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## AN OVERVIEW STUDY ON HERBAL LIPSTICK

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**Abstract:** The increasing demand for safe, natural cosmetic ingredients has led to an increased interest in the development and testing of herbal lip products. This study focuses on lipstick using natural ingredients such as beeswax, oil, food extracts from sources such as turmeric, cocoa, beetroot and pomegranate. The aim is to reduce the side effects commonly associated with medications a for medical purposes, such as skin diseases and reducing the risk of cancer. The inspection examines parameters such as pH, melting point, texture and consistency to ensure quality products. Herbal lipsticks are formulated with a blend of natural ingredients, including oils, waxes, cinnamon, aloe vera, turmeric, neem and other plant extracts to provide moisture, nourishment and color benefits unlike traditional lip a toxic chemical that also cause skin problems or cancer. Herbal lipsticks offer a safe alternative studies show that herbs lip balm works as well as the products sold are equal in terms of quality, improving the health and beauty of the lips. It emphasizes the importance of using green and natural ingredients in cosmetics and advocates for increased use of herbal products in response to consumer demand for safe and effective products around.

**Keywords-** Herbal, Lipstick, Lip anatomy, Natural Ingredients, Plant-based, Moisturizing, Chemical-free.

### A. INTRODUCTION

- Cosmetic merchandise checks with any product that aims to aesthetically enhance the human body. Cosmetic merchandise is a wide type of products, various from creams, lotions, powders, perfumes, lipsticks, nail polish, make-up, hair color, deodorant, and many others <sup>[1]</sup>. The demand for products concerning self-beauty and good looks is very high in developed and developing countries. The large diversity of cosmetics is widely used in daily personal hygiene and cosmetic practices <sup>[2]</sup>.

- The term "herbal" is synonymous with safety which contrasts with synthetic products considered to cause adverse effects on human health. Herbal preparations: tablets, tonics, shampoos, lipsticks, and many more others have become in vogue among users. The main indication is an increasing concern for the intake of herbal remedies by people as they seek other alternatives to artificial chemicals, which are supposedly harmful and lead to side effects. Today, herbal medicines and cosmetics have become one of the fastest-growing segments in health and beauty because most people now look for herbal solutions in personal care and health needs. The demand for herbal cosmetics nationally and internationally is increasing with more people demanding herbal cosmetics compared to artificial substances [3].
- Today, there is a good variety of herbal beauty products that emphasize gentle treatment of the skin. Herbs have long been used in food, medicine, and beauty but, at no time were they out of fashion than in recent centuries. Yet, herbal ingredients have seen a marked return to both medicines and cosmetics. This has been an age-old tradition of lip coloring, which developed over time into this much broader range of shades and textures presented today in modern lipsticks. The growing discomforts of side effects caused by synthetic cosmetics have encouraged the preparation of herbal lipsticks with minimal or no side effects to ensure safety and satisfaction for women in the community [4].
- Lipsticks-from ancient usage of Sumerians around 5,000 BC to its modern usage. Defined under the Drugs and Cosmetics Act of 1940 and Rules of 1945, lipstick was defined as a cosmetic product meant for beautification, and it has long used multiple pigments and dyes to obtain this very purpose of beauty. Lipstick has had a wavering record when it comes to its cultural acceptance in history [5]. The ancient Egyptians could very well use it, but, on the other hand, lipstick also tagged people to the lower classes in Rome. Then came medieval times when it was even associated with Satan. It was in favour again when Elizabeth I took it up, but the British Parliament disapproved it in 1770. Lipstick became a boon for women during World War II as it provided them with much-needed encouragement in war-related industries. What was once a commodity for "fast women," by mid-century, has gained widespread acceptance and is today considered a staple product that was further legitimized by lipstick companies such as Maybelline in the 1990 [6-8].
- As defined by the D&C Act of 1940 and the rules of 1945 of the Drugs and Cosmetics, any article designed for introduction into the human body for cleansing, beautifying, promoting health, or altering appearance is meant through a pharmacological, cosmetic, or therapeutic action if applied by rubbing, dusting, or other means inside or outside, which covers makeup, creams, lotions, soaps, shampoos, conditioners, toothpaste, tooth powders, deodorants, and perfumes, among others. Therefore, this definition encompasses all personal care products that focus on beauty enhancement. Cosmetics are no longer the prerogative of women alone, as herbal cosmetics have gained lately much more popularity than ever because they utilize their natural product and cause lesser side effects compared to synthetic chemicals [9].
- Herbal cosmetics, made from plant extracts, form the latest trend in the cosmetic and fashion sectors that serve not only cosmetic but also health benefits to the consumers. Increasing demand is witnessed these days as natural cosmetics gain preference among women for personal hygiene. Being a color and protective agent for the lips, lipstick, to date, finds its roots deep within ancient times. Still, with all the

modern demands, lipstick now comes in a wider variety of shades and textures. Synthetic dyes, however, still pose a question and are widely obtained from coal tars that may lead to allergy conditions, dermatitis, and even severe health conditions like cancer. This has resulted in the high demand for herbal lipsticks, which are considered to have fewer side effects [10-15].

- Cosmetically accepted herbs contain diverse properties that include antioxidant, anti-inflammatory, antiseptic, and antibacterial effects in their management of diseases and prevention of body disorders, making them more attractive to synthetic products, which bring along side effects [1]. Ayurvedic scriptures, in particular Charak Samhita, have enumerated several medicinal herbs that enhance and create glowing complexions. Among them are Chandan, Haldi, and Manjistha which are used for brightening glow. Botanicals were also added to commercial cosmetics because of their long history of use in traditional medicine and by scientific evidence that shows both their safety and efficacy. The antioxidants from plants, in particular, have immense value for skin texture, appearance and tone. This puts additional challenges to the integration of these natural ingredients into modern formulae. As cosmetics tend to be swallowed, health regulatory agencies take more scrutiny of them, hence a responsible deliberation to determine what goes into the final products [2, 4, 16].
- Herbal lipstick formulation provides protection and beautification of lips from harmful sun radiation and pollution. Herbal cosmetics have caught on with women due to their mild and non-toxic nature which has made these products not run for generations. The range of ingredients usually present in phyto-products are both natural and phyto-ingredients where the natural ones contain oils and extracts while phyto-constituents contain pure constituents obtained through various processes [17-20]. Such herbal cosmetics as lipsticks, talcum powder, kajal, and liners are very essential in women's lives beautifying and enhancing their well-being. Herbal-based products have gained wide acceptance in the cosmetic and fashion industry due to their pharmaceutically active property providing antibacterial as well as anti-inflammatory properties. Lip balms from herbs nourish the lips besides overcoming disadvantages, such as drying the lips during winter or discoloration of the lips. Since these are safe and have side effects at the minimum level, herbal cosmetics have gained increased value, thereby triggering increased demand and interest in their developmental properties [9].

## 1. HERBAL LIPSTICK PRINCIPLE

A lipstick swivelling mechanism consists of a cup having a cup body for holding a lipstick bullet nosepiece for containing the cup and guiding the motion of the cup. A spiral rotatably connected the nosepiece, having helical guiding grooves fashioned on the internal floor thereof and a screw received inside the spiral and detachably linked to the cup. The screw has double helical protrusions, formed at the outer surface of the screw. The double-helical protrusions are obtained in and guided via the helical guiding grooves within the spiral to make the screw and the cup pass upward or downward whilst the spiral is rotated.

- **Natural Ingredients:** Plant-based ingredients such as beeswax, castor oil, olive oil, and natural colorants like beetroot, turmeric, and cocoa powder constitute herbal lipsticks. The ones so produced add color and nourishment without any dangerous chemicals [21].
- **Non-toxic and Safe:** Since herbal lipsticks minimize the usage of synthetic dyes and chemicals such as lead or parabens, allergic reactions, irritation to the skin, and more malicious health effects that can be carcinogenic in nature are uncommon. There is evidence that ingredients like beetroot, used in lipsticks, provide vibrant colors that can avoid these risks [22].
- **Hydration and Nourishment:** Almond oil, coconut oil, and shea butter give color to the lips while hydrating them by keeping them soft, neither drying nor cracking. Their benefits were established through formulations using natural oils and antioxidants [23].
- **Eco-friendly and Sustainable:** Herbal lipsticks are pro-environment as they opt for biodegradable or recyclable packaging and sustainable sources of the ingredient base. The use of natural pigments by Ratanjot and Shikakai addresses the concern of both eco-friendliness and effectiveness [24].

## 2. TYPES OF LIPSTICKS

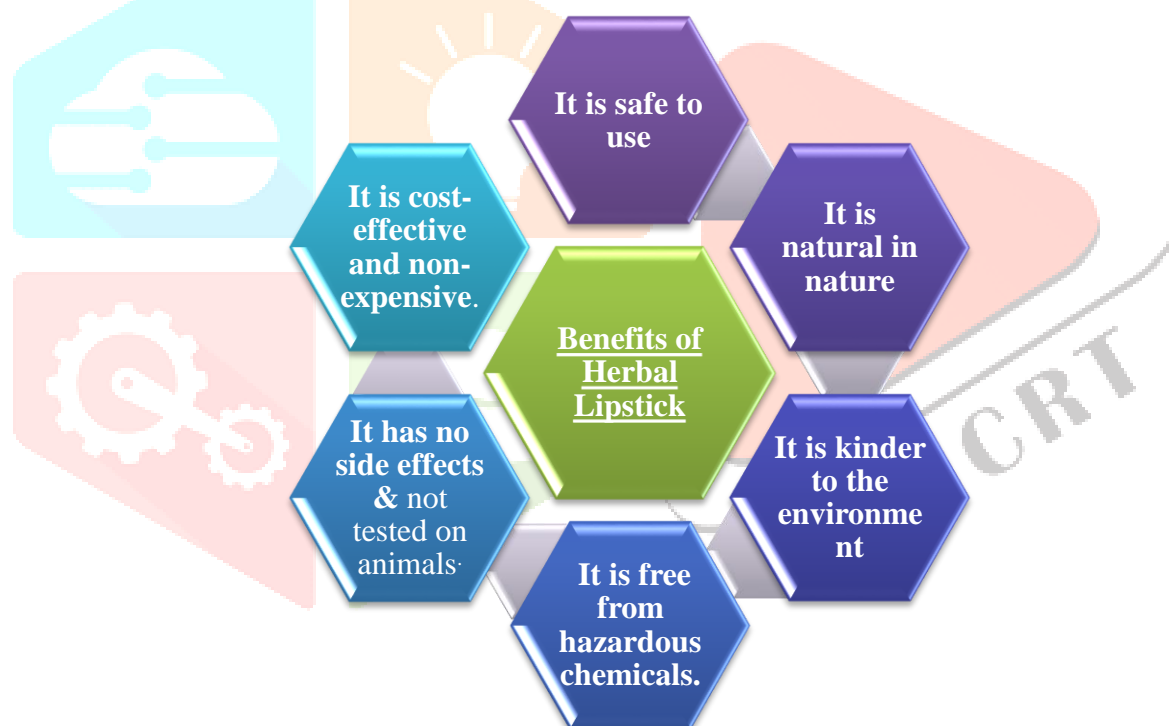
- **Matte lipstick:** - Provides a flat, non-shiny finish and tends to be long-lasting.
- **Liquid lipstick:** - Comes in a liquid form, drying to a matte or semi-matte finish for long-lasting wear.
- **Pencil lipstick:** - Pencil lipstick is a blend of a traditional lipstick and a lip pencil which is used on the lips. It has a slim pencil form and is designed to enhance and fill the lips perfectly.
- **Cream lipstick:** - Offers a creamy texture with a bit of shine, providing hydration to the lips.
- **Glossy lipstick:** - Provides a high-shine finish for a wet look and is often more sheer in color.
- **Moisturized lipstick:** - Moisturized lipstick refers to a sort of lipstick that is formulated with hydrating components to assist keep the lips soft, easy, and moisturized. Unlike conventional lipsticks that may have a drying impact, moisturized lipsticks generally contain nourishing ingredients.
- **Satin Lipstick:** - Combines the richness of matte with a subtle sheen, offering a smooth finish.
- **Sheer Lipstick:** - Offers a translucent color, allowing the natural lip color to show through.
- **Lip Stain:** - Provides a long-lasting tint to the lips, giving a natural and subtle appearance.
- **Metallic Lipstick:** - Contains metallic pigments for a shimmery and reflective finish.
- **Pearl/Frost Lipstick:** - Offers a frosted or pearlized finish with a slightly metallic shine.
- **Hydrating Lipstick:** - Infused with moisturizing ingredients to keep lips hydrated, often with a satin finish.
- **Long-Wearing Lipstick:** - Formulated for extended wear, resisting smudging and fading throughout the day.
- **Lip Crayon:** - A pencil-like lipstick that is easy to apply and often provides a matte or satin finish.
- **Two-Tone Lipstick:** - Features two complementary shades in one bullet, creating a gradient or ombre effect.

- **Color-Changing Lipstick:** - Reacts with the pH of your lips to create a custom color based on your skin's chemistry.
- **Velvet Lipstick:** - Soft and smooth textured lipstick with in between cream and matte lipsticks, giving a finish that is neither too shiny nor too dry [25, 26].



**Figure 01: Types of lipsticks.**

## 2. BENEFITS OF HERBAL LIPSTICK [23, 27].



**Chart 01: Benefits of herbal lipstick**

## 3. IDEAL CHARACTERISTICS OF GOOD LIPSTICK

- It should be non-toxic & have optimum plasticity in lipstick [23].
- It should not become dry during storage & should be non-irritant and smooth [23].
- It should preserve lip color for an extended period after application [23].
- It should offer a pleasant taste, essence, and aroma [28].
- It should remain intact for an extended time after application [28].
- It must exhibit stability both physically and chemically [29].



- It should be significantly free of particulates & have a good degree of permanence [29].
- These should deliver a shiny and smooth appearance without waiting [28].
- It should not fuse or solidify and must stay within the acceptable temperature range and variation.
- It has different color, odour, texture, and packing [29].
- It should not melt or be hard with variations in climatic temperature [28].
- It must be stable in shelf-time and free from sweating and bloom during storage condition [28].
- It should be a long-lasting & free from contamination.
- It should be free from the bloom or sweating during storage [29].
- It should not lose its shiny appearance during its storage.

#### 4. LIPSTICK IN MODERN

Role of Herbal Lipstick in Cosmetics Today, Herbal lipsticks have emerged as an effective player in the contemporary cosmetics world. They provide a healthy and safer alternative to traditional lipstick products. As consumers become more sensitive to chemicals and preservatives in cosmetics, in this case, those ingredients associated with the risky use of synthetic formulations, herbal lipsticks offer a promising answer.

- ❖ **Healthier and safer alternatives** - Traditional lipsticks still include synthetic chemicals that will cause irritation and allergic effects upon the skin, while some of its ingredients pose severe health problems due to carcinogenic effects. Herbal lipsticks are distinguished from their counterparts since they use natural herbs as the primary ingredient that offers color and moisturizes and protects the lips, like beeswax, castor oil, pomegranate, and cinnamon. According to Bachhav et al. (2023) and Ralebhat & Vikhe (2022), herbal lipsticks have proven to nourish the lips far more than synthetic lipsticks, owing to their composition with natural ingredients, thus making them a healthier choice for the consumer [21-22, 24].
- ❖ **Low Side Effects** - The other reason for giving preference to herbal lipsticks is the low side effects. Most of the pigments in such lipsticks come from natural ingredients, such as turmeric, beetroot, and pomegranate, which are less harmful than synthetic colorants. Traditional lipsticks cause bad reactions on the skin, causing rashes and dryness, but herbal formulations pose no danger and cause less irritation on sensitive skin. This is supported by research conducted by Mali et al. (2022), as well as Gadge & Sonare (2023), suggesting that herbal lipsticks are kinder and pose a significantly reduced risk of irritation or allergic reactions on the skin [29, 31-32].
- ❖ **Eco-friendly and vegan options** - The demand for more environmentally friendly products has made herbal lip products increasingly popular. Many consumers today are concerned not only about the health effects of their makeup but also about its impact on the environment. Such requirements can be met by herbal solutions as they use natural dyes such as betel nut and Punic granted, a plant well known as pomegranate, as described by Raganathan et al. (2019) [33].
- **Functional and Therapeutic Benefits** - Herbal lipsticks do not only add color but also functionally have the benefits most common lipsticks lack in them. Most herbal compositions include natural oils, waxes, and plant extracts like aloe vera and need. These ingredients are sought more for their

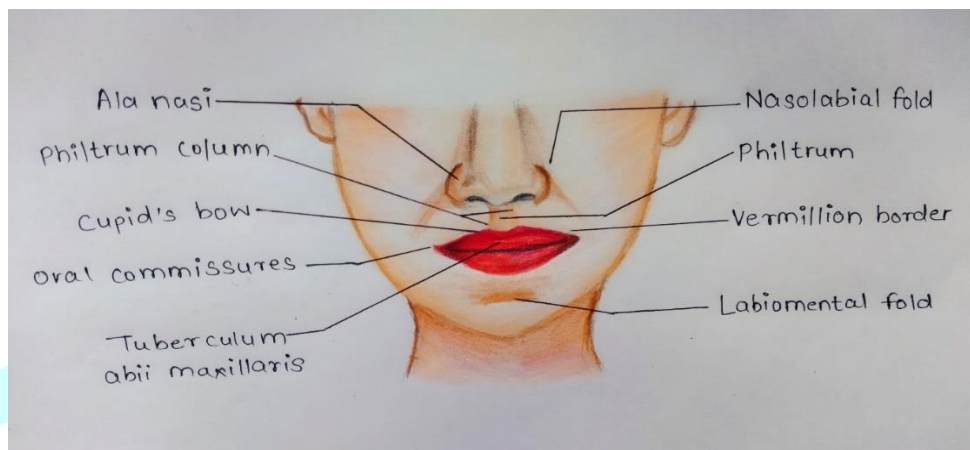
moisturizing and healing properties, thereby keeping the lips in good health by hydrating, soothing, and repairing cracked lips. Studies by Rasheed et al. (2020) and Patel & Patel (2021) indicate that these therapeutic ingredients, though a constituent of herbal lipstick, make cosmetic appeal due to the bright color shade possible, thereby making lip care better. Indeed, herbal lipsticks should become part of every beauty landscape because of their blend of natural ingredients, mild side effects, and additional therapeutic benefits <sup>[34-35]</sup>.

## 6. ANATOMY OF LIPS

- The lips function as an organ for grasping, sucking, and forming sounds. The structure of the lips includes skin, shallow fibrous tissue, and orbicularis bags each consisting of specific muscles (Areolar tissue and the inner lining). The lip margins bear dry, red mucous membrane that meets the skin with a lot of blood vessels and sensory corpuscles. The mucosal membrane is attached to the buccal cavity and the free ends of the upper and lower lips and two vertical folds are formed in the middle by the two superior and inferior parts.
- Beneath this mucosa is a layer of useful connective tissue that carries the blood supply to the region, with these vessels embracing the entire opening of the lip. The blood supply to these arteries is generally provided by the facial artery. Unlike the inferior coronary, the superior coronary is bigger and connects to the one on the back side while giving a small branch to the wall of the nose; septum for the river called arterial septi nasi. Sometimes pressure on this artery will arrest the bleeding. The lower lip is innervated by the so-called mental nerve. This nerve also sends large branches to the mucosa and skin of the lip and chin as well as to the fascia in this region. One set of lymphatics from the lips terminates in a gland situated just above the body of the hyoid bone while another set drains into submandibular glands. Labial glands are located in the submucosa of the lips surrounding the mouth entrance. It produces a serous type of secretion. When the ducts of these glands are obstructed, so called mucous retention cysts form <sup>[36-37]</sup>.
- Studying the anatomy of the lips is a rewarding endeavor as there are many structures involved in both functional and focal aspects of the face. Lips, which consist of vermilion border, philtrum, and oral commissures, are essential for speech and facial expression. The lips have a phase called the vermilion border, which separates the colored lips from the skin around them, and is curved in red skin due to the large supply of blood vessels in that border. The white roll, in between skin and vermilion, assists in lip shaping.
- Likewise, the philtrum, a midline vertical furrow found between the upper lip and nose, serves to enhance the features of the face. Generically it is considered a historical appearance caused by the fusion of facial parts during embryo development. A muscular framework is present in the lips which helps to convey a variety of emotions and also helps in the articulation of speech. The lips have this muscle within them called the orbicularis oris which is the muscle that encircles the mouth and thus aids in lip movement as well as closure. To this muscle are attached further muscles, which are known


as intrinsic or extrinsic muscles and work to provide the lips with movement. Furthermore, the lips have sebaceous and perspiration to maintain and offer protection. Sensory endings improve touch ability, and so a person is able to feel heat, cold, texture, and weight. From the point of view of aesthetics, it is common to see lips that are full and symmetrical conforming to the limits of beauty.

- These two factors highly attach great emphasis to the lips and their importance in facial aesthetics, and the lips are moreover altered or improved with the help of procedures such as lip fillers. To conclude, lips' anatomy is a perfect union of beauty and usefulness, which is the intricacy which governs not only the way we communicate but also the meaning attached to beauty [25].







**Figure 2: Anatomy of lips**

## 6. INGREDIENTS

HERBS	BIOLOGICAL SOURCE	FAMILY	USES	CHEMICAL CONSTITUENTS	IMAGES
<b>Beet Root</b> [38]	It consists of fresh root of Beta vulgaris	Amaranthaceae	Coloring agent, used as binder, gives glossy appearance to lips, emollient action on lips, prevents cracking of lips.	It consist multiple biologically active phyto chemicals including betalains, flavonoids, polyphenols, saponins and inorganic nitrate, it is a rich source of diverse minerals such as potassium, sodium, phosphorous, calcium, magnesium, copper, iron, zinc.	 <p><b>Figure 3: Beet root</b></p>



<b>Rose</b> <sup>[39]</sup>	Collected from nearby areas.	Rosaceae	Anti-inflammatory, Antioxidant, Anti-aging and skin repair, Analgesic, Diabetes medication, Antibacterial, Decreases anxiety and stress.	Flavonoids, triterpenes, tannins, phenolic acids, polysaccharides, fatty acids, organic acids, carotenoids and vitamins.	 <p><b>Figure 4:</b> <b>Rose</b></p>
<b>Papaya</b> <sup>[40]</sup>	The biological source of papaya is the plant Carica papaya	caricaceae	High in antioxidant, vitamin C & E, Nourish and softens lips.	Alkaloids, Glycosides, Tannins, Saponins, Flavonoids.	 <p><b>Figure 5:</b> <b>Papaya</b></p>
<b>Aloe vera</b> <sup>[41]</sup>	Aloe is dried latex of leaves of it	Xanthorrhoeae	Aloe binds moisture to skin, making them less dry. The main use is for lips that are dry, cracked and itchy, antioxidant property, reduces wrinkles, anti-inflammatory property.	The two-main class active constituent of the Aloe vera plant extract are chromone and anthraquinone and its glycoside derivatives, alongside others such as phenylpyrone derivatives, flavonoids, phenylpropanoids, coumarins, phytosterols, naphthalene analogs, lipids, and vitamins.	 <p><b>Figure 6:</b> <b>Aloe-vera</b></p>
<b>Carrot juice</b> <sup>[42]</sup>	The biological source of carrots is the wild carrot	Apiaceae	Immune system, Skin care, Weight loss, Cancer, Eye	Carrots contain calcium, phosphorus, magnesium, iron, potassium,	

	plant, Daucus carota		health, Diabetes management, Controls BP, Digestive Health, Bone health, Antioxidants, Carrot leaf juice for constipation, May protect your liver, Vitamin K	manganese, sodium, copper, and zinc. Carrots contain carbohydrates, Organic acids, phytonutrients, protein, fiber, and trace amounts of succinic acid, $\alpha$ -ketoglutaric acid, lactic acid, and glycolic acid.	 <p><b>Figure 7: Carrot juice</b></p>
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**Table 01: List of drugs that are widely used for manufacturing herbal lipstick**

## 8. ADVANTAGES OF HERBAL LIPSTICK

- Natural constituents used in herbal lipstick hence it's safe to use <sup>[23]</sup>.
- It contains natural nutrient that keep lips healthy.
- Different tones and combination should be attained from these natural colors <sup>[23]</sup>.
- Natural colorants have different natural shades of color such as ruby red, beetroot purple, pale red, deep violet, dark purple <sup>[23]</sup>.
- The medicated lipstick should be protecting from dryness and cracking <sup>[43]</sup>.
- Keeps your lips hydrated & moisturizing.
- Minimal side effects or low chances of lips irritation.
- It should also protect from the sores and swelling <sup>[43]</sup>.
- Non- vexation to the skin of lips <sup>[23]</sup>.
- Stable physically and chemically.
- Shiny and smooth appearance <sup>[43]</sup>.
- Wide range of shades of color to choose from.

## 9. DISADVANTAGES OF MODERN LIPSTICK

- a) **Toxic Metal Contamination:** There are many toxic trace metals all well known in lipsticks, including lead, cadmium, nickel, and chromium. Use can also cause allergic contact dermatitis, and, if absorbed into the blood stream, may even cause systemic damage, with prolonged use. Arsenic and other metals are found in some studies to be above safe levels, which can lead to longterm health problems <sup>[44-45]</sup>.
- b) **Synthetic Chemicals and Allergies:** It contains synthetic colorants and all the ingredients of lipsticks that can cause allergic reactions, skin irritation, dryness and sometimes lip cancer. D&C Orange No. 17, a type of synthetic dyes has been suspected of showing up mutagenic effects, and as such, its long term safety is questionable <sup>[46]</sup>.
- c) **Environmental Impact:** Synthetic lipsticks produce and they spoil the environment due to the production and disposal of synthetic lipsticks, essentially petroleum based oils and silicones. Some of these substances can remain in ecosystems for long times and will cause long term environmental damage <sup>[47]</sup>.
- d) **Heavy Metal Exposure:** If you are reapplying lipstick all day long, you can ingest some in small amounts, which can build up and cause heavy metal exposure. Most products meet FDA approved limits, but even low levels over the long haul of exposure to these metals may pose health risks <sup>[48]</sup>.
- e) **Mutagenic and Carcinogenic Properties:** There is a correlation between some of the synthetic dyes and pigments used in lipsticks, and mutagenic effects that may increase cancer risk. In laboratory tests, lipsticks containing dyes such as D&C Orange No. 17 have been shown to be mutagenic, and so raise questions about their future health implications <sup>[48]</sup>.
- f) **Skin Irritation and Allergies:** Synthetic colorants in many lipsticks as well as other chemicals are linked to allergy, skin irritation, and nausea or dryness of the lips. It can also cause skin discoloration or rashes if exposed for prolonged <sup>[30]</sup>.
- g) **Systemic Health Risks:** Systemic lupus erythematosus (SLE) appears to be associated with lipstick use, particularly in frequent users. This autoimmune condition may be developing from chemicals absorbed by the buccal mucosa <sup>[49]</sup>.
- h) **Lead and Heavy Metal Contamination:** Heavy metals such as lead are often found in lipsticks that when swallowed over time can be dangerous to your health. However, both metals are within regulatory limits and even longer term exposure to these metals is able to still cause neurotoxicity as well as kidney damage <sup>[50-51]</sup>.
- i) **Contact Dermatitis:** It is an allergic reaction that causes redness, swelling and itching of the lips that's commonly caused by lipsticks. The common allergen ingredients comprise glyceryl isostearate, oleyl alcohol <sup>[52]</sup>.
- j) **Phototoxicity:** The photodynamic character of certain dyes in lipsticks, such as fluorescein based dyes can give rise to free radicals on exposure to light. Therefore, a direct effect of metalloids on SLE and other autoimmune diseases appears possible <sup>[53]</sup>.
- k) **Drying Effect:** Many lipsticks can dry out the lips, leading to chapped or flaky skin.

- l) **Allergic Reactions:** Some individuals may experience allergic reactions or irritation from certain ingredients.
- m) **Transfer:** Lipstick can easily smudge or transfer onto cups, clothes, and skin.
- n) **Maintenance:** Regular touch-ups are often needed throughout the day to maintain the look.
- o) **Staining:** Some long-lasting formulas can stain the lips, making removal difficult.
- p) **Cost:** Quality lipsticks can be expensive, and frequent use can add up over time.

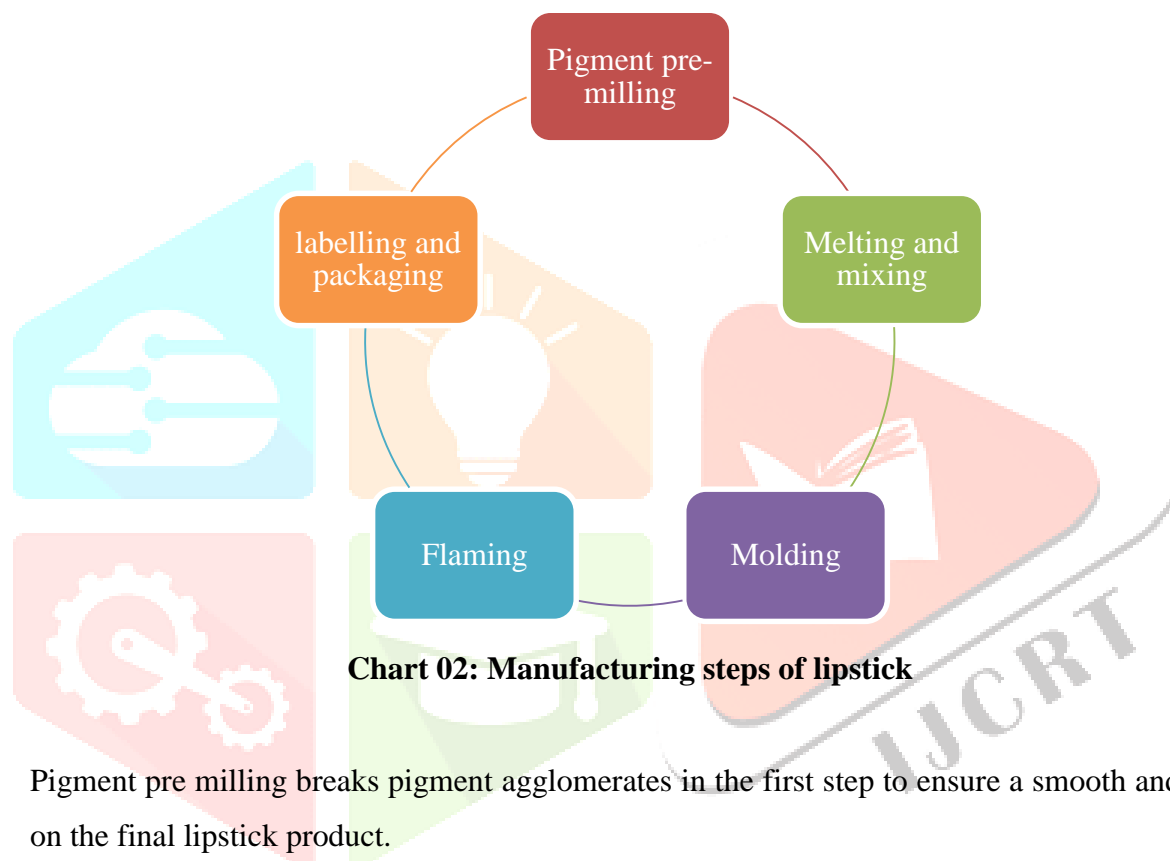
## 10. LIP DISORDER

- **Swelling:** Food, drinks, drugs or lipstick allergies may cause swelling of the lips. A cause is airborne irritants. Once the cause of the swelling is discovered and removed, swelling usually subsides. Some cases remain mysterious. Hereditary angioedema is a genetic trait passed on from birth that causes people's chronic swelling. Such causes of swollen lips are also not inherited, and include sunburn, exposure to cold weather, erythema multiforme or injury <sup>[54]</sup>.
- **Sun Damage:** Sometimes the sun over exposes the lower lip, causing it to darken and dry. In sun damage, you usually see reddish specks or a white film on the surface. People with such abnormal heads are also more prone to lip cancer but decreasing this risk is easy by using sun protective lip balm and a wide brimmed hat to cover the face <sup>[55]</sup>.
- **Inflammation (Cheilitis):** Insult to lips most commonly leads to the inflammation of lips (cheilitis) causes painful, red, cracked and scaly corners to the mouth. Sometimes, chronic irritation or infection is also found and -- though it's an indirect effect caused by the deficiency of vitamin B12 in the diet - - it can also lead to the condition. A very common cause of lip inflammation is herpes simplex virus (HSV) infection, which causes herpetic cheilitis that mostly manifests on the vermilion and the vermilion boundary <sup>[55]</sup>.
- **Discoloration:** Freckles, or brownish spots (melanin macules) in and around the mouth, are usually benign and tend to persist for a long time. Polyps in the gastrointestinal tract are associated with Peutz-Jeghers syndrome, an inherited disorder which is associated with small, dispersed brown black spots. Kawasaki disease may have a tendency to affect children eight years old age or less, causing dry, cracked lips and redness of the mucous membrane lining the mouth <sup>[56]</sup>.
- **Sores:** Skin cancer could be indicated by a sore on the lips with hard edges and on a raised surface. Some other sores can be a sign of oral herpes simplex virus infection, or syphilis. In some cases, lip sores, such as keratoacanthoma, have no known cause and may require medical attention <sup>[56]</sup>.
- **Contact urticarial:** It is a transient wheal and flare reaction at the site of contact of the offending agent within 10 to 60 min and resolves completely within 24 hr. It was first described by Alexander Fischer in 1973. It is an acute form of urticaria and symptoms last for less than 6 weeks <sup>[54]</sup>.

- **Contact leukoderma:** Contact leukoderma is a condition of lost skin colour (whitening of skin) resulting from contact with chemicals that have been well documented to destroy the cells responsible for pigment of the skin, known as melanocytes. Also referred to chemical leukoderma it could be spelt as leucoderma. The most common form of contact leukoderma from cosmetics is caused by para-phenylenediamine, PPD, a chemical in hair dyes. Contact leukoderma due to the azo dyes has been reported with the use of facial cosmetics in the following products: Lipsticks, Lip liner [57].

## 11. MANUFACTURING OF LIPSTICKS

Herbal lipstick is formulated under a systematic manufacturing process [54, 57-60].



**Chart 02: Manufacturing steps of lipstick**

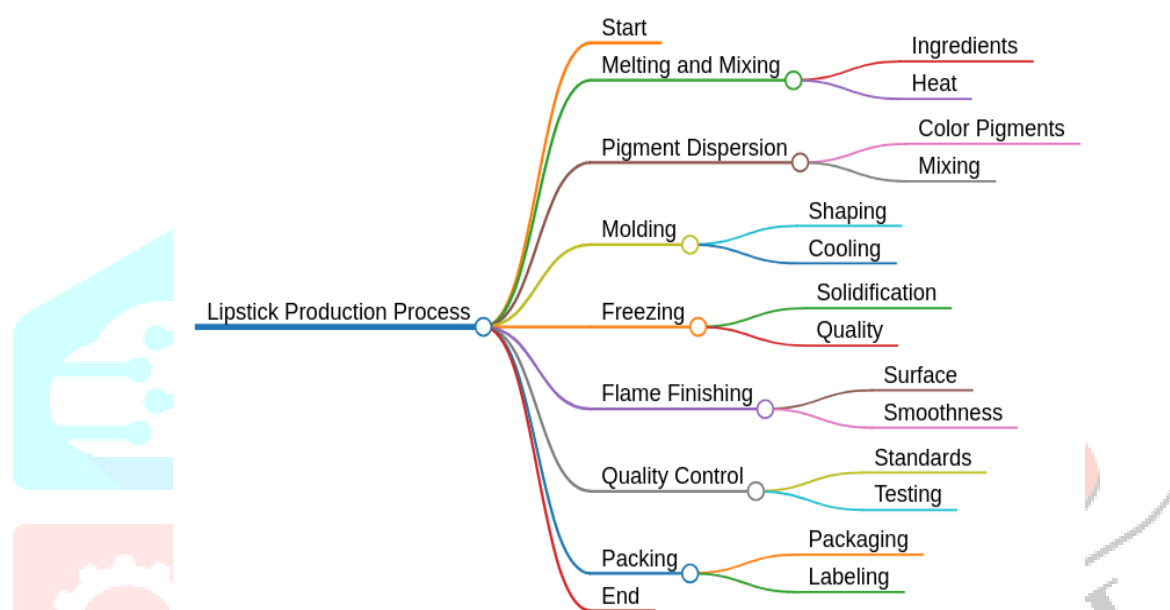
- Pigment pre milling breaks pigment agglomerates in the first step to ensure a smooth and even color on the final lipstick product.
- Melting and mixing is next, which is when you heat, and mix (blend) solid waxes with oils. When the base is liquefied pigments and other additives are added to form a homogeneous mixture.
- Once the hot mixture has been poured into metal or plastic molds, it's solidified in the moulding stage. Excess material is scraped off, then it is poured upside down and cooled and taken out of the mold. Then, the bottom of the tube is wound shut.
- The flaming process requires a brief passage of the lipstick through a flame. It seals up any pinholes and adds a glossy bottom without deforming the lipstick.
- In the labelling and packaging stage the lipstick is retracted back into its tube, capped labelled and packaged, and ready for sale.



The other manufacturing methods of lipsticks are-

❖ **Method 1: -**

The formulation of herbal lipstick was conducted following a standard procedure. In this method, oil phases like olive oil and castor oil were heated in a beaker at 60°-70°C using a heating mantle. Concurrently, beeswax and Shreeji wax were melted in a separate beaker at the same temperature. Once melted, the wax mixture was combined with the heated oils and thoroughly mixed until homogenous. In another beaker, colored pigments, vanilla essence, and lemon juice (as a preservative) were added and mixed well. This mixture was then incorporated into the oils and waxes. The molten blend was poured into lipstick molds and left at room temperature to solidify. After solidification, the lipsticks were removed from the molds and packaged in lipstick cases.



**Chart 03: Other manufacturing methods of lipsticks**

## 12. PROBLEMS DURING THE FORMULATION OF HERBAL LIPSTICK

- ❖ **Sweating: -** It caused due to high oil content or inferior oil binding.
- ❖ **Bleeding: -** Separation of coloured liquids from oily bases.
- ❖ **Streaking: -** The finished object has a narrow band or line that is a different hue or material. Issues Associated with Moulding.
- ❖ **Laddering: -** It doesn't look smooth and homogenous after congealing and setting but rather a multi-layered appearance.
- ❖ **Deformation: -** This is a moulding issue where the lipstick appears to be distorted in shape. It stands out and is visible on both sides of the lipstick.
- ❖ **Streaking: -** Streaking occurs when there is an unfair distribution of the product, which fails to evenly coat the mouth. When this happens, there will be unsightly lines or patches, or a mosaic sort of coloring, which spoils the whole essence of the lipstick. There are several factors that may cause streaks in lipstick such as: Bad ingredients, Inadequate lip priming, Mistakes in the application.

- ❖ **Cratering:** - A phenomenon observed in split-molding, it usually occurs in the stage of the process when the stick is dimpled.
- ❖ **Mushy failure:** - It pertains to a situation when the center of the lipstick is soft and unstable which results in cracks [25, 61].

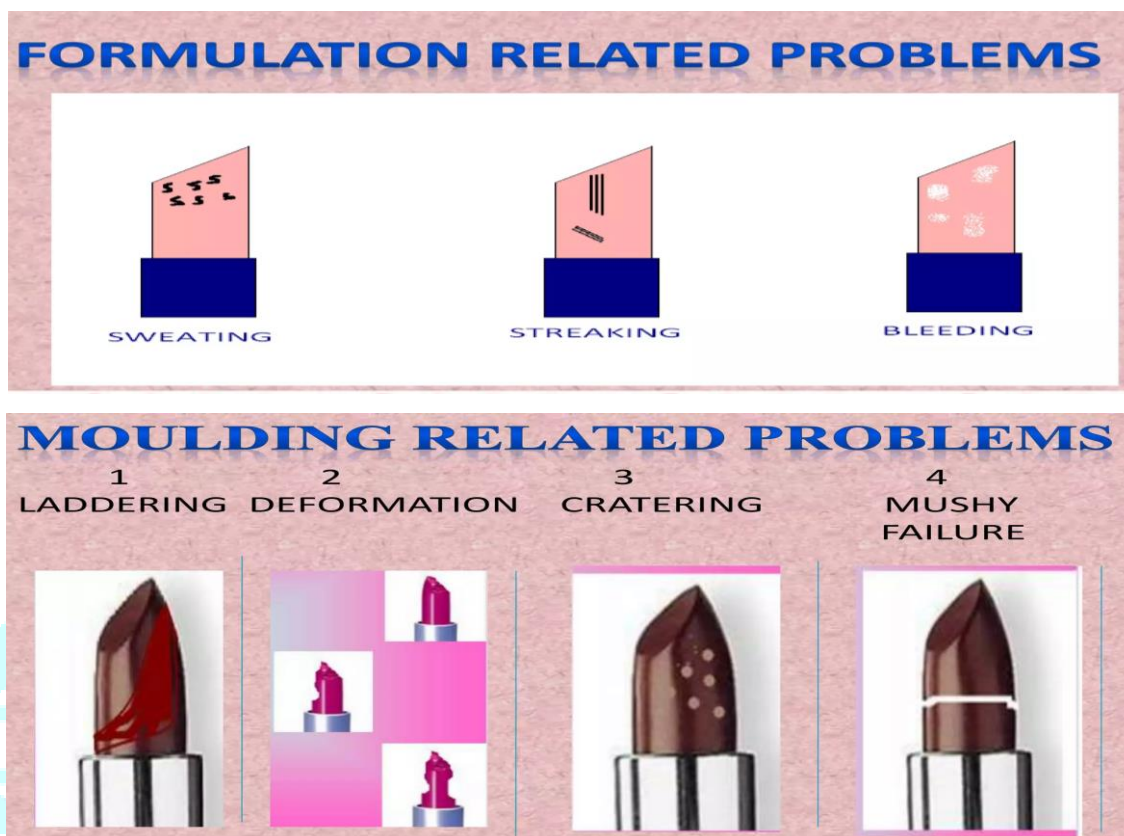


Figure 8: Problems during the formulation of herbal lipstick

### 13. EVALUATION OF HERBAL LIPSTICK

- a. **Melting point:** - It can be measured using a capillary tube method and this method is known as determination of melting point. The sample is usually heated until it melts and enters the capillary tube which can then be used to determine the melting point. Determination of melting point is extremely important for determining storage safety levels. It is relevant for shelf life and safe storage as well therefore determination of melting point is highly necessary. The melting point of a certain formulation of lipstick, was established employing the capillary tube method wherein the product was placed inside a capillary tube, put inside a melting point apparatus and it was foiled that the product was first seen to melt. It was then noted that the sample had completely melted. The procedure was repeated three times and the melting point ratio recorded varied with different formulation [24, 62].
- b. **Breaking point:** - Breaking point test is to determine the strength of lipstick or the vigor of lipstick. Prepared herbal lipstick was held horizontally in a socket  $\frac{1}{2}$  inch away from the edge of support [24, 47]. The weight was gradually increased by a specific value (10 g) at a specific interval of 30 sec and the weight at which breaks was considered as the breaking point [61-62].
- c. **Softening point:** - The lipstick must endure numerous circumstances that it would be exposed to in the user's handbag. It seeks to resist different temperature levels and be applied equally smoothly in

hot climatic conditions and in a cold climate with an axe. The Ring and Ball technique was utilized to establish the melting point of the lipstick [24, 57].

- d. Ring and Ball method:** - A ring or support orifice is taken and prepared herbal lipstick was filled in the orifice ring. Using a sharp blade, excess mass on the upper and lower parts of the ring was cut off, forming a ring of hardened lipstick in the orifice ring. This was then kept in a refrigerator (6°C) for a period of 10 minutes. A stand was attached to a ring. On a hot plate, there was a 500 mL beaker containing water with a temperature of the surroundings and a magnetic stirrer. A steel ball was carefully placed onto the lipstick mass. The support bar was then inserted into the beaker until it was completely submerged and heating and slow stirring was started. A thermometer was used to keep the temperature in check. The temperature at which the lipstick mass and steel balls were weakened and dropped to the bottom of the beaker was taken as the softening point of the lipstick [24, 57].
- e. Spreadability test:** - A spreadability test is conducted to assess the extendibility of lipstick texture. It was performed by applying the lipstick on a glass slide multiple times to check the evenness of the coating as well as whether the lipstick softened, distorted or broke during application. After, the visual inspection of the smoothness and evenness of the protective film obtained from the lipstick was done. Good: Even, no fragments are left, excellent coverage, no deformation of lipstick experienced. Intermediate: Even, does leave some fragments, application is good but slight deformation present. Bad: Uneven and leaves a lot of fragments, application is tough and lipstick is deformed [24, 63].
- f. Rupture point:** - The breaking point test is conducted to evaluate the stress on the lipstick. A lipstick is placed horizontally and rested on a support leaving about ½ inch of the lipsticks base of the support edge. The weight goes up in 10gm increments at every 30 seconds after which the weight at which the breaks is considered as the rupture point [64].
- g. Skin irritation test:** - It is carried out by applying the product in the form of a patch on the skin for 10-20 min and observes redness, no reaction, itching, and irritation [24, 61-62].
- h. Aging stability:** - Prepared herbal lipstick was stored at refrigerator temperature (40 °C), room temperature (20 to 250 °C), and high temperature (30 to 400 °C) for 1 h. Sundry parameters such as bleeding, crystallization on surface and ease of application were observed [24, 57, 61-62].
- i. Perfume stability:** - The performance of the formulated herbal lipstick was evaluated after 30 days of curing, in particular noting the smell [24, 57]. The stability of scent may also be determined after placing the lipsticks in the oven set at 40°C and comparing the scent with that of a new lipstick at choice intervals [61-62].
- j. Ph testing:** - The pH of formulated herbal lipstick was determined using pH meter. The pH of herbal lipsticks is measured and controlled to guarantee that their application within the skin does not provoke any irritation [24-25]. All of the formulated lipsticks were subjected to pH measurement using a pH meter, and calibration of the meter was done with a buffer solution before tests were conducted [57]. The pH of the lipsticks was taken and noted down making sure it is in the acceptable range for usage on lips. Maintenance of acceptable pH levels is essential so as to prevent irritation to the skin by the cosmetic product [61-62].

## 14. Future Directions in Lipstick

- ❖ **Innovations on the Horizon:** - When it comes to the lipstick making process, the industry has undergone incredible advancement and changes over the years. As technology advances, there are emerging trends and potential innovations that could significantly influence the future of lipstick manufacturing. The increasing popularity of cosmetic lip products concerning design changes trends is one of the notable current global lipstick industry trends. Lipstick manufacturers have realized that this is a very rewarding market and therefore are trying to find ways to make environmentally friendly lipsticks. This includes using natural and organic ingredients, and even creating lipsticks with decomposable packages. Furthermore, several lipstick producing firms have also put some of the sustainable practices in manufacturing through the use of less water and energy in the production processes [65].
- ❖ **Sustainable and Ethical Make-Up Trends of the Future:** - In recent years, another topical direction of industrial revolution is launching new abilities and benefits in the manufacture of lipsticks. In the case of 3D printing and other methods of active manufacturing, manufacturers can produce lipsticks that replicate any shape, texture, color, density of corks and many other aspects. This, in turn, creates more opportunity for the consumers with regard to personalization and customization. Furthermore, advanced technology also cuts down on the lapse time of the manufacturing process while upholding the quality of the lipsticks produced [66].
- ❖ **Aspects of Technologies and Smart Products in the Future of Lipstick Manufacturing:** - In the near future, we might even be able to see lipstick with artificial intelligence in it. A smart lipstick could have a sensor that scans the lip surface and suggests appropriate lip care solutions. Such suggestions could involve the correct shade of lipstick that suits the individual, or how to care for the lipstick such as carrying it in an appropriate container [67].

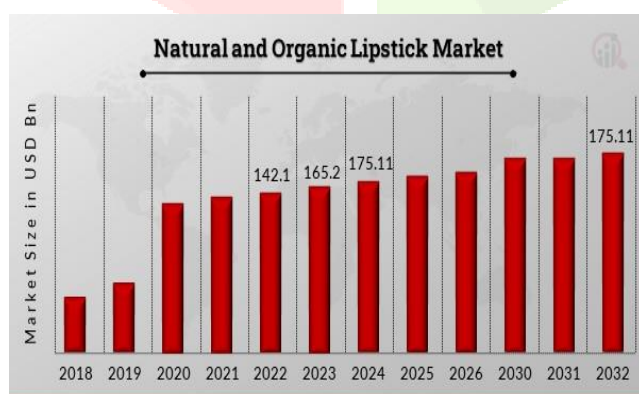


Figure 9: Natural & organic lipstick market

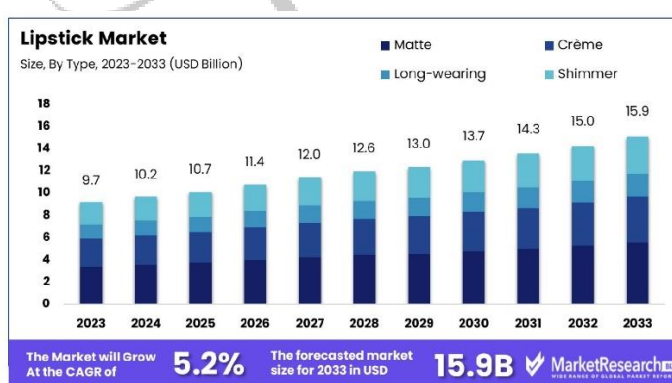


Figure 10: Lipstick market



**B. Conclusion: -**

The best alternative way forward is the use of natural or herbal lipsticks. This lavish and risk-free decor for the lips is fast replacing the traditional cosmetics. Their use is on the rise due to the concern with the impact of health issues fostered by the chemicals in make-ups which include lap and parabens.

**Key Findings:**

- ❖ **Safety and Skin advantages:** The structure of many herbal lipsticks is devoid of any harmful chemicals that make it possible for such products to be used even on sensitive skins. Additionally, the incorporation of natural oils (like jojoba oil, almond oil, coconut oil) and butters (like shea butter) in the compositions can further enhance moisturization and combat xerosis of the lips.
- ❖ **Natural Coloring:** Natural shades made from colored powders available in the market would consist of natural dye such as that obtained from beetroot or hibiscus or even turmeric. The colour range may be lower than that of synthetic ones but the natural shades pigments are non- toxic and hypoallergenic.
- ❖ **Ecological Consideration:** The eco- friendliness of herbal lipsticks is due to the organic and biodegradable components used in its production. Such compositions often do not contain petroleum based materials, plastic micro beads etc, which help in cleaning up the pollution heaped on the earth.
- ❖ **Barriers in Formulation:** One of the challenges faced in the development of herbal lipsticks is the issue of product stability and uniformity. Natural colors or pigments often tend to be dull as well as may lose their brightness with time. Moreover, the shelf life of such products can also be limited because the formulation will not contain any preservatives, other than natural ones. This means that the formulators will need to find a compromise on the amount of preservatives added and that of the product, which they want to be undamaged.
- ❖ **Customer Acceptance:** This has led to good acceptance of herbal lipsticks among the users but the trend has not fully reached the point of eradicating the lipsticks and especially white lipsticks.

**C. REFERENCES: -**

1. Mishra P, Dwivedi S. Formulation and evaluation of lipstick containing herbal ingredients [Internet]. Science-line.com. [cited 2024 Oct 25].
2. Benett W. Bennett's Cosmetic Formulary. New York: Chemical Publishing Company; 1983.
3. Sumeet D, Shefali K. Ethno medicinal uses of some plants species by ethnic and rural people Indore district of Madhya Pradesh. Pharmaceutical Review. 2008;6(3).
4. Chattopadhyay PK. Herbal Cosmetics and Ayurvedic Medicines, I ed. 2005;2:45–50.
5. Sunil R, Shekhar TC, Ashutosh B. Formulation and evaluation of a herbal lipstick : A new approach [Internet]. Pharmaerudition.org. [cited 2024 Oct 25].
6. Kaplan RP, Grant JN, Kaufman AJ. Dermatologic features of the fat embolism syndrome. Cutis [Internet]. 1986;38(1):52–5.
7. Romm S. On the beauty of lips. Clin Plast Surg [Internet]. 1984;11(4):571–81.
8. Lawate AZSB. REVIEW ARTICLE ON HERBAL LIPSTICK [Internet]. Ijprdjourn.com. [cited 2024 Oct 25].



9. Nanda S, Nanda A, Khar RK. Cosmetic Technology. In: Birla publication Pvt. New Delhi (India; 2007. p. 330–53.
10. Gediya SK. Herbal plants: Used as a cosmetics. Journal of Natural Product and Plant Resources [Internet]. 2011 [cited 2024 Oct 25];1(1):24–32.
11. S L. Herbal cosmetics and cosmeceuticals: An overview. Nat Prod Chem Res [Internet]. 2015;3(2).
12. Chattopadhyay PK. Herbal Cosmetics and Ayurvedic Medicines. National institute of Industrial Research. 2005;45–50.
13. Suganya K, Preethi PS, Suganya M, Nanthini UR. Natural Pigments in Cosmetics - Past to Present. International Journal of Pharmaceutical Sciences and Business Management. 2016;4(6):7–14.
14. Ilahy R, Hdider C, Lenucci MS, Tlili I, Dalessandro G. Phytochemical composition and antioxidant activity of high-lycopene tomato (*Solanum lycopersicum* L.) cultivars grown in Southern Italy. Sci Hortic (Amsterdam) [Internet]. 2011;127(3):255–61.
15. Srivastava S, Srivastava AK. Lycopene; chemistry, biosynthesis, metabolism and degradation under various abiotic parameters. J Food Sci Technol [Internet]. 2015;52(1):41–53.
16. Nadkarni A.K. Indian Materia Medica, 3rd ed, vol. II. Popular Prakashan, Mumbai..1975.
17. Jain, S., Padiyar, M., Birla, D., Mukherjee, J., & Sharma, S. (2018). Formulation and characterization of herbal lipstick using colored pigment of *Punica granatum*.
18. S. Ansari, Himani Ghildiyal, Sayantan Mukhopadhyay . A brief review on herbal lipsticks using natural colorants over synthetic colorants [Internet]. Researchgate.net. 2022 [cited 2024 Oct 25].
19. T. Pavithra, B. Kumar, Anand Mouna, Soujanya Munegowda. Formulation and Evaluation of Herbal Lipstick Containing Alkanet Root as a Natural Colorant [Internet]. Researchgate.net. 2022 [cited 2024 Oct 25].
20. Dusane AV, Tiwari MN, Patade PP. Novel Herbal lipstick formulations and their Quality control. Int J Sci Res Publ (IJSRP) [Internet]. 2020;10(3):9953.
21. Bachhav, D. G., Deore, L. P., Quraishi, S. R., Ghavate, V. B., & Rode, R. B. (2023). Formulation and evaluation of herbal lipstick. *Research Journal of Pharmacy and Technology*.
22. Rasheed, N., Rahman, S., & Hafsa, S. (2020). Formulation and evaluation of herbal lipsticks. *Research Journal of Pharmacy and Technology*.
23. Gajare, S., & Shivsharan, U. (2023). Formulation and evaluation of herbal lipstick from beetroot powder. *Research Journal of Topical and Cosmetic Sciences*.
24. Ralebhat, V., & Vikhe, S. (2022). Preparation and evaluation of herbal lipstick. *International Journal for Research in Applied Science and Engineering Technology*.
25. Yogesh B. Raut, Sanjay K. Bais, Sonali S. Arve. REVIEW ON DESIGN AND EVALUATION OF HERBAL LIPSTICK [Internet]. Ijprdjournl.com. [cited 2024 Oct 25].
26. Larsson SC, Bergkvist L, Näslund I, Rutegård J, Wolk A. Vitamin A, retinol, and carotenoids and the risk of gastric cancer: a prospective cohort study. Am J Clin Nutr [Internet]. 2007;85(2):497–503.
27. Anilkumar V, Kalyani R, Kumari SL, Lavanya A. Design, Development and Evaluation of Herbal Lipstick from Natural colour pigment. International Journal of Pharmacy and Pharmaceutical Research [Internet]. 2020;18(2):277–89.

28. Pandit D, Gujrati A, K S R. Formulation and evaluation of herbal lipstick from the extract of papaya [Internet]. Globalresearchonline.net. [cited 2024 Oct 25].
29. Bornare A, Tribhuwan T, Magare S, Shinde A, Tarkase S. Formulation an Evaluation of Herbal Lipstick". International Journal of Creative Research Thoughts. 2020;8:2390–7.
30. S Mali Y, Newad G, Z Shaikh A. Review on herbal lipstick. Res J Pharmacogn Phytochem [Internet]. 2022;113–8.
31. Mali RN, Deshmukh PT, Sakhare PT. Herbal cosmetics: A systematic review. Journal of Natural Products. 2022;
32. Gadge NN, Sonare SS. Comparative analysis of synthetic and herbal cosmetics with emphasis on safety. Journal of Pharmaceutical and Biomedical Sciences. 2023;
33. Raganathan V, Sundaram MP, Bhuvaneswari M. Eco-friendly cosmetic formulations using natural pigments. Journal of Green Chemistry. 2019;
34. Rasheed A, Shettar MR, Naik A. Formulation and evaluation of herbal lip care products. Asian Journal of Pharmaceutics. 2020;
35. Patel SM, Patel MS. The therapeutic potential of herbal cosmetics. International Journal of Cosmetic Science. 2021;
36. Basha BN, Prakasam K, Goli D. Formulation and evaluation of gel containing Fluconazole antifungal agent. Int J Drug Dev Res [Internet]. 2011;3(4):109–28.
37. Balsam MS, Sagarin E. Cosmetics Science and Technology [Internet]. Edward Sagarin MSB, editor. New York: Wiley Inter science Publication; 2008.
38. Gayatri D. karwate, Prajakta V. Muthal, Swati P. Deshmukh, Madhuri B. Wankhade. Formulation And Evaluations Of Beet Root Herbal Lipstick. Formulation And Evaluations Of Beet Root Herbal Lipstick [Internet]. 2024 May 29;02(Article Id IJPS/240205320):1–8.
39. Boskabady MH, Shafei MN, Saberi Z, Amini S. Pharmacological effects of rosa damascena. Iran J Basic Med Sci. 2011;14(4):295–307.
40. Malviya N. Isolation and quantification of lycopene from watermelon, tomato and papaya. Res J Recent Sci [Internet]. 2014 [cited 2024 Oct 25];3:68–70.
41. Kim J, Lee IS, Park S, Choue R. Effects of Scutellariae radix and Aloe vera gel extracts on immunoglobulin E and cytokine levels in atopic dermatitis NC/Nga mice. J Ethnopharmacol [Internet]. 2010;132(2):529–32.
42. Sharma KD, Karki S, Thakur NS, Attri S. Chemical composition, functional properties and processing of carrot—a review. J Food Sci Technol [Internet]. 2012;49(1):22–32.
43. Swetha Kruthika V, Shaik A, Ahmed S. Sraddha Deb Mallick, and T Ramya Sree. Formulation and Evaluation of Natural Lipsticks from coloured pigments of Beta Vulgaris Taproot. Journal of Pharmacy and Pharmaceutical Sciences [Internet]. 2014;3:65–71.
44. Al-Saleh I, Al-Enazi S. Trace metals in lipsticks. Toxicol Environ Chem [Internet]. 2011;93(6):1149–65.
45. Mhemeed AH. Quantitative Determination of some heavy metals in Lipsticks available in Iraqi market. J Phys Conf Ser [Internet]. 2020;1664(1):012091.

46. Kaushik I, Sharma H, Nirwal A, Fatima T. Modern herbal lipstick quality assessment and standard: A review. *IntJResPublRev* [Internet]. 2023;04(01):1474–8.
47. Niederer M, Stebler T, Grob K. Mineral oil and synthetic hydrocarbons in cosmetic lip products. *Int J Cosmet Sci* [Internet]. 2016;38(2):194–200.
48. Montenegro Peddis Torres CA, Paschuk SA, Narloch DC, Corrêa JN. Elementary characterization of metals in lipsticks by EDXRF. *Braz J Radiat Sci* [Internet]. 2021;9(1A).
49. Wang J, Kay AB, Fletcher J, Formica MK, McAlindon TE. Is lipstick associated with the development of systemic lupus erythematosus (SLE)? *Clin Rheumatol* [Internet]. 2008;27(9):1183–7.
50. Gao P, Liu S, Zhang Z, Meng P, Lin N, Lu B, et al. Health impact of bioaccessible metal in lip cosmetics to female college students and career women, northeast of China. *Environ Pollut* [Internet]. 2015;197:214–20.
51. Natural and Organic Lipstick Market by Type, growth, size and forecast – 2032 [Internet]. Marketresearchfuture.com. [cited 2024 Oct 25].
52. Inui S, Azukizawa H, Katayama I. Recurrent contact cheilitis because of glyceryl isostearate, diisostearyl maleate, oleyl alcohol, and Lithol Rubine BCA in lipsticks. *Contact Dermatitis* [Internet]. 2009;60(4):231–2.
53. Kurien BT, Scofield RH. Lipstick consumption and systemic lupus erythematosus: nothing to gloss over. *Clin Rheumatol* [Internet]. 2008;27(10):1339–40.
54. V. Anilkumar\* MDD. East Godavari, Andhra Pradesh. A Review on Herbal lipsticks VAnilkumar\*, MD Dhanaraju GIET School of Pharmacy [Internet]. 2021 Apr 30;
55. Vethachalam S, Persaud Y. Contact urticaria. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 [cited 2024 Oct 25].
56. Facd DD-S. Contact leukoderma [Internet]. DermNet®. DermNet; 2023 [cited 2024 Oct 25].
57. Kothari R, Shukla B, Gautam D, Bagaria M, Sharma A. Formulation and evaluation of herbal lipstick from natural edible colouring matter [Internet]. Researchtrend.net. [cited 2024Oct25].
58. Margaret A. Selling dreams inside the beauty business. JM Dent & Sons Ltd [Internet]. 1981;
59. Bashinski R. What the shape of your stick might say about you/ Freudian slip of the lip. New York: Daily News; 1999.
60. Nadkari AK. Indian Materica Media [Internet]. Mumbai II, Prakashan P, editors. G. R. Bhatkal, jointly for the Popular Book Depot (Regd.), Bombay 7 Dhootapapeshwar Prakashan Ltd., Panvel; 1975.
61. \*Dr. Arpitaben Desai and Ms. Pranjal Gupta. FORMULATION AND EVALUATION OF NATURAL LIPSTICK PREPARED FROM JAVA PLUM EXTRACT [Internet]. Wjpr.net. [cited 2024 Oct 25].
62. Sunil R, Shekhar T, Ashutosh B. Formulation and evaluation of a herbal lipstick : A new approach. 2013 [cited 2024 Oct 25];
63. Mawazi SM, Azreen Redzal NAB, Othman N, Alolayan SO. Lipsticks history, formulations, and production: A narrative review. *Cosmetics* [Internet]. 2022;9(1):25.
64. Ishu Kaushika, Himanshu Sharmab\*, Akansha Nirwalb, Tarannum Fatimaa A SMT Tarawati Institute of Biomedical and Allied Science, Roorkee 247667, India B Shri Ram College of Pharmacy, Parikrama Marg, Muzaffarnagar 251001, India.

65. Wang J. Process of making lipsticks [Internet]. Metacnbeauty Private label cosmetics. Metacnbeauty; 2023 [cited 2024 Oct 25].
66. Natural and Organic Lipsticks Market size and trends 2028 [Internet]. Techsciresearch.com. [cited 2024 Oct 25].
67. Detailed Market research Methodology. By Distribution Channel(Supermarkets / Hypermarkets, E-commerce, Multi Branded Retail Stores, Departmental/Grocery Stores, Others), By Region And Companies - Industry Segment Outlook. Market Assessment, Competition Scenario [Internet]. 2033;

