Formulation and Evaluation of Banana lip Balm

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ABSTRACT

Since ancient times, there has been a tremendous demand for cosmetics. The emphasis has moved more toward naturally derived cosmetics these days .The synthetic source's ingredient has numerous negative effects, but the word "herbal" is a sign of safety. Lip balm formulations are the most popular among all cosmetic products because they enhance the beauty of lips and give a glamorous touch to makeup .The lip balm is resistant to changes in temperature outside and other factors .Lip balm is a product that works well for all genders and is simple to apply [(1)]. The idea behind our product is a long-lasting natural lip balm that can be made with naturally occurring base, coconut oil, banana powder. Banana powder which can be evaluated for their variation pleasant and flavor and smoothness during application adherence and easy intentional removal etc. Current cosmetic lip product are based on use of toxic chemical ingredient with various adverse effect [(1)]. That's why leads to study natural ingredient used to production of natural lip balm. This article reviews on the natural ingredients used for natural lip balm along with their advantages and disadvantages.

Keywords; Lip balm, Lips, Banana Powder, Natural ingredients.

1. INTRODUCTION

Skin it covers the entire body, the skin is the largest organ in the body. It acts as a barrier against heat, light, injury, and infection.

The Skin is also used for

a) Prevent water loss.

b) Storing fat and water.

c) Prevent the entry of bacteria.

d) Maintain body temperature.

Genetics determines the type of skin, but it will also be Additional variables may vary over time based on these traits. Normal, dry, oily, combination (combining oily and dry skin), and sensitive are the five types of healthy skin. Cosmetics are important in today's lifestyle. To live a more natural lifestyle, almost every industry is currently going green, including the cosmetics sector. For a healthy lifestyle, natural foods, herbal remedies, and natural healing techniques are the best options. There is also a high demand for organic vegetable products. The use of herbal cosmetics in personal care products has multiplied many fold. Traditional medicine has made use of natural products. For thousands of years for various purposes all over the world. Numerous possess pharmacological qualities like cytostatic, anti-inflammatory, and antimicrobial effect. They are known to be beneficial for human medicine. Herbal extracts are grown all over the world and are well-known in the horticultural industry. Because of their consistency. Herbal extract-based cosmetics for skin and hair care are highly well-liked. Herbal cosmetics come in a variety of formulations. The word "herbal" denoted safety in contrast to synthetic products, which have a number of negative health effects on people. The main function of lip balm, which is a wax-like substance applied topically, is to create an occlusive layer on the lip surface that seals moisture in the lips and shields them from the elements to the lips to try to provide relief from drained or dry lips, cold sores, stomatitis, and angular inflammation the mouth distinct from the skin's structure, consisting primarily of 15–16 layers for protection. On the other hand, compared to the normal facial skin, the top corneum layer of the lips is extremely thin and only consists of 3-5 layers. The skin on the lips is devoid of melanin cells. As a result, blood vessels are more visible through the lip skin and give the lips a lovely pinkish hue. There are no sweat glands or hair follicles on the skin of the lips. As a result, it lacks body oil and perspiration to shield from the elements [(2)].

1.1 ANATOMY OF LIPS

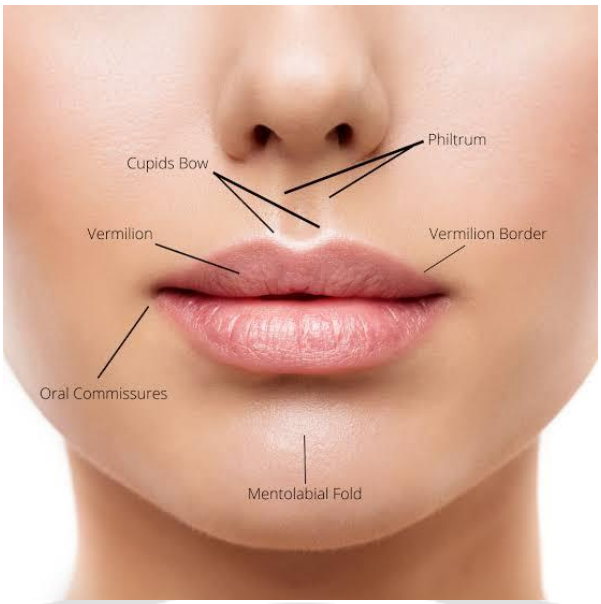

Fig.no 1 Anatomy of lip balm

1.2 LIPS:

The lips function as speech, suction, swallowing organs. It consists of up of the muscles that are inserted surrounding it (areolar tissue & mucous membrane), the skin, superficial fascia, and the orbicularis muscle. Dry, red mucous membrane that is continuous with the skin and has many touch corpuscles and vascular papillae covers the lip edges. The mucous membrane forms two folds, superior and inferior, in the median line, reflecting off the gums of the upper and lower lips. The coronary vessels, which completely surround the buccal orifice close to the free edge of the lips, are found in the areolar tissue or submucous layer[(4)]. The superior and inferior coronary arteries, which emerge from the face, are the coronary vessels. Compared to the inferior coronary, the superior coronary is bigger and anastomoses with Its counterpart on the other side, the septum arteriaseptinas, receives a little artery from it. There are occasions when nasal hemorrhage can be controlled by compressing this artery. The inferior coronary vein empties into the facial vein slightly below the superior labial vein; however, the main branch from the lower lip usually descends to the submental vein, which is then to the facial or frequently to the anterior jugular. The superior labial, also known as the coronary vein, starts as a plexus in the orbicularis muscle of the upper lip, passes with the coronary artery, and drains into the facial vein a little below the alae of the nose of the veins which would rain the lower lip[(3)]. The mental, which arises from the bone through the mental foramen and sends big twigs to the mucous membrane, the integument, and the fascia of the lip and chin, is the source of the nerves supplying the lower lip. While some of the lip's lymphatic veins go to the submaxillary glands, others flow to a gland located directly above the hyoid bone's body. There are labial glands in the layer of tissue beneath the lips surrounding the mouth's opening. They release mucous secretion the development of mucous retention cysts occurs when these glands' ducts obstruct[(5)].

1.3 LIP DISORDER:

a) SWELLING - Lip swelling can be caused by an allergic reaction. Sensitivity to specific foods or beverages, medications, lipstick, or airborne allergens could be the cause of the reaction. The lips typically return to normal after the cause has been found and removed. However, the reason behind the swelling is often still unknown. Hereditary angioedema is a condition that can result in periodic episodes of swelling. Lips can also swell due to non-hereditary conditions like trauma, erythema multiform, sunburn, cold, and dry weather[(6)].

b) SUN DAMAGE - Lips, particularly the lower lip, may become dry and hard from sun damage. A white, filmy appearance or red spots indicate damage that raises the risk of developing cancer later on. Wearing a wide-brimmed hat to protect the face from the sun's harmful rays or applying lip balm containing sunscreen can help prevent this kind of damage.

c) INFLAMMATION - The corners of the mouth may become painful, irritated, red, cracked, and scaly when there is lip inflammation. A vitamin B12 deficiency in the diet may be they caused [(7)].

d) DISCOLORATION - Around the lips, freckles and atypical brownish patches called melanotic macules are common and can persist for many years. These markings don't warrant alarm. Numerous tiny, dispersed brownish-black spots could indicate Peutz eghers syndrome, a genetic condition that causes polyps to develop in the

intestines and stomach. Kawasaki disease can cause lips to become dry and cracked, as well as reddening of the mouth lining. It is an unknown disease that typically affects infants and children 8 years of age or younger [(7)].

e) SORES - A lip sore with hard edges or a raised area could be a sign of skin cancer. Other sores could appear as signs of other illnesses like syphilis or an oral herpesimplex virus infection. For some others, like keratoacanthoma, the cause is unknown [(6)].

f) Allergic Contact Chelitise - The use of personal hygiene products, such as toothpaste and mouthwash, which contain a variety of antibacterial agents, essential oils, and preservatives, is the most frequent cause of contact Chelitise [(8)].

1.4 LIP BALM:

Lip balms are products that are applied to the lips to shield them from the elements and stop them from drying out. There are a lot of chemical-based lip balms on the market right now from brands like Nivea, Himalaya, Blistex, The Body Shop, and so on. There isn't much information on this kind of formulation in the cosmetic literature, but since it's a cosmetic form akin to lip balm, references to lipstick are relevant. Similarities include resistance to temperature changes, a pleasant taste, innocuousnes , smoothness during application, adherence, and ease of intentional removal, among other organoleptic and stability requirements. Considering that lip balm is a product meant for both men and women to use, it should not be confused with lip gloss. Creating lip balm the concentrations of the primary ingredients, such as butters, oils, waxes, and other excipients, must be balanced. To guarantee they have healthy, glowing skin, many people look for anti-aging lotions, weekly facials, daily skin scrubs, and a host of other products. However, lip care is frequently overlooked in favor of healthy skin. Natural lip balms provide a natural means of preserving and advancing lip health. Since lip balms are frequently consumed by the user, it is essential that health regulators examine the ingredients of lip balms at a microscopic level. When consumed by humans, the lip balm's coloring dyes pose a risk to health [(9, 10. 11)].

1.4.1 Advantages of Lip balm -

a. Lip balms contribute to preserving the lips' inherent health and beauty.

b. It has been demonstrated that sunblock lip balms shield lips from damaging UV radiation.

c. Both men and women can use them; they are not gender-specific products.

d. Lip balm products aid in preventing chapping, dryness, and cold sores on the lips.

e. The product's contact with the skin should not result in a feeling of friction or dryness and should enable a uniform layer to form over the lips to shield the labial mucous from environmental elements like pollution, dryness, and UV rays.

f. It revitalizes, and treats lip-related symptoms brought on by allergies, colds, and the flu.

g . Contact of the product with the skin will not cause a sensation of friction or dryness and should allow the forming of a homogeneous layer over the lip in order to product the labial mucosa susceptible to environmental factors such as UV radiation dryness and pollution .

h. Using natural lip cosmetics to improve the skin's condition and facial appearance [(10 12 13)].

1.4.2 Disadvantage Of Lip balm

a. Lip balms with inferior ingredients have the potential to cause severe lip damage. These lip balms might dry out your lips rather than hydrate them.

b. Addiction to lip balms is another drawback that comes with using them.

c. Homemade lip balms typically disappear from the lips faster than those made in a manufacturing facility. So you must frequently reapply.

d. Some businesses make lip balms without taking into account the softness of the skin or the health advantages. These products will progressively tarnish the lips' natural color, gloss, and softness.

e. It is more difficult to obtain naturally derived colors and flavors, and there are problems with the products stability

f. Other drawbacks of natural oils include their greasiness, comedogenicity, and decreased spreadability[(14)].

1.4.3 CHARACTRISTICS OF LIPBALM

a) Resistance to temperature changes

b) Pleasant flavor

c) Application smoothness

d) Innocuousness

e) Adherence and simple, deliberate removal.

1.4.4 APPLICATION OF LIP BALM:

a) Lip balms are products that are applied to the lips to shield them from the elements and stop them from drying out.

b) Natural lip balm is a product that both men and women can use.

c) The concentration of the primary ingredient in the lip balm, which includes oils, wax, and other excipients, must be balanced.

d) Because lip balm is frequently eaten away by usage, regulators examine the ingredients in the balm at a microscopic level.

2.LITERATURE REVIEW

Fernandes A.R. et. al., (2013) – have studied rising global demand for natural products whose production is harmless to the environment has stimulated the development of natural cosmetics and, within this category, organics (95% organic raw materials). The imageof environmentally friendly production is one of the strongest attractions of organic products. Lip balm isa cosmetic product similar to lipstick whose purpose is to prevent lip dryness and protect against adverse environmental factors.

Kadu M. et. al., (2015) – have focused on cosmetics are incredibly in demand since historicaltime. These days focus shifted more towards naturally derived cosmetic products. Among allcosmetic products, lip balm formulations are most widely used to enhance the beauty of lipsand add glamour touch to the makeup. Lip balms offer a natural way to maintain and promotehealthy lips. Current cosmetic lip products are based on use of enormous chemical ingredientswith various side effects.

Pugliese P.P. et. al., (2017) – have studied vitamin E was first found to be essential forreproduction in 1922, but it was not until 1936 that Herbert McLean Evans discovered vitamin E and its chemistry through a series of rat- feeding studies and named it
tocopherol.1 The name “tocopherol” is from the Greek words tokos, meaning “childbirth,” and pherein meaning “to carry.” The “ol” at t he end of the word designates it as an alcohol.

Kaul S.et. al., (2010) - have overviewed of medicinal plants have always been the principlesources of medicine in India. Since ancient past and presently they are becoming popular.
Various system of medicine including Ayurveda reveals the uses of several herbs in the treatment of human ailments. There has been a rapid extension of allopathic system of medical treatment in our country during the past century and due to severe and high adverse effects the knowledge of traditional medicine came into light with ancient experiences. The present paper emphasis the in digenesis ayurvedic knowledge of 80 species belonging to different families used in the treatment of various human disease anddisorder

3. AIM, OBJECTIVE AND NEED

AIM:

Formulation and evaluation of banana lip balm.

OBJECTIVE:

a) Using lip balms is a natural approach to preserve and enhance healthy lips.

b) To give the lip surface an occlusive layer.to keep moisture in lips and shield them from the elements.

c) It is believed that tomatoes' lycopene helps prevent cancer.

d) It is packed with nutrients, one of which is an antioxidant known as lycopene.

e) Offers heart protection. Rich in antioxidant. Supports the upkeep of healthy blood vessels .It also aids in blood pressure regulation.

NEEDS:

a) Your lips have thinner skin than the rest of your face.

b) Using a lip balm will ensure that your lips are well hydrated and will heal more quickly if you are experiencing dry, chapped lips.

c) You will understand how embarrassing it is if you have ever had chapped, peeling, or cracked lips.

d) Your lips will become supple and less chapped overnight as a result of this replenishment.

e) Using lip balm in the summer is just as important as it is during the winter months.

f) You should also protect the skin on your lips from the damaging sun's rays.

4. PLAN OF WORK

SELECTION OF DRUG

- BANANA

SELECTION OF EXCIPIENTS

- Bees Wax
- Cocount Oil
- Ghee
- Banana Powder
- Vitamin E Capsule
- Honey

EVALUATION PARAMETER

- Stability Testing
- Spread ability Testing
- Colour Analysis
- Greasiness
- Melting Point
- Skin irritation Test

5. DRUG AND EXCIPIENT PROFILE

5.1 BANANA:

Banana is high nutritional content, affordable price, and year-round availability, bananas are the most popular fruit. They are produced annually in 540 states. Thousand metric tons, or 27% of all the production in the Arab world (AOAD, 2008). Because of their high moisture content and high metabolic activity after harvest, banana fruits are highly perishable and deteriorate quick. Almost half of the bananas grown worldwide are consumed raw as a fruit for dessert; the other half are cooked, usually through boiling, roasting, frying, or baking. Cultural preferences determine the choice of whether to eat almost all varieties raw when ripe or cooked when ripe or green. Additionally, bananas can be processed in a variety of ways to extend their shelf life and yield additional uses. Nowadays, new economic approaches to using bananas are being explored. For example, making banana flour could boost the use of bananas. An inexpensive food industry ingredient that can be used in place of less banana waste is green banana flour [(21)].

5.1.1 SCIENTIFIC CLASSIFICATION:

Kingdom	Plantae
(unranked)	Angiosperm
(unranked)	Monocots
(unranked)	Commelinids
Order	Zingiberales
Family	Musaceae
Species	Musa Balbisiana
Biological name	Musa Sapientum
Genus	Musa

Table No (1) Classification of Banana[(22)]

Fig no 2. Banana

5.1.2 CHEMICAL CONSTITUENTS:

- Phenolic compounds.
- Alkaloids
- Flavonoids
- Tannins
- Saponins
- Glycosides
- Carotenoids
- Sterols
- Triterpenes
- Catecholamines

5.1.3 Uses and Properties:

- Healthy source of fiber
- Potassium
- Vitamin B6
- Vitamin C
- Various antioxidants
- Improve blood sugar levels.
- Prevent constipation.
- Improve gut, kidney, and heart health.
- Aid in weight loss.
- Keep you feeling full
- Support post-exercise recovery.

5.1.4 HEALTH BENEFITS:

- Maintain kidney health.
- Protect your cancer.
- Effect of Hyperglycemia.
- Helps to lower the Cholesterol and B.P.
- Prevention from ulcer.
- Benefits for depression.
- Benefits of Phenolic compounds in Banana.
- Helps in menstrual relief.
- Helps Digestion Process[23].

5.1.5 Uses of banana in Cosmetics :

- Content anti wrinkled ingredients.
- Gently nourish
- Exfoliate
- Brighten out and even out skin tone.

5.2 BEES WAX:

The natural wax known as "beeswax" is created by Apis honey bees. Eight wax-producing glands in the worker bees' abdominal segments form the wax into scales, which the bees then discard in or near the hive. The workers in the hive gather it and use it to make cells for storing honey and protecting the larvae and pupae inside the hive

Fig no 3. Bees wax

Synonyms: Yellow Wax, Ceraalba

Biological Source: Bees wax is the purified wax obtained from honey comb of Hive Bee, Apis

Mellifera , Linn.

Family : Apidai

Chemical Constituents: - Beeswax contains myricin , which is melissyl palmitate; melting point64°C, free cerotic acid (C26H52O2), myricyl alcohol (C30H61OH) is liberated when myricyl palmitateis saponified . Melissic acid, some unsaturated acids of the oleic series, ceryl alcohol, and 12 to 13% higher hydrocarbons are present.

5.3 VITAMIN E CAPSULE:

Fig no 4. Vitamin E Capsule

Synonym: alpha-tocopherol.

Colour: A Yellow to Yellowish brown, clear and viscous liquid,

Odour: faint characteristic odor.

Biological Source: Vegetable oils (such as wheatgerm, sunflower, safflower, corn, and soybean oils) Nuts (such as almonds, peanuts, and hazelnuts/filberts) Seeds (such as sunflower seeds) Green leafy . vegetables (such as spinach and broccoli)

Chemical constituent: vitamin E refers to a group of eight different compounds: α-, β-, γ-, andδ-tocopherolsandthe corresponding four tocotrienols.

Use: a) Vitamin E helps maintain healthy skin and eye.

b) Vitamin E also has antioxidant property.

5.4 COCONUT OIL:

Fig no. 5 Coconut oil

Coconut oil is a natural moisturizer that feels like a moisturizer on the lips and makes them soft forms a lipid layer on the skin that reduces water evaporation and drying contains sun protective factor (spf) Therefore, a that protects the delicate skin of your lips from the harmful rays of the sun the oil is antibacterial and prevents the growth of bacteria and other pearls created on the lips It is good for the skin and chapped lips reducing inflammation coconut .The oil promotes the production of and heals damaged lips.

You may have coconut oil in your cupboard, which works well as a natural remedy for dry lips. Interest in coconut oil as a natural skin care component has grown due to its hydrating properties. The oil can be applied to the lips in addition to being used occasionally as a treatment for dry skin on the entire body[24].

The use of coconut oil as a natural remedy for many skincare issues, such as lip care, has increased. It has a lot of properties that might be good for the lips, like moisturizing and perhaps antibacterial activity. One of the fatty acids in coconut oil that might help hydrate and moisturise the lips is lauric acid. Applying coconut oil topically helps create a barrier and prevent moisture loss, keeping lips supple and velvety. Two compounds present in coconut oil, lauric acid and caprylic acid, have antimicrobial properties. Should you experience issues such as dry or cracked lips, these traits might aid in avoiding bacterial or fungal infections on the lips. Coconut oil can be a natural moisturizer and possibly even have antimicrobial qualities [25].

For thousands of years, people in tropical places have consumed coconut oil, an edible oil. Given its lengthy shelf life [26].

5.4.1 USES:

- The main benefit of coconut oil is its moisturizing effect.
- This makes it ideal for chapped lips.
- Your lips are specific sensitive to moisture, because the skin is thin and exposed to the elements more than other parts of the skin [27].
- Coconut oil is moisturizing and emollient, so it will probably leave your lips feeling more hydrated rather than parched. If you frequently get chapped, dry lips, make sure you're getting enough water in your body and try applying an SPF lip balm before you go outside [28].

5.5 HONEY:

Fig no .6 Honey

Since honey is a naturally occurring humectant, it draws and holds onto moisture to keep your lips moistened all day. Additionally, honey's anti-inflammatory qualities might help relieve chapped lips. If your lips crack, the antibacterial qualities of honey can help shield you from getting sick. Using honey lip balm has several advantages. Wounds on the lips have been found to be moisturized and disinfected by honey. Honey-based lip balm is available for purchase or can be prepared at home.

Honey might aid in the moisture retention of lips. It serves as a moisture barrier to shield the lips from the outside elements that deplete the skin's natural moisture content. Honey serves as a natural defense in this sense. Over top of chapped and dry lips. Honey can prevent lips from in addition to keeping them hydrated. Honey's

inherent antibacterial qualities make it beneficial for wound care. This is why applying honey to cuts or sores on the lips may be beneficial .It's typical for honey lip balms to contain additional substances. Almond oil, Shea butter, and mint are a handful of the components found in lip balms made with honey. Additional substances are typically added to improve the effectiveness of a honey lip balm. For instance, almond oil helps maintain the moisture content of lips [(2)]. As a natural humectant and emollient, honey also contains vitamins b1 and b6 (nourishment), promotes the growth of new skin cells (softening lips), has anti-inflammatory effects on chapped lips, shields the lips from the damaging effects of free radicals, has antibacterial and antiseptic properties to prevent bacterial infection, and, thanks to its high vitamin C content, relieves the symptoms of chapped lips. Beehives are pressed to extract raw honey, which is subsequently refined into pure honey [(3).]

Family : Apidae

Synonym : Madhu , Madhvika

Biological Source: Honey is a viscid and sweet secretion stored in the honey comb by variousspecies of bees, such as Apis Mellifera , Apis dorsata, Apis florea, Apis indica and other species.

Chemical Constituents:

The average composition of honey is as follows:

- Moisture : 14–24%,
- Dextrose: 23–36%,
- Levulose (Fructose) : 30–47%
- Sucrose0 : 4–6%
- DextrinandGums : 0 –7% & Ash0.1–0.8%.

Besides, it is found to contain small amounts of essential oil, beeswax, pollen grains, formic acid, acetic acid, succini acid, maltos ,dextrin, colouring pigments, vitamins and mixture of enzymes.

Uses:-

1) It is used in treating burns and wounds.

2) It is used in natural cough syrup.

3) It is help to improve digestion.

4) Used to the sweetning agent.

5) Used to the moisturizing.

6) Helps to the hydrated lips.

5.6 GHEE:

Fig no. 7 Ghee

Synonym: Clarified

Description: butter

Colour: Yellowish or golden

Odour: Milky sweet odour

Biological source: Ghee is a form of highly clarified butter that is traditionally used in Asian cooking like butter, ghee is typically made from cow's milk. Ghee is made by melting regular butter. The butter separates into liquid fats and milk solids.

Geographical source: INDIA , USA, Australia and New Zealand.

Chemical constituent: Chemically ghee is a complex lipid of glycerides (usually mixed),free fatty acids ,phospholipids, sterols ,sterol esters, fat soluble vitamins ,carbonyls ,hydrocarbons ,carotenoids(only in ghee derived from cow milk) ,small amounts of charred case in and traces of calcium ,phosphorus ,iron ,etc.

Uses: Has Healthy Fats. Research proves that ghee is slow in fat helps Digestive system. Ghee consumption is strongly related to ahe healthy gut strength immune system.

Source of Essential Vitamin:

- Anti- inflammation.
- Anti-cancer.
- Boon for Lactose In tolerant.
- Treats Burns.
- Healthy Skin.

6 .EXPERIMENTA WORK

6.1 MATERIAL AND METHODS:

6.1.1 Preparation of banana powder :

Fully Mature and Ripe Banana

↓

Steamed for 10 – 45 min

↓

Peeled and sliced into cubes

↓

Treated with Citric Acid (2%) for 10 min

↓

Dried for 60 degree C

Pulverized and Sieved

Packed and stored banana powder

6.2.2 Procedure and Formulation of Lip Balm:

Weight all the excipient

Add bees wax, ghee, coconut oil in beaker and melt in water bath at 55 to 60 d C

Add honey, banana powder and vitamin E into beaker and mix vigorously so that honey will not clump and add into the lip balm mould

Before pouring the mixture in moulds; on the mould applying glycerin with the help of cotton

Put the filled moulds into ice bath for 10 min

Final product of lip balm

7. COMPOSITION OF LIPBALM

INGREDIENTS	QUANTITY	USES
Bees wax		Impart Glosiness, hardness
Ghee		Moisturizer
Coconut oil		Emulsifier
Honey		Lighten up the darkness
Vitamin E		Antioxidant ,maintain the stability.
Banana Powder		Flavouring agent

Table No (2) Composition

8. RESULTS AND DISCUSSION

6.1. Organoleptic characteristics

Sr.No	Physical Parameter	Methods	Observation
1	Colour	Visual Observation	Cream
2	Appearance	Visual Observation	Smooth
3	Odour	Smelling by nose	Pleasant

Table No 4.organoleptic characteristics

8.1.1 Test of Spreadabilty

The product was applied repeatedly to a glass slide at room temperature in order to visually observe the uniformity in the formation of the protective layer. This was done as part of the spreadability test.

Fig no 8. Spreadabilty Test

8.1.2 Melting Point

The apparatus for determining the melting point of lip balm. A sample of lip balm was placed in a glass capillary with one end flame-sealed in order to ascertain the melting point. The medication-filled capillary was submerged in liquid paraffin inside the melting point apparatus, which had a magnetic stirring mechanism.

Melting was assessed visually, and the point of melting was noted. A pH meter was used for the measurement.

8.1.3 Stability Testing

For 30 days, the lip balm was prepared and subjected to accelerated stability studies at three different temperatures: room temperature (25.0 ± 3.0 ºC), refrigeration (4± 2.0 ºC), and oven temperature (40.0 ± 2.0 ºC). Its spreadability, melting point, and organoleptic characteristics were assessed after 30 days.

Fig no .9 Stability studies of lip balm at different temperature

At room temperature (25.0 ± 3.0 ºC) and refrigeration (4± 2.0 ºC), the prepared lip balm was observed to exhibit G-Good (uniform, no fragmentation, perfect application, without any deformation), and I (intermediate: uniform, leaves few fragments, appropriate application, little deformation at oven temperature (40.0 ± 2.0 ºC).

9 .CONCLUSION

• During the stability test, the formulation stored at room temperature and in the refrigerator exhibited comparable behavior.

• The spreadability was rated as "Good," and the organoleptic characteristic was stable.

• Because the product's functionality was preserved, storage under these circumstances was deemed sufficient.

• Lip balm that has been prepared spreads well at room temperature.It was determined that organic lip balm can be a better option for treating various lip issues.

• The developed formulation of organic lip balm exhibited an appropriate melting point (mean of 69oC) during the stability test.

• The results of the spreadability tests indicated that storage in the oven (40.0 ± 2.0°C) was not recommended due to the loss of product functionality observed during the normal stability test.

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