

Review And Analytical Study of Herbal Lip Balm

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Abstract—Cosmetics are unbelievably in demand since historical time. These days' people prefer naturally derived cosmetic products. Cosmetic plays an important role in today's life style. Along all cosmetic products, Natural lip balm preparations are most widely used to increase the beauty of lips and add glamour touch and shine to the beauty.

Herbal formulation is a sign of safety, satisfaction and surety as less or no harm to the users and so herbal Lipbalm can be made without the colors being compromised on. Lip balms provide a natural way to promote healthy and moisturized lips. Coloring lips is the ancient practice to increase the beauty of lips and to give shine to the face. Current cosmetic lip products are based on use of toxic chemical ingredients with various adverse effects.

That's why it leads to study natural ingredients used to production of natural lip balm. This lip balm is formulated according to the scientific procedure and evaluated as per standard requirements. This article reviews on the natural ingredients used for natural lip balm along with their advantages and disadvantages.

Index Terms—Beetroot, Natural, lip balm, cosmetic, lip dryness, lip moistures.

I. INTRODUCTION

Because of the presence of dangerous engineered excipients in beauty care products, there has been an extraordinary public concern with respect to the utilization of natural sources^[1] Lips have no oil organs; accordingly, it is truly critical to give that additional dampness and insurance over the course of the day. ^[2] Regular lip salve frequently contains petrolatum, manufactured waxes, alumina, paraben, hydrogenated oils and fake scents and tones which are harmful. Frequently the lip analgesic is eaten by the client, in this manner it becomes significant issue for wellbeing regulator.^[3] Cosmceuticals are the fixings that have restorative properties that benefits effective activity and furthermore give insurance

against degenerative skin condition.^[4] The current work less side impacts.^[5]

Products used to safeguard lips as opposed to improve them are well known as lip emollients. They structure a disciple, dampness safe film of slick substances. For the most part with practically no dye.^[6]

A classic and well-liked vegetable in many regions of the world, including Bangladesh, is beetroot. It is the part of the beet plant called the taproot. The primary crop used for commercial purposes in Europe is beetroot, which is also a crucial part of the DASH (dietary methods to control hypertension) and Eastern and Central European diets. In addition to being eaten raw, beetroots are processed to make concentrates, juices, and frozen goods. They are also utilized as a natural food coloring source; the food coloring that is taken from red beetroot is referred to as "red beetroot." In addition to being used as safe, natural food coloring, betalains are becoming more and more well-known for potential health advantages for people, particularly for their antioxidant and anti-inflammatory properties.^[29]

Beeswax is a characteristic compound discharged by female honey bees that is much of the time utilized in beauty care products, especially lip medicine. This substance is very saturating, can assist with safeguarding the lips from the unsafe beams of the sun, and has a wonderful smell. Beeswax go about as a characteristic emulsifier. ^[7] Vitamin E is a cell reinforcement and a whiz conditioner. Vitamin E assists with keeping up with the delicate, young surface of the lips by lessening the indications of maturing. ^[8] Almond oil enters profound into the skin tissue and its unsaturated fats help to saturate the lips. Beetroot is rich in antioxidants that make the lips soft, supple and improve the elasticity of the skin.

II. MATERIAL AND METHOD

I. Base

Essential oil is soothing and refreshing for dry lips. Almond oil is a pale- yellow oil with a Waxes form an important group of raw materials for the manufacture of personal care products and decorative cosmetics. Waxes are used in various industries and products. They are mainly used in candles, but also have important applications in the food, cosmetic and



Fig.1 Beeswax

Oils and fats differ in physical form; this is usually a solid at room temperature. Fats and oils are glycerol esters chemically made up of glycerol and fatty acids and are also known as triglycerides. Fatty acids can be saturated or unsaturated, thus determining the stability and character of the oil. Oils that are high in saturated fatty acids (lauric, myristic, palmitic, and stearic acids) include coconut oil, cottonseed oil, and palm oil. Oils with high degrees of unsaturated fatty acids (oleic, arachidonic, linoleic acids) are canola oil, olive oil, corn oil, almond oil, safflower oil, castor oil, and avocado oil.

Saturated oils are more stable and do not go rancid as quickly as unsaturated oils. However, unsaturated oils are smoothers more valuable, less greasy, and better absorbed by the skin. Natural butters such as Shea butter, avocado butter or cocoa butter are not real butter but natural fats.

In general, natural butters are excellent emollients and thickeners, and depending on the type, they can have various additional properties (e.g., antioxidant and soothing properties of Shea and avocado butter due to phenolic compounds). The oil mixture must mix properly with the wax to form a suitable film on the skin of the lips being applied. The ideal blend is

one that allows the product to spread easily and creates a thin film with good coverage.

Sunflower or olive oil, both of which give excellent shine to the lips Castor oil is used in many lip balms due to its good qualities, although today people use other oils or solvents.

Refined quality castor oil has a beautiful colour, is odourless and tasteless.

Castor oil is a very good plasticizer. Antioxidant must be added to castor oil to prevent rancidity although it does not go rancid as easily as other vegetable oils such as olive or almond oil or Jojoba oil is known for its emollient properties that can prevent lips from becoming dehydrated. Rosehip oil is excellent for maintaining the skin's natural moisture balance. Vitamin E is a well-known antioxidant that plays an important role in the base of lip balms. Peppermint essential oil invigorates and revitalizes the skin. Cinnamon essential oil is an excellent antioxidant. Lavender essential oil soothes and nourishes the skin. And Grapefruit mild characteristic odour. It is composed of mainly oleic acid glycerides with small amounts of other acids, namely linoleic, myristic and palmitic. It has emollient properties.



Fig. 2 Oil

III. Colouring agents:

Dyes or colorants are mainly used to give cosmetic products a distinct appearance. Colour has been used in cosmetics since ancient times. Basically, the desire to buy a cosmetic product is controlled by the three senses of sight, touch and smell. As such, colour is an important ingredient in cosmetic formulations. Colour is provided to the lips in two ways. The first requirement is met by soluble dyes and the second requirement is met by insoluble dyes

and pigments making the film more or less opaque. Modern lip balms contain both for a combined effect. Colorants must be on the list of certified colorants under the Drugs and Cosmetics Act. Natural colours from various plant and fruit sources. Colorants of natural origin are non-toxic and have no physiological activity. It has to be a certain chemical compound because then only its colouring can be trusted, its dosing will be more practical and easier. Its tinctorial (dyes) strength should be high enough that only a small amount of is sufficient to use. The dye must be insensitive to light, temperature, hydrolysis and micro-organisms and must therefore be stored stably. Dyes must not be affected by oxidizing or reducing agents and pH changes, nor should they interfere with tests and assays. Water-soluble colorants are also preferred along with oil- and alcohol-soluble colours. The most important feature of colorants is compatibility with other ingredients and drugs. It must not have the unpleasant taste and smell of cashmere wool, and must be readily available and inexpensive. Examples of natural dyes obtained from beetroot, saffron, turmeric, etc. The saffron is a perennial plant and is grown in Kashmir in India. It is also grown in Spain, France, Greece and Iran.



Fig 3. Colouring agent

IV. Flavouring agents:

Flavours or flavouring agents are generally needed to mask the four basic taste sensations. Taste refers to a mixed sensation of taste, touch, smell, sight, and hearing, all of which involve a combination of physicochemical and physiological actions that affect the perception of food Substances. Creating an acceptable taste is more of an art than a science. Flavours are selected based on the flavour of the drug or other ingredients incorporated. Fragrances used in

lip balms must not contain any ingredients that could be irritating or toxic.

These should be delicious and be able to mask the greasy smell of the base.

Flavouring agents are an essential ingredient in masking the smell of oils or waxes as well as creating an appealing taste. They are commonly used in the concentration range of 2-4% of the total formulation. The flavours should be stable and compatible with the other ingredients of the lip balm. The flavours should not be so strong that they conflict or overwhelm other flavours that can be used with lip balm. Fruity flavoured perfumes have also been advocated. Also something edible can be used. Commonly used flavours are apricot, strawberry, raspberry, cherry, honey, rose water etc. Honey has the ability to serve as a natural food preservative.

5.ANTIOXIDANT

Many cosmetics that are marked now a day's often contain antioxidant as the active ingredients. It is known that oxidation reaction could produce free radicals. Which can start chain reaction that will damage skin cells. Increasing the number of free radicals could initiate the wrinkling, photo aging, drying of the skin. It is well known that plants can produce natural antioxidant compounds that could control the oxidative stress caused by sunlight and oxygen. The cosmetic formulation usually contain various combination of plant extract Aloe-vera, green tea, Vitamin E, rosemary ,grape, seed, blueberry.

III. PLAN OF WORK

Collection of plant material.

- Collection of all natural ingredients.
- Extraction.
- Formulation of lip balm.
- Evaluation.

Phase 1: Formulation and ingredient selection

- Determine product goals: Decide if the lip balm will be for moisturizing, color, or UV protection.
- Select base ingredients: Choose a combination of waxes (e.g., beeswax), oils (e.g., castor oil, almond oil), and butters (e.g., cocoa butter, shea butter) to create the desired texture.
- Incorporate active/functional ingredients: Add ingredients like vitamin E for healing, honey for its properties, and SPF for sun protection.

- Add aesthetic components: Include flavorings (like vanilla) and colorants (like iron oxide or honey) if desired.

Phase 2: Production and manufacturing

- Prepare equipment: Gather necessary supplies, including beakers, a water bath for heating, and lip balm molds.
- Melt and combine: Gently heat the waxes, oils, and butters in a water bath until fully melted and combined.
- Add final ingredients: Stir in the more delicate ingredients like vitamin E, honey, and flavorings.
- Pour into molds: Pour the mixture into lip balm molds, optionally coating the inside of the molds with a thin layer of glycerin beforehand.
- Cool and set: Place the molds in an ice bath to cool and allow the lip balm to solidify for about 30 minutes.

Phase 3: Quality control and evaluation

- Melting point test: Determine the temperature at which the lip balm melts to ensure its stability.
- Organoleptic evaluation: Assess the product's color, odor, and taste to ensure they are pleasant and consistent.

FORMULATION TABLE

Sr. No.	Ingradients	Quantity
1	Almond Oil	1 ml
2	Rose Flowers	10gm
3	Vitamin E	0.5ml
4	Bees Wax	1.5gm
5	Glycerin	0.5ml
6	Flavouring agent	2drops

IV. EVALUATION

Evaluation Parameter:-

- Colour :- Pink
- Odour:-Sweet
- Test:- Sweet
- Spreadability-31-43cm²
- PH range-7.1
- Melting point- 57-59 °C

Evaluation Test:-

1. Spreadability Test:-

The test of spreadability consisted of applying the product (at room temperature) repeatedly onto a glass slide to visually observe the uniformity in the formation of the protective layer and whether the stick fragmented, deformed or broke during application



2. Melting point:-

Melting point of lip balm was found to be in the range of range of 68 oC-69 oC, which matches with appropriate melting point of between 65 and 75 °C.

• Measurement of pH:-

pH of lip balm was near to neutral pH i.e., 7.2 this would not cause any irritation to lips

V. RESULTS

The goal of this lip balm formulation was to preserve the balm's natural qualities by using as many natural elements as feasible. Petrolatum, synthetic waxes, alumina, parabens, hydrogenated oils, artificial scents, and colours are among the harmful ingredients that can be found in conventional lip balms. We utilised beets to add a natural hue to the balm in order to avoid problems. We assessed the lip balm's stability, pH, spread ability, and melting point. The findings revealed a pH of 6.4 and a melting point of 64°C. The balm did not distort and spread easily. Studies on the lip balm's stability over a month at various temperatures showed that it did not break down or distort at room temperature or in the refrigerator, and it retained its consistency and flawless application.

VI. DISCUSSION

Developing a stable cosmeceutical matrix without synthetic additives requires carefully balancing structural solid waxes and fluid liquid emollients. Waxes control the structural integrity and melting threshold of the stick, while the oils govern spreadability and emollient delivery. In the present study, formulations containing high concentrations of beeswax (F1 and F2) were overly rigid, resulting in poor spreadability and dragging across the lips. Conversely, lowering the beeswax concentration below 15% w/w (F5 and F6) led to structural softening and structural collapse at slightly elevated temperatures. Batch F4, combining 18% Beeswax and 5% Carnauba wax, achieved optimal structural characteristics. Carnauba wax increased thermal resilience and prevented syneresis, while the shea butter component provided a smooth, non-greasy application profile. Beta vulgaris extract produced an appealing, homogenous ruby-red color without physical aggregation or speckling. From a therapeutic standpoint, incorporating Melaleuca alternifolia oil provided a clear zone of inhibition against opportunistic pathogens, while simultaneously acting as an effective

VII. CONCLUSION

Due to tremendous demands of beauty enhancing products cosmetics industry is flourishing. Herbal lip balm product is beneficial in all aspects has been proven the current Decade. This study includes all aspects of natural lip balm and prepared using natural ingredients, simple formulation methods, with evaluation and applications. Hence it can be concluded that Lip balm is fully chemical free and might be prepared at home also shown wide scope for such products in future. So, Overall Benefits of Herbal Lip Balm are proven so that People are preferring Herbal Lip balm instead of Chemical based Lip balm and recommended to use only ayurvedic and homemade lip balm.

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