REVIEW ARTICLE JPAR 2021

Journal of Pharmaceutical Advanced Research

(An International Multidisciplinary Peer Review Open Access monthly Journal)

Available online at: www.jparonline.com

A Review on Herbal lipsticks

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Received: 05.02.2020 Revised: 16.03.2021 Accepted: 05.04.2021 Published: 30.04.2021

ABSTRACT: Cosmetics are the substance used to alter the appearance or fragrances of the human body. Nowadays the demands for herbal cosmetics in the world market are growing and are inevitable gifts of nature. There is a wide range of herbal cosmetic products to satisfy the need of women. In contrast to synthetic ones, herbal cosmetics are safe for human health. Herbal formulations like herbal lipsticks, herbal creams, herbal shampoos and herbal paste have always attracted considerable attention because of their good activity and comparatively lesser side-effects with synthetic materials. Herbal Cosmetics are defined as the beauty products which possess desirable physiological activity such as enhancing, soothing appearance, healing, conditioning properties because of herbal ingredients. Lipstick is the most widely used cosmetic added in the make-up to enhance the beauty of lips. Lipstick is a cosmetic product containing pigment, wax material, different oils, and emollients that apply colour, texture, and protection to the lips. The ingredients in the natural lipstick are all-natural and are safe to use. The herbal nutrient that keeps lips healthy. Regular use of synthetic colours in the lipstick may cause serious side effects such as skin discoloration, skin irritation, acne and cancer. The side effects can be reduced by using herbal colour extracts from different herbal sources. The present review focussed on lipstick background, types, formulation method, different colour pigment extractions, natural oils, bases, flavours, physical evaluation, Quality control of lipsticks in industries, moulding and defects in lipstick.

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Keywords: Herbal, Cosmetic, Lipstick, Lip anatomy, Women, Physiology.

INTRODUCTION:

According to D&C act 1940 and rules 1945, cosmetics means any article intended to be sprayed, poured, rubbed, or sprinkled on or introduced into, or applied to the human body or its any part for ablution, glamorize, promoting enchantment, or reshape the appearance [1]. Lipstick gets their colors from the diffusion of pigments and lake dyes however now not limited to Bromo acid, D&C Red No: 21, Calcium lake which includes D&C Red 7 and 34, and Orange No 17 [2]. The very first origins of lipstick data back to the Sumerian demesne of Ur in 5,000 BC. Over the centuries lipstick has been embraced and shunned by different cultures with swings for and against the product changing throughout history.

Ancient Egyptians loved lip paints and according to Pallingston, were masters at mixing color and precise application. In Roman days, the real lip colors were inverted for hustler, while the Ignoramus used the blue tone of the face and lip pint for men to impeach into battle. Lipstick was combined with Satan during the medieval days and it was not until Elizabeth Tudor that lipstick once again became an authorized and attractive prime aid. In 1770, lipstick one more time fell into blemish when the British Parliament passed a law condemning the use of lip paint. Similarly, the New York Board of Health considered banning it in 1924, fearing it might Poison men who kissed the women who wore it. During the Second World War, cosmetics and Distinct lipstick, gambol played an important psychological role as Governments performed the fundamental observances of the morale of the women who worked in munitions factories or other war work. Providing lipstick was a relatively inexpensive way of making women look and feel good. Lipstick, while little more than a decade before had been regarded as suitable only for fast women, became a priority product for the female market. Self-enrichment used by women has alternated markedly over the last decades. Today, with the specialized lipstick companies that sprang up during the nineties, lipstick has undergone resurgence in popularity to become an everyday commodity [3-5].

Women and beauty:

The link between beauty and cosmetics is perpetuated daily in the media and by advertising. The Society's commodification of Young girls as they strive to achieve an impossible likeness to the slim beautiful model image depicted intermittently in mass media. It also examined the metamorphosis of the body into a recognized perfect form, and suggested that it is through the consumer ritual of self-care that women 'normalize' their bodies to accomplish an image that is valued as the cultural norm [6,7].

Lipstick Background:

Cosmetics can be drawn back to ancient civilization. In particular, the use of lip colour was prevalent among the Sumerians, Syrians, Persians, Egyptians, Babylonians and Greeks. Later, Elizabeth I and the ladies of her court coloured their lips with red mercuric sulphide for years rouge was used to colouring both the lips and cheeks, bank on the dream up of the times. In western society during the latter half of the 19th century, it was generally concluded only immoral women work lipstick or makeup at all. It was not until the twentieth century that lipstick, and cosmetics in general, gained true social acceptance. Improvement in the builder of applicators and mental tubes reduced the cost of the cosmetics. This combined with new-fangled acceptance by the general population caused widespread use and popularity to increase. By 1915 push-up tubes were accessible, and the first claims of indelibility were made. Lipstick is made to appeal to the current fashion tendency and comes in a broad range of colours. Lipstick is made of dyes and pigments in a fragrance oil-wax base. The tubes that hold lipstick range from economical plastic dispensers for lip balms to ornate metal for lipsticks. Sizes are not uniform, but commonly lipstick is sold in a tube 3 inches (7.6 cm) in length and about 50 inches (1.3 cm) in diameter. The tube has two parts: a cover and a base. The base is made up of two compartments, the twisting or sliding of which will push the lipstick up for application. Since the manufacturer of the tubes involves completely distinctive technologies, we will focus on the manufacturer of lipstick only [7,8].

Herbal Cosmetics:

Herbal cosmetics have expanding demand in the world market and are a helpful gift of nature. There is a wide range of herbal cosmetics products to satisfy your beauty establishment, adding herbal in cosmetics is much protected for the skin. Human beings have been using herbs for disparate directions like food, medicine, beautifying with the advancement of science and technology use of natural things counting plants has been reduced except for food, vegetarian takes to plant and plant only. However, there is the rebound of the use of herbs both as drugs and cosmetics. Human skin acts as a protective barrier, through which natural ingredients penetrate. Therefore, consumers always search for natural-based cosmetics to avert allergic conditions or reactions and any sort of side effect lipstick is a lip tinting agent that has its primordial use dating back to the archaic age. At present, the popularity of this product has increased and the choice of its different shades, texture, and lustre has become very demanding [9,10].

Advantages of herbal cosmetic over synthetic cosmetics:

Herbal cosmetics are popular nowadays and are favoured over chemicals as these products afford nutrients to the body boost health and are free from synthetic chemicals and have no side effect as related to synthetic cosmetics. Some of the advantages of using

natural cosmetics which make them a better choice over synthetic ones are safe to use, compatible with body, natural in nature, affordable and non-expensive, variety of products, no side effects and not tested on animals [11,12].

Anatomy of lips:

The lips serve as an organ of prehension, suction, and speech. It is composed of the skin, superficial fascia, orbicular is a muscle and the muscles inserted around it (Areolar tissue and mucous membrane) the margins of the lips are capped with dry, red mucous membrane, continuous with the skin and containing numerous vascular papillae and touch corpuscles. The mucous membrane internally is reflected from the upper and lower lip upon the gums, and in the median line forms two folds of superiors and inferiors. The areolar tissue or submucous layer contains the coronary vessels which completely encircle the buccal orifice near the free margin of the lips. The coronary arteries arise from the facial. The superior coronary is larger than the inferior and anastomoses with its fellow of the opposite aide and gives off a small artery to the septum arterial septi nasi. Compression of this artery will sometimes control nasal haemorrhage. The nerve supplying the lower lip is derived from the mental foramen and sends large twings to the mucous membrane, the integument, and the fascia of the lip and chin. Some of the lymphatic vessels of the lips pass to a gland just above the body of the hyoid bone, while others pass to the submaxillary glands. The labial glands are in the submucosal layer of the lips around the orifice of the mouth. They secrete a mucous fluid. Mucous retention cysts develop when the ducts of these glands become occluded [13,14].

Difference between Lip and regular skin structure:

The lip is more attractive than the regular skin. Commonly the top corneum layer of regular skin has 15 to 16 layers mainly for protection purposes. The top corneum layers of the lip contain about only 3 to 4 layers and very thin compared to the typical face skin. The lip skin contains very few melanin cells because of this, the blood vessels more clearly appear through the skin of the lips that give a lovely pinkish colour of the lips. The lip skin has no hair follicle and no sweat glands therefore it does not have the sweat and body oil in protecting the lip from the outside environment [15].

The skin of the lips [16] has a bias to dry and develop small cracks, commonly when exposed to cold, dry air [17], which then makes this special skin extremely sensitive to another external impact. Lips must therefore be accorded special affliction and protection. Apart from this consideration, the purely fancy aspect of lipstick or lips of course plays a significant role [18], because of their convenience and functionality lipsticks occupy the dominant market position in the care and decoration of the lips. The ideal lipstick should be easy to apply and it should have a neutral taste. Light pressure on the stick should produce a film of fat that adheres well to the lips, leaving them smooth and supple, the film should not be greasy, sticky, or subject to smudging. In the case of decorative lipsticks, the goal is an indelible colouring of the lips coupled with firm adherence to the colouring matter. Regrettably the requirements for stability conflict with the ideal application properties. A lipstick must also be mechanically stable and temperature resistant, and it must not "Sweat" (That is there should be no visible separation of small oil droplets) with decorative lipsticks it is necessary to pay special attention to the stability of the colouring agents [19].

Lip disorders [15,20]:

***Swelling*:**

An allergic reaction can make the lips swell. The reaction may be caused by sensitivity to certain foods or beverages, drugs, lipstick, or airborne irritants. When a cause can be identified and then eliminated, the lips usually return to normal but frequently the cause of the swelling remains a mystery. A condition called hereditary angioedema may cause recurring bouts of swelling. Non-hereditary conditions such as erythema multiforme, sunburn, cold and dry weather, or trauma may also cause the lips to swell.

***Sun damage*:**

The sun damage may make the lips, especially the lower lip, hard and dry. Red speckles or a white filmy look signal damage that increases the chance of subsequent cancer. This type of damage can be reduced by covering the lips with a lip balm containing sunscreen or by shielding the face from the Sun's harmful rays with a wide–brimmed hat. Inflammation: with inflammation of the lips (Cheilitis) the corners of the mouth may become painful, irritated, red, cracked, and scaly. Cheilitis may result from a deficiency of vitamin B12 in the diet.

***Discoloration*:**

Freckles and irregularly shaped brownish areas (melatonin macules) are common around the lips and may last for many years. These marks are not caused for concern. Multiple, small, scattered brownish-black spots

may be a sign of a hereditary disease called peutz - jeghers syndrome, in which polyps form in the stomach and intestines. Kawasaki disease, a disease of unknown cause that usually occurs in infants and children 8 years old or younger, can cause dryness and cracking of the lips and reddening of the lining of the mouth.

***Sores*:**

A raised area or a sore with hard edges on the lips may be a form of skin cancer. Other sores may develop as symptoms of others. Medical conditions, such as oral herpes simplex virus infection or syphilis still others, such as keratoacanthoma, have no known cause.

Types of lipstick [20-23]:

Depending on the consistency, the solid lipstick is presented in ways that are lipstick stick, lipstick pencil, lipstick cream and liquid lipstick. Depending on the how much the secondary function, lipsticks are classified as;

- Moisturizing lipstick: It contains many moisturizing ingredients and most have SPF, protecting against Ultrasound radiation.
- Lipstick Nutritive: This type of lipstick is perfect for winter because it protects the lips against the cold.
- Lipstick Hygiene or treatment lipstick: It soothes the delicate skin on the lips, heals cracking, prevents herpes, and gives softness, natural shine.
- Depending on the how much to finishing, the lipstick are;
- Mattel has gloss and glitter and thick consistency.
- Satin are semi-opaque, have a slight stain sheen, are well pigmented and the texture is slightly silky.
- Amplified cream are creamy, have a slight sheen, they are well pigmented and the texture is quite creamy.
- Cremensheen are the cream base, are quite hydrated, pigmentation is medium to high and the anhydrous texture is quite silky.
- Frost is the lipsticks with a profusion of glittering particles, commonly called sparkling.
- Lustre is semi-glossy, has a slight pigmentation and a wet texture, similar to a gloss but is not vicious.
- Dazzles have gloss and glitter and a thick consistency.
- Glaze they are translucent, bright, and have low pigmentation.
- Depending on the how much the special features, the lipsticks are;
- Long-lasting lipstick- They stand for 8 to 24 h.
- Lipstick flavouring.
- Lipstick waterproof - It is a substance formulation resistant to water, allowing the lipstick not to go out of contact with it.

Depending on the how much colouring, the lipsticks are;

- Colourless lipstick.
- Lipstick with neutral colours.
- Lipstick with vibrant colours.

Mechanism of lipstick:

A lipstick swivelling mechanism includes a cup having a cup body for holding a lipstick bullet nosepiece for containing the cup and guiding the movement of the cup. A spiral rotatably connected the nosepiece, having helical guiding grooves formed on the inner surface thereof and a screw received within the spiral and detachably connected to the cup. The screw has double-helical protrusions, formed on the outer surface of the screw. The double-helical protrusions are received in and guided by the helical guiding grooves inside the spiral to make the screw and the cup move upward or downward when the spiral is rotated.

The basic manufacturing process of lipstick [24-26]:

The formulation of herbal lipstick involves the basic manufacturing process like;

***Pigment pre-milling*:**

The first step involved in the formulation of herbal lipstick is pigment pre-milling where the agglomerates in the powder are broken down to provide homogeneous smooth and even colour to the lipstick.

***Melting and Mixing*:**

The next step involves the melting and mixing stage, since waxes are solid at room temperature they cannot be mixed with other ingredients to make this process easy as the waxes are melted. It can be usually mixed with oil and melted to the melted base, the pigment and other additives are added and mixed to form a homogeneous product.

***Molding*:**

Molding is the actual step where the melted lipstick is poured into metal or plastic mold, the mix is poured while it is hot however it is beneficial to harden, and then it is removed from the mole with slight pressure.

***Flaming*:**

Flaming is the last step where the lipstick is passed through the flame, it is typically held and twisted in the flame for up to a second and then removed to avoid

melting and losing shape to obtain a glossy finish, and then it is placed in the containers.

Defects in lipsticks [27,28]:

***Formulation related problems*:**

- Sweating: It is the most common problem of lipstick formulation due to high oil content or inferior oil binding. It may arise in any climate or temperature range.
- Bleeding: This refers to the separation of colored liquids from the waxy base.
- Streaking: A thin line or band of a different colour or a substance appears on the finished product.

***Moulding related problems*:**

- Laddering: Lipstick does not look smooth or homogeneous after congealing and setting but instead has a multi-layered appearance.
- Deformation: This is a moulding problem where the shape of the lipstick looks deformed. It is noticeable and appears on both sides of the lipstick.
- Cratering: This appears in split moulding and it shows up flaming when the stick develops dimples.
- Mushy failure: This is a problem in which the central core of the lipstick lacks structure and breaks.

Quality Control of Lipsticks [29-32]:

Quality control Procedures are Strict since the Product must meet Food and Drug Administration (FDA) Standards. Lipstick is the only cosmetic ingested, and because of these strict controls on ingredients as well as the manufacturing process is imposed. Lipstick is mixed and processed in a controlled environment so it will be free of Contamination. Incoming material is tested to ensure that it meets the required specification. Samples of every batch produced are saved and stored at room temperature for the life of the product.

Colour control of lipstick is critical and one only has to see the range of colours available from a manufacturer to be aware of this. Colorimetric equipment is used to provide some numerical way to control the shades of lipstick. This equipment gives a numerical reading of the shade when mixed, so it can identically match the remaining lipsticks.

There are two special tests for lipstick that are heat and rupture tests. In the heat test, the lipstick is placed in the extended position in a holder and left at a constant temperature over of oven 130 °F (540 °C) for 24 h. There should be no drooping or distortion of the lipstick.

In the Rupture test, the lipstick is placed in two holders, in the extended position. Weight is added to the holder on the lipstick Portion at 30 s intervals until the lipstick ruptures. The pressure required to rupture the lipstick is then checked against the manufacture's Standards. Since there are no industry standards for these tests, each manufacturer sets its Parameters.

Herbal ingredients of Lipsticks:

***Bases*:**

Waxes form an important group of ingredients for the manufacturer of personal care products and decorative cosmetics. Waxes are used in different industries and products. They are predominantly used in candles, but also find important applications in food, cosmetic, and pharmaceutical industries as thickness or emulsifiers. Chemically, waxes are complex mixtures of hydrocarbons and fatty acids combined with esters. Waxes are harder, less greasy, and more brittle than fats. They are resistant to moisture, oxidization, and bacteria. There are four categories of waxes. The most widely used waxes for cosmetic products are Beeswax, Carnauba, and Candelilla wax [33,34].

Oils:

Oils and fats are different in their physical forms. Generally the latter is solid at room temperature, both fats and oils are chemically glycerol esters composed of glycerol and fatty acids and are also called triglycerides. Fatty acids can be saturated or unsaturated, thereby determining the stability and property of the oil. Oils with a high degree of saturated fatty acids (Lauric, Myristic, Palmitic and Stearic acids) include coconut oil, cottonseed oil, and palm oil. Oils with a high degree of unsaturated fatty acids (Oleic, Arachidonic, Linoleic acid) are Canola, Olive, Corn, Almond, Safflower, Castor and Avocado oil. The castor oil is used in many lipsticks because of its good qualities, though nowadays some other oils or solvents are being used.

A refined grade castor oil is of good colour, odourless and tasteless. Castor oil is a very good plasticizing agent. An antioxidant is added to the castor oil against rancidification as other vegetable oils like olive or almond oil. Almond oil is pale yellow oil with a slight characteristic odor. It consists of glycerides chiefly of oleic acid with smaller amounts of other acids namely linoleic, myristic and palmitic acid. It has emollient properties [35,36].

Colouring agents:

The colorants or colouring agents are mainly used to impart a distinctive appearance to cosmetic products. Colour has been used in cosmetics since early times. A desire to buy a cosmetic product is controlled by three senses namely sight, touch, and smell. As such, colour is an important ingredient of cosmetic formulation [37].

The colour is imparted to the lips in two ways: by staining the skin with a solution of dyestuff which can penetrate the outer layer of the lip skin and by covering the lips with a colored layer which serves to hide any skin roughness and give smooth appearances.

The first requirement is met by soluble dyes and the second one is met is insoluble dyes and pigments which make the film More or less opaque. The colours should be from the list of certified dyes under the drugs and cosmetic act [37]. The naturally occurring colours from different plant and fruit sources are given in Table 1. The colorants derived from natural sources should be non-toxic with no physiological activity. It should be a definite chemical compound because then only its colouring power will be reliable, its assay will be practicable and easier. It's tinctorial (coloring) power should be high enough so that only small quantities would be sufficient for use. Colorants should be unaffected by light, tropical temperatures, hydrolysis, and microorganisms, and therefore they must be stable on storage.

Table 1. The natural colouring agents [41,42].

Colour	Chromo-phore Plant	Sources
Purple blue	Antho-cyanin	Grapes, Blueberry, Pulm, Purple cabbage, Black berry
Green	Chloro-phyll	Avocado, kiwi, Cucumber, Spinch, Broccoli.
Yellow orange	Carote-niods	Papaya, pineapple, Pumkin, Carrot, Orange.
Red	Lyco-pene	Beetroot, Tomato, Strawberry, Water, watermelon, Pomegranate
White-tan	Antho-xanthines	Cauliflower, Potato, Ginger, Oninons, Banana.

Colorants should not be affected by oxidizing or reducing agents and pH changes and also should not interfere with the tests and assays water soluble colorants are equally desirable with oil-soluble and spirit soluble colours. The most important characteristic of colorants is compatibility with other ingredients (Table 2) and medicament. It should be free from objectionable taste and odour and must be readily available and inexpensive. Examples of natural colorants are obtained from Beetroot, saffron, Turmeric and Tomato [38-41].

Table 2. The natural ingredients [43,44].

Base	Oils	Flavouring agents
Cocoa butter	Coconut oil	Strawberry
Bees wax	Olive oil	orange
Carnauba wax	Castor oil	Saffron
Candelilla wax	Glycerine	Raspberry
Avocado butter	Arachis oil	Vanilla
Olive wax	Grape seed oil	Rose oil
Olive butter	Sesame oil	Cherry
Raspberry butter	Corn oil	Sandalwood

Flavouring agent:

Flavours or flavouring agents are usually required to mask the four basic taste sensations flavour refers to a mixed sensation of taste, touch, smell, sight, and sound all of which involve a combination of physicochemical and physiological actions that influence the perception of substances with the expansion of technology in the flavour industry, many artificial or imitation flavour has been created. The creation of acceptable flavours is more of an art than a science. Flavours are selected based on the taste of the drug or other ingredients that need to be incorporated (Table 3). Flavours used in a lipstick should not contain any ingredient which may be irritating or toxic. These should have good taste and should be able to mask the fatty door of the base. Flavouring agents are an essential component to mask the door of the fatty or wax base as well as to impart an attractive flavour [46,47].

Table 3. The natural masking flavours [45].

Taste	Masking Flavours
Salt	Butterscotch, Maple
Bitter	Wild cherry, Walnut, Liquorice, Chocolate-mint
Sweet	Fruit, berry, vanilla
Acid	Citrus

Flavouring agent:

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Extraction Process of various herbal colour pigments:

***Extraction of colour pigment from Beetroot*:**

Beetroot is the main supply box natural red dye called "Beetroot red". Betaine is the main part of the red colorants extracted from common beet. The roots bare most typically deep red-purple, however, are available a large kind of alternative shades, as well as golden yellow and red and white stripy. Extraction of pigment is by homogenization of equal ratio of fruit pulp and solvents (1/1 w/v). Take 100 g of the peeled fruit, of a watery consistency, and macerated it with 100 ml. Solvents (Ethyl alcohol and aqueous ethanol - 50: 50) for 15 min under ice bath. Centrifuge the aqueous mixture at 18,000 RPM, 40 °C for 20 min, and filter immediately through Nylon mesh by using rotary evaporation to concentrate the extract in vacuum at 350 °C, to 3 to 4 ml. Completely remove the alcohol through the concentration process and keep the samples in a dark vessel [48,49].

***Extraction of colour pigment from Pomegranate fruit*:**

The ripe pomegranate fruits were selected based on the red colour of the peel that indicated mature fruits and no black spots or blemishes for about a few seconds. After that, the arils of the fruit were then extracted with a maceration process in an alcoholic solvent (ethanol) in the ratio of 1:4, which means that 400 ml of ethanol was used to be macerated with 100 g of arils of fruits. The total amounts of arils were about 1000g, so the total amount of ethanol required was approximately 4 L. After 24 h extraction, the sample was then filtered with paper to obtain the red-purple filtrate. The filtration was required to filter several times to remove the residue and impurities. The red-purple filtrate that was leftover was clear liquid without sedimentation. Furthermore, the filtrates were then evaporated for approximately 5 days to remove the solvent in the dark [49,50].

***Extraction of colour pigment from Tomato*:**

About 100 g of tomato paste was taken in a beaker. About 30 ml of warmed (40 °C) Benzene was added to it, stirred it and benzene was decanted. The same procedure was repeated 5 times. Then benzene was distilled out to get lycopene extract. For identification of lycopene extracted from tomato, few crystals of lycopene were added to concentrated sulphuric acid. Then colour change was observed. If colour changes to Indigo blue then it can be confirmed that presence of Lycopene [51,52].

***Extraction of colour pigment from carrot*:**

The carrot is a fruit or vegetable containing a large amount of carotenoid compound and that can be used as a natural dye. Lycopene is the main part of the colour extracted from the carrot. Dry the fresh carrot at 40 °C in an oven. Coarsely powder the sample using a mixer grinder. Mix 50 g of this air-dried sample with 450 ml of 95 % ethanol. Then incubate it for 24 h and filter it. Evaporate the solvent under vacuum and keep extract at 40 °C [53,54].

***Extraction colour pigment from waste pineapple peels*:**

About a 6 g sample was prepared from pineapple peels and placed in a Soxhlet tube thimble and extracted using three different solvents (Methanol, acetone, and diethyl ether) respectively using a Soxhlet apparatus. The extraction time for each solvent was 45min until the solvent became colourless. The crude extract was directly transferred to a cooling centrifuge for about 10 min at 2000 RPM at 80 °C. The extracted sample was then dried using anhydrous Magnesium sulfate and the supernatant transferred to a lyophilised apparatus to remove all the excess, solvent (After the drying process all the solvents were recovered with a yield of 85 %) the best yields observed in the case of acetone then ether and methanol were (225, 220 and 112 mg/5 g) extract respectively [53,54].

***Extraction colour pigment from Turmeric*:**

The samples of dry turmeric were extracted using acetone and hexane (2:3 v/v). The oleoresin- containing

solvent (yellow pigment extract) was concentrated by rotary evaporation under vacuum at 40 °C and placed in a glass bottle and stored until used. Then the water-soluble turmeric yellow pigment or the liquid colour was developed from oleoresin (50 ml concentrate) by adding 10 ml of polysorbate (Tween 80) followed by mixing in the mixer for 2 min. The oil-soluble turmeric yellow pigment in petroleum ether and hence used for crystallization. To 50 ml of concentrated oleoresin in alcohol 100 ml of petroleum ether was slowly added and vortexed and manually for 10 min and allowed to stand for 30 min. The top layer was decanted, concentrated under vacuum at 40 °C and placed in a glass bottle, and stored at 40 °C until used [54,55].

***Extraction of colour pigment from Bixa orellana Linn (Annatto)*:**

The shade-dried coarsely powdered seeds of *Bixa orellana* (100 g) were extracted with ethanol (60 to 800 °C) for 18 h (1:2 ratios). After completion of extraction, the defatted extract was filtered through Whatman filter paper no 10 to remove any impurities if present. The extract was concentrated by vacuum distillation to reduce the volume to 1/10. The concentrated extract was transferred to a 100 ml beaker and the remaining solvent was evaporated on a water bath. The dark reddish colored extract was obtained. The concentrated extract was then kept in dedicators to remove the excessive moisture. The dried extract was packed in an airtight glass container for further studies [55,56].

***Extraction of colour pigment from Potato*:**

A certain proportion of citric acid and ethanol mixture was used to extract the purple sweet potato pigment by using the purple sweet potato wine vinasse powder by oscillation extraction for 90 min at 600 °C. The supernatant was recovered by centrifugation (5000 RPM, 5 min). The extraction was repeated 2 times and the supernatant was merged as a crude extract of purple sweet potato pigment [51,52].

***Extraction of color pigment from Watermelon*:**

About 100 g of a sample of watermelon taken in a 250 ml beaker. Then warm the paste and add about 30 ml of warm (400 °C) benzene to it. Stir well and decant the benzene layer. Again add 30 ml warm benzene, stir and decant the benzene. This has been done about 5 times then distinct off benzene and we got residue of Lycopene recrystallized residue by ether and weighed [56,57].

***Extraction of colour pigment from Dragon fruit*:**

The fruits were rinsed with distilled water, dried with a paper towel, and hand peeled. The peel was then freeze-dried using a freeze dryer and was ground into powder using a domestic blender. The sample was stored at -200 °C until further use. The extraction of the *H. polyrhizus* peel powder was conducted according to the previous method with some modifications. About 50 g of *H. polyrhizus* powder was extracted using distilled water at a ratio of (2:3 w/v) the extraction was carried out in an Innova 4000 incubator shaker at 300 °C for 2 h. Then the solution was filtered using Whatman no 4 cellulose filter paper. The filtrates were then concentrated by a rotary evaporator at 400 °C. For the antibacterial study, the dried extracts were dissolved in 5 % dimethyl sulfoxide (DMSO) [56,57].

***Extraction of colour pigment from Papaya*:**

About 100 g of a sample of Papaya taken in a 250 ml beaker. Then warm the paste and add about 30 ml of warm (400 °C) benzene to it. Stir well and decant the benzene layer. Again add 30 ml warm benzene, stir and decant the benzene. This has been done about 5 times then distinct off benzene and we got residue of Lycopene recrystallized residue by ether and weighed [58,59].

***Extraction of colour pigment from Red Cabbage*:**

The collected red cabbage was washed thoroughly and the leaves were sliced into small pieces and oven-dried at 50 °C. Dried plants (100 g) were extracted. The use of dry plants can be effective to minimize enzymatic degradation of phonetic compounds inside the plant tissues after overnight maceration, the extract was filtered through gauze, and water was evaporated under reduced pressure at 500 °C. After evaporation, the extract is lyophilized [60,61].

Physical Evaluation of lipsticks [56-66]:

***Colour and texture*:**

Formulated lipsticks were checked for colour, glossy and smooth texture.

***pH*:**

The pH of formulated herbal lipsticks was determined using a digital meter and pH paper.

***Determination of Melting Point*:**

Determination of melting point is an important Parameter for lipstick formulation; as it is an indication of the limit of safe storage. The melting point of

formulated lipstick was determined by the capillary tube method. Approximately 50 mg of lipstick sample was taken and melted and filled into a glass capillary tube opened at both ends. Capillary was cooled with ice for 24 h and increased with a thermometer. The thermometer with capillary was deep in the beaker containing full of water which was placed on a heating plate with a magnetic stirrer. Heating and stirring were started slowly at a fixed speed. The temperature at which material moves along the capillary tube was considered a melting point.

***Breaking Point*:**

This test was carried out to find out the value of maximum load that lipstick can withstand before it breaks. This test gives strength to lipstick. Prepared herbal lipstick was held horizontally in a socket inch away from the edge of support. 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.

***Determination of hardness*:**

Formulated lipstick from each formulation was selected randomly and measured using Monsanto hardness tester. The average result of each formulation was calculated and recorded.

***Determination of 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.

- Good: Uniform, fragments do not occur, perfect application, without deformation of lipstick.
- Intermediate: uniform, leave fragments, good application but with little deformed.
- Bad: Not uniform leaves many fragments, difficult to apply, and deformed.

***Softening Point*:**

Lipstick should be able to withstand a range of conditions to which it will be subjected in the consumer's handbag. It should be resistant to varying temperature conditions and be just as easy to apply in hot and an axe in cold weather. The softening point of lipstick was determined by the Ring and Ball method.

***Ring and Ball method*:**

A ring or support orifice is taken and prepared herbal lipstick was inserted into it. The extra mass above and below the orifice was removed using a sharp blade leaving tablets of lipstick fitted into the ring. This was placed in the refrigerator (60 °C) for about 10 min. The ring was tied onto a stand. A beaker containing 500 ml water at room temperature is placed on a hot plate with a magnetic stirrer. A steel ball was delicately placed on the lipstick tablet. The bar with support was then inserted into the beaker till it submerged into it. Heating and slow agitation using a thermometer. The temperature at which the lipstick mass and steel balls were loosed and fell to the bottom of the beaker was noted as a softening point of lipstick.

***Rancidity*:**

This test when carried out on dark-colored lipstick is likely to be vitiated because the endpoint in the determination of peroxide number may not be very sharp. In such cases, it is expected, as a good manufacturing practice manufacturer should check rancidity of lipstick raw materials, especially vegetable oil and other rancidity prone materials regularly in lipstick base mixtures without colours, by peroxide number test.

Reagents: Acetic acid, chloroform, Potassium chloride solution, saturated sodium thiosulphate- approximately 0.01N

Procedure: Weigh 5.0 and 0.05 g of lipstick sample in a 250 ml conical flask and dissolve in 30 ml of acetic acid-chloroform mixtures (3:2). Heat if necessary to dissolve the sample. Add 0.5 ml of freshly made saturated potassium iodide solution, shake and after two minutes add 30 ml distilled water and then titrate with 0.01N sodium thiosulphate solution using starch as an indicator. The peroxide number (PN) is calculated as per the equation given below.

$PN = ME \times A \times N \times 1000/MS$ ….(1)

Where, ME is Milli equivalents peroxide per 1000 g sample, A is volume in ml and N is Normality of sodium Thiosulphate solution and MS is Mass of sample.

***Microbiological test*:**

The test consists of plating a known mass of the sample on two selected culture media specifically suitable for the growth of bacteria and fungi and incubating them for a specified period to permit the development of visual colonies for counting.

Apparatus: Tubes of resistant glass provided which closely fit metal. Autoclaves of suitable size. They shall keep the uniform temperature within the chamber up to

and including the sterilizing temperature of 1200 °C. They shall be equipped with an accurate thermometer, located to register the minimum temperature within the sterilizing chamber, a pressure gauge, and properly adjusted safety valve, Petri dish, colony counter.

Media (Nutrient Agar Medium): Dissolve 5 g of yeast extract (or meat extract), 5 g sodium chloride, and 10 g peptone in 1000 ml of distilled water contained in a 2 lit beaker by heating on a water bath. Add 25 g of powdered agar and continue boiling until the agar is completely dissolved. Adjust the pH to 7.4 with sodium hydroxide solution using a pH meter or comparator. Filter while hot through lint cloth placed in a funnel and dispense into tubes in 20 ml quantities. Close the tubes with metal caps or cotton and sterilize in an autoclave at 121 °C and 1.05 kg/CMG pressure for 20 min. After autoclaving, store the tubes in a refrigerator.

Procedure: Weight and transfer aseptically four 0.5 g portions of the sample to four melted nutrient agar tubes, shake the tubes to mix the contents thoroughly, and pour into sterile Petri dishes. Incubate the nutrients agar tubes at 370 °C for 48 h. Determine the average number of colonies per gram of the sample on nutrient agar tube.

***Surface anomalies*:**

This was studied by the surface defects, such as the formation of crystals on the surface, contamination by moulds, fungi, the formation of wrinkles, exudation of liquid substances and solid fatty substances.

***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. Various parameters such as bleeding, streaking, catering, and blooming were observed.

***Perfume stability*:**

The prepared herbal lipsticks were tested for 30 days, to record fragrance.

***Skin irritation test*:**

It is carried out by applying the product on the skin for 10 min and any sign of irritation is observed.

CONCLUSION:

In the last few decades, there has been a tremendous boost in the use of cosmetics by women. However, the hazards caused by these chemicals have come into the limelight very recently. Consumers can take safe and effective advantage of herbal lipsticks after thorough clinical trials. Compared to other beauty products, natural cosmetics are safe to use. Synthetic colouring agents may cause allergic reactions and be found to be carcinogenic. The ability to desire the right cosmetics for you depends on accurate ingredient knowledge, body Prakriti assessment, personal needs, customer perception about the product, and benchmark product. Quality control for the ability and safety of herbal cosmetic products is of predominant importance. So quality control tests must be carried out for herbal cosmetics. It is assumed to be safe for longer periods.

ACKNOWLEDGEMENT:

Author wish to thanks GIET School of Pharmacy, AP, for providing the library support to complete this review study.

REFERENCES:

1. Kadu M, Vishwasra S, Singh S. Review on Natural Lip Balm. Int J Res Cosmet Sci, 2015; 5(1): 1-7.
2. Diamond RL, Montaga W. Histology and cytochemistry of human skin XXXVI. The nose and lips. Arch Dermatol, 1976; 112: 1235-1244.
3. Zuckerman C. Dermatologic features of the fat embolism syndrome. Cutis, 1986; 38: 116-120.
4. Romm S. On the beauty of lips. Clin.Plastic Surg, 1984; 11(4): 571-581.
5. Deweck AC. The sweating of lipsticks. Cosmet Toiletries, 1981; 96(1): 29-32.
6. Mitsui T. New cosmetic science. 1st ed. USA: Elsevier; 1997.
7. Nanda S, Nanda A, Khar RK. Cosmetic Technology. 1st ed. New Delhi (India): Birla publication Pvt. Ltd; 2007. pp. 330-352.
8. Harshad SD, Wankhade AB. Design and characterisation of Nutraceutical lipstick of Beetroot Powder. Innovative International Journal of Medical and Pharmaceuticals Sciences, 2019; 4(2): 1-4.
9. Harry RG, Wilkinson JB. Harry's Cosmeticology. 6th ed. London: Leonard Hill Books and Interest Publisher; 1973.
10. Sharma PP. Cosmetics-Formulation, Manufacturing and Quality Control. 4th ed. India: Bandana Publication Pvt. Ltd; 2008.
11. Mitral BM, Saga RN. A Handbook of Cosmetics. 1st ed. New Delhi, India: Vallabha Prakashan; 2000.
12. Sharma AV, Sharma PV. Flavouring agents in Pharmaceutical Formulation. Anc Sci Life, 1988; 8: 38-40.

13. Basha BN, Prakasam K, Goli D. Formulation and evaluation of gel containing Fluconazole antifungal agent. Int J Drug Dev Res, 2011; 3: 4-10.
14. Balsam MS, Sagarin E. Cosmetics Science and Technology. 2nd ed. New York: Wiley Inter science Publication; 2008.
15. Allan KV, Kumar GP. Colorants the cosmetics for the Pharmaceutical dosage form. Int J Pharmacy Pharm Sci, 2011; 3: 13-21.
16. Chaudhari NP, Chaudhari NU. A review on Herbal lipstick from different natural colouring pigments. Indian J Drug, 2018; 6(3): 174-179.
17. Kadian SS, Sharma A. Stability and application of crude beetroot extract in different food products. Int J Biol Pharmacy Allied Sci, 2013; 2(3): 693-698.
18. Abdeldaiem MH, *et al*. Use of yellow pigment extracted from Turmeric (*Curcuma longa*) Rhizomes powder as Natural food Preservative. Am J Food Sci Tech, 2014; 2(1): 36-47.
19. Malviya N. Isolation and quantification of Lycopene from Watermelon, Tomato, and Papaya Red J Recent Sci, 2014; 3: 68-70.
20. Indian Standard (IS) (1990): Lipstick (PCD 19: Cosmetics).
21. Balsam MS, Sagarin E. Cosmetics Science and Technology. 2nd ed. New York: Wiley International science publication; 2008. pp. 209-512.
22. Deshmukh S, Chavan M, Sugar M, Singh S. Preparation and evaluation of natural lipsticks from *Bixa orellana* seeds. Int J Pharm Bio Sci, 2013; 4: 139-144.
23. Harry RG, Wilkinson JB. Harry's Cosmeticology. 6th ed. London: Leonard Hill books and Interest Publisher; 1973.
24. Margaret A. Selling dreams inside the beauty business. London: JM Dent & Sons Ltd; 1981.
25. Bashinski R. What the shape of your stick might say about you/ Freudian slip of the lip. New York: Daily News; 1999.
26. Nadkari AK. Indian Materica Media. 3rd ed. Vol. II. Mumbai: Popular Prakashan; 1975.
27. Korac RR, Khambholja KM. Potential of herbs in skin protection from Ultraviolet radiation. Pharmacogn Rev, 2011; 7: 164-173.
28. Shivanand P, Nilam M, Viral D. Herbs play an important role in the field of cosmetics. Int J Pharm Tech Red, 2010; 2: 632-639.
29. Navarre MG, editor. The chemistry and Manufacturer of Cosmetics. 2nd ed. Vol.1. New York: Wiley- Inter science; 1974.
30. Hart RG, editor. Harry's Cosmeticology. 6th ed. London: Leonard Hil! Books; 1973. pp. 140-156.
31. Nema RK, Rathore KS, Dubey BK. Text of cosmetics. 1st ed. New Delhi (India): CBS Publishers and Distributors; 2009. pp. 69-81.
32. Katiyar SK, Elmets CA. Green tea polyphenols skin protection and antioxidant (Review). Int J Oncol, 2001; 18: 1307-1313.
33. Mukhtar H, Katiyar SK, Agarwal R. Green tea and skin anti-carcinogenic effects. J Invest Dermatol, 1994; 102: 3-7.
34. Muley BP, Khadabadi SS, Banaase NB. Phytochemical constituents and pharmacological activities of *Calendula officinalis* (Asteraceae): A review. Trop J Pharm Res, 2009; 8: 455-465.
35. Okoh OO, Sadimenko AP, Asekeen OT, Afolayan AJ. The effects of Drying on the chemical components of Essential oils of *Caledula officinalis*. Afr J Biotechnol, 2008; 7: 1500-1502.
36. Athar M, Syed MN. Taxonomic perspective of plant species yielding vegetable oils used in cosmetics and skin care products. Afr J Biotechnol, 2005; 4: 36-44.
37. Itami S, Kurata S, Sonoda T, Takayasu S. Characterization of 5 alpha-reductase in cultured human dermal papilla cells from beard and occipital scalp hair. J Invest Dermatol, 1991; 96(1): 57-60.
38. Ozkur MK, Bozkurt MS, Balabanli B, Aricioglu A, Ilter N, *et al*., The effects of EGB 761 on lipid peroxide leaves and superoxide dismutase activity in sunburn. Photodermatol Photoimmunol Photomd, 2002; 18: 117-120.
39. Jain A, Dubey S, Gupta A, Kannojia P, Tomar V. Potential of herbs as cosmeceuticals. Int J Res Appl Pharmacy, 2010; 1: 71-77.
40. Dixit SN, Srivastava HS, Tripathi RD. Lawsone, The antifungal antibiotic from leaves of *Lawsonia inermis* and some aspects of its mode of action. Indian Phytopathol, 1980; 31: 131-133.
41. Brown RP, Gerbarg PL, Ramazanov Z. *Rhodiola rosea*: A phytomedical overview. HerbalGram, 2002; 56: 40-52.
42. Furmanowa M, Skopinska RE, Rogala E, Malgorzata H. *Rhodiola rosea in-vitro* culture: phytochemical analysis and antioxidant action. Acta Soc Bot Pol, 1998; 67: 69-73.

43. Chaudhary G, Goyal S, Poonia P. *Lawsonia inermis* Linnaeus: A phytopharmacological review. Int J Pharm Sci Drug Res, 2010; 2: 91-98.
44. Pandey S, Meshya N, Viral D. Herbs play an important role in the field of cosmetics. Int J Pharm Tech Res, 2010; 2: 632-639.
45. Shuster S, Black MM, Mcvitie E. The influence of age and sex on skin thickness, skin collagen and density. Br J Dermatol, 1975; 93: 639-643.
46. Nayak BS, Jena PK, Dindha SC, Ellaiah P. Phytochemical investigation and *in vitro* evaluation of anthelmintic activity of *Gmelina arborea roxb.* fruit extracts. Asian J Chem, 2012; 24(8): 3445-3448.
47. Khanpara K, Renuka V, Shukla J, Harsha CR. A Detailed Investigation of shikakai (*Acacia concinna*) fruit. J Curr Pharm Res, 2012; 9: 6-10.
48. Aslam MN, Lansky EP, Varani J. Pomegranate as a cosmeceutical source: pomegranate fractions promote proliferation and procollagen synthesis and inhibit matrix metalloproteinase-1 production in human skin cells. J Ethnopharmacol, 2006; 103: 311-318.
49. Tournas JA, Lin FH, Burch JA, *et al*., Ubiquinone, idebenone, and kinetin provide ineffective photoprotection to skin when compared to a topical antioxidant combination of Vitamins C and E with ferulic acid. J Invest Dermatol, 2006; 126: 1185-1187.
50. Nayak L, Sahu BP. A review on Herbal Medicine and Health. J Pharm Adv Res, 2018; 1(1): 1-7.
51. Craig WJ. Health-promoting properties of common herbs. Am J Clin Nutr, 1999; 70: 491S-499S.
52. Kadam VS, Chintale AG, Deshmukh KP, Nalwad DN. Cosmeceuticals an emerging concept: A comprehensive Review. Int J Res Pharmacy Chem, 2013; 3: 308-316.
53. Barreto JC, Trevisan MTS, Hull WE, Erben G, De Brito ES, Pfundstein B. Characterization and quantitation of polyphenolic compounds in bark, kernel, leaves, and peel of mango (*Mangifera indica)*. J Agric Food Chem, 2008; 56(14): 5599-5610.
54. Scartezzini P, Speroni E. Review on some plants of Indian traditional medicine with antioxidant activity. J Ethnopharmacol, 2000; 71: 23-43.
55. Cabral C, Francisco V, Cavaleiro C, Gonçalves MJ, Cruz MT, Sales F. Essential Oil of *Juniperus communis* alpina (Suter) Celak Needles: Chemical Composition, Antifungal Activity and Cytotoxicity. Phytother Res, 2012; 26(9): 1352-1357.
56. Melvina M, Dorothy G, Frank M, Joanne E, Margaret S, Cheryl S. Herbal Therapies and Diabetes among Navajo Indians. Diabetes Care, 2005; 28(6): 1534-1535.
57. Anis E, Anis I, Ahmed S, Mustafa G, Malik A, Choudhary MI. Alpha-glucosidase inhibitory constituents from *Cuscuta reflexa*. Chem Pharm Bull, 2002; 50(1): 112-114.
58. Yang L, Chen Q, Wang F, Zhang G. Antiosteoporotic compounds from seeds of *Cuscuta chinensis*. J Ethnopharmacol, 2011; 135(2): 553-560.
59. Rehman HU, Yasin KA, Choudhary MA. Studies on the chemical constituents of *Phyllanthus emblica*. Nat Prod Res, 2007; 21(9): 775-781.
60. Tiwari V, Kuhad A, Chopra K. *Emblica officinalis* corrects functional, biochemical and molecular deficits in experimental diabetic neuropathy by targeting the oxido-nitrosative stress mediated inflammatory cascade. Phytother Res, 2011; 25(10): 1527-1536.
61. Sukanya DH, Lokesha AN, Datta G, Himabindu K. Phytochemical diversity in ashwagandha (*Withania somnifera*). J Med Aromat Plants, 2010; 1(2): 27-30.
62. Mishra LC, Singh BB, Dagenais S. Scientific basis for the therapeutic use of *Withania somnifera* (Ashwagandha): A Review. Altern Med Rev, 2000; 5(4): 33-38.
63. Ruan B, Kong LY, Takaya Y, Niwa M. Studies on the chemical constituents of *Psoralea corylifolia*. J Asian Nat Prod Res, 2007; 9(1): 20-25.
64. Zhao G, Li S, Qin GW, Fei J, Guo LH. Inhibitive effects of *Fructus psoraleae* extract on dopamine transporter and noradrenaline transporter. J Ethno Pharmacol, 2007; 112(3): 498-506.
65. Pino JA, Bayat F, Marbot R and Aguero J. Essential oil of *Chamomilla recutita* (Linn.) Rausch. J Essent Oil Res, 2002; 14: 407-408.
66. Panda S, et al. Preparation and evaluation of Herbal Lipstick. J Pharm Adv Res, 2018; 1(2): 117-119.

Conflict of Interest: None
Source of Funding: Nil
Paper Citation: Anilkumar V, Dhanaraju MD. A Review on Herbal lipsticks. J Pharm Adv Res, 2021; 4(4): 1179-1190.