INCI: Daucus carota sativa root extract
Solubility: Hydrophobic
Main chemical pigment(s): Beta-carotene
Colour: Orange

Carotenoids, so named because they make up the majority of the pigment in carrot roots (Daucus carota), are unquestionably some of the most prevalent and significant pigments in living things. Carotenoids are the pigments that give many plants their colours, notably the roots of carrots. Apart from chlorophylls, carotenoids make up the majority of the oil-soluble colours in nature. The primary colour in carrot roots is produced from beta- carotene. Organic skincare products frequently contain macerated carrot root, which has a lovely orange tint.

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Figure 14 : Carrot root

7. Elderberry

INCI: Sambucus nigra extract

Solubility: Hydrophilic (extract)

Main chemical pigment(s): Cyanidin 3-glucoside

Colour: Red / purple

Given that both elderberry and acai berries have a rich purple colour, it should not be surprising that they both contain some of the same chemical pigments and natural colourants. A very water-soluble anthocyanin called cyanidin 3-glucoside is what gives it its primary pigment.

Figure 15 : Elderberry

8. Hibiscus Flower

INCI: Hibiscus rosa-sinensis flower extract

Solubility: Hydrophilic

Main chemical pigment(s): Cyanidin-3-sophoroside, Cyanidin-3-sambubioside, Delphinidin 3sambubioside

Colour: Red / pink

Anthocyanins, the red pigments found in the red blooms of the Hibiscus species, are frequently utilised as colouring agents. The primary chemical pigment thought to be present in hibiscus petals of the species Hibiscus rosa-sinensis is cyanidin-3-sophoroside. Additionally, extracts of a Hibiscus species known as Roselle (Hibiscus sabdariffa), assumed to be indigenous to West Africa, are made. The two anthocyanins cyanidin-3-sambubioside and delphinidin-3-sambubioside that are most prevalent in Hibiscus sabdariffa.

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Figure 16 : Hibiscus flower

9. Madder

INCI: Rubia tinctorum extract
Solubility: Mildly hydrophilic
Main chemical pigment(s): Alizarin and Purpurin
Colour: Red / purple

The Mediterranean native madder was previously a popular plant for growing dyes. The plant has been employed as a source of a long-lasting red dye because its generic name, Rubia, signifies red. The plants' rootstock, which is two to three years old and is still red after drying, is used medicinally. Alizarin and purpurin, two red chemical compounds generated from the roots and tubers, are among the ingredients.

Anthraquinone glycosides are another.

Figure 17 : Madder

10. Pomegranate Fruit

INCI: Punica granatum fruit extract
Solubility: Hydrophilic
Main chemical pigment(s): Punicalagin
Colour: Red / purple

Although the inedible fruit peels are the main source of colourants in pomegranate, anthocyanins are watersoluble pigments that are chiefly responsible for the appealing red/purple colour of pomegranate juice. Punicalagin, punicalin, gallagic, and ellagic acids are some of its main components. Alkaloids like isopelletierine are also present in it. Due to the presence of a significant number of tannins, punica granatum dye and many other common natural dyes are considered to be powerful antibacterial agents.

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Figure 18 : Pomegrante fruit

11. Red Sandalwood

INCI: Pterocarpus santalinum extract
Solubility: Hydrophobic
Main chemical pigment(s): Santalin
Colour: Red

Santalin, a complex chemical, is the red pigment derived from Pterocarpus santalinum, sometimes known as red sandalwood. This fundamental structure comes in a variety of variations, all of which produce fairly strong red tones. Comparatively speaking, this red's stability is really good. It has been in use for many ages in custom. The constituents of red sandalwood produce the colours Santalin A or B, which are red, or Santalin Y, which is yellow.

Figure 19 : Red Sandalwood

12. Rosehip Fruit

INCI: Rosa canina fruit oil
Solubility: Lipophilic
Main chemical pigment(s): Lycopene, Beta-carotene
Colour: Red / Orange

The reddish colouring, which is linked to the carotenoid content, gives cold-pressed rosehip oil its distinctive appearance. In contrast, the oil obtained through solvent extraction has a yellowish hue. This may be because the organic solvent can extract pigments and a number of other compounds from the seeds, or it may be because the high temperature of the oil extraction process causes the red pigment to degrade. Rosehips contain three carotenes and six xanthophylls, totaling nine carotenoids. These fruits are among those with the greatest range of carotenoid colours due to the huge number of chemicals they contain. The highest levels of total carotenoids, which are primarily made up of lycopene and beta-carotene, were found in rose hips.

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Figure 20 : Rosehip fruit

13. Tomato

INCI: Solanum lycopersicum extract
Solubility: Lipophilic
Main chemical pigment(s): Lycopene
Colour: Red / Orange

Lycopene, and -carotene, lutein, zeaxanthin, and b-cryptoxanthin are the tomato's main nutrients. Red carrots, watermelons, gac, and papayas are just a few examples of the red fruits and vegetables that contain lycopene, a vivid red carotene and carotenoid pigment and phytochemical. The pigment found in tomato-based sauces, lycopene, is insoluble in water. Only organic solvents and oils may dissolve it. About 80–90% of the carotenoid content of red, ripe tomatoes is made up of it. The carrot's yellow pigment, beta-carotene, is an isomer of lycopene. [22]

Figure 21 : Tomato

General Method for Extraction for colourant:

Remove the skin of the beetroot first, and then chop it into uniformly narrow layers. Cover the layers with a fine mesh after placing them on butter paper. Give them a day to dry in the shade. Bake them until completely dry if there is any remaining moisture. The dried beetroot should next be ground into a fine powder. Strain the powder through a small screen to get rid of any large particles. Sieve it once more if necessary. Lastly, weigh and pack the powder. [23]

Formulation:

The standard lipstick-making technique was used to make the herbal lipstick. First, a water bath was used to melt beeswax in a beaker at 70°C. Almond and coconut oils were likewise melted at 70°C in a different beaker, arranged from highest to lowest melting temperatures. The oils were combined with carrot juice and thoroughly blended until smooth. After that, lipstick molds were filled with the mixture. The lipstick was removed of the molds and put into a lipstick condition after it had cooled and set. [24] Every technique for applying lipstick. First, a water bath was used to melt beeswax in a beaker at 70°C. Ricinus oil, coconut oil, and olive oil were also softened at 70°C in a different

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beaker, arranged from highest to lowest melting points. The oils were combined with beetroot colouring and thoroughly blended until smooth. The melted beeswax was then combined with this mixture at the same temperature. Rose oil and vitamin E were added once the liquid had cooled to 40°C. Lastly, lipstick molds were filled with the liquid mixture. The lipstick was removed of the molds and put into a lipstick condition once it had set.

The basic procedures for creating Lipstick are as follows:

The following fundamental manufacturing procedures are employed in the creation of herbal lipstick:

1. Pre-milling Pigment

The initial stage of creating herbal lipstick is this. Any clumps of pigment powder are broken up by grinding it down. This guarantees a smooth and uniform color for the lipstick.

2. Mixing and Melting

Since oils and waxes are solid at room temperature, they are melted together in this step. To create a smooth, consistent mixture, pigments and more ingredients are added after it has melted and thoroughly combined.

3. Molding

When the mixture is prepared, it is still hot and put into a mold. When the lipstick cools, it is carefully removed of the mold, which aids in its shape.

4. Faming

Flaming is the next step, which entails putting the lipstick in the flame. Usually, it is removed to prevent after being held and twisted there for a short time. After softening and releasing its structure, it is then installed into the vessels to create a shiny surface. [25],[26],[27]

II. CONCLUSION

The present review highlights the growing significance of natural and herbal lipsticks as safe, effective, and eco-friendly alternatives to conventional synthetic formulations. Natural lipsticks formulated using plantbased oils, waxes, and colorants not only enhance lip appearance but also offer therapeutic benefits such as hydration, protection, and nourishment. The incorporation of natural pigments—such as beetroot, carrot, pomegranate, and hibiscus—provides appealing shades while avoiding the health risks associated with synthetic dyes and heavy metal contaminants. The use of ingredients like beeswax, castor oil, olive oil, coconut oil, vitamin E, and essential oils contributes to smooth application, stability, and improved lip health.

Overall, herbal lipsticks represent a promising cosmetic innovation that aligns with consumer demand for nontoxic, sustainable, and multifunctional beauty products. Continued research on natural colorants, stability enhancement, and therapeutic applications may further expand the potential of these formulations in the cosmetic and pharmaceutical industries.

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