

Formulation of Herbal LIP Balm from Selenicereus Undatus

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Abstract:- Lips are soft and delicate and so are very prone to damage by drying, scaling, chapping. Lipbalms can provide protection to lips from these damages. Some organic colorants used to tint the lipbalms can be hazardous to health. Also, there is a shift from synthetic to herbal products for skin care. Considering these, this herbal lipbalm was made up and coloured by pigment extracted from dragonfruit pigment additive. According to the survey conducted on volunteers, the colour, odour and visual appearance of the lipbalm was found to be very good, excellent and very good respectively. The consistency and glossiness were found to be excellent and the spreadability of the lipbalm was found to be very good. There was no irritation to any volunteer after applying the lipbalm. Recently, the need for herbal merchandise is increasing especially within side the cosmetics industry. Lip balm is one of the extensively used beauty merchandise that functioned as a shade of protection to the lip and may contain subdue numerous poisonous results of lead and technology of oxidative pressure. Red Dragon Fruit (*Hylocereus polyrhizus*) contains an effective antioxidant amaranth colorant referred to as betacyanin pigment. Looking at this benefit, this research aims to analyze the antioxidant activities of betacyanin pigment in lip balm from the peel of Red Dragon Fruits. The finding indicated antioxidant properties contained in lip balm from the peel of Red Dragon fruit result changed into 2.0% using in house method based on International Food Research Journal.

Keywords:- Herbal Lipbalm, Selenicereus Undatus.

INTRODUCTION

Lips are soft and delicate and so are very prone to damage by drying, scaling, chapping. Lipbalms can protect lips from these damages. Some organic colorants used to tint lip balms can be hazardous to health. Also, there is a shift from synthetic to herbal products for skin care. Considering these, this herbal lip balm was made up and colored by pigment extracted from dragonfruit pigment additive.

According to the survey conducted on volunteers, the color, odor, and visual appearance of the lip balm was found to be very good, excellent, and very good respectively. The consistency and glossiness were found to be excellent and the spreadability of the lip balm was found to be very good. There was no irritation to any volunteer after applying the lip balm. Recently, the need for herbal merchandise is increased especially within side the cosmetics industry. Lip balm is one of the extensively used beauty merchandise that functions as a shade of protection for the lip and may contain subdue numerous poisonous results of lead and technology of oxidative pressure. Red Dragon Fruit (*Hylocereus polyrhizus*) contains an effective antioxidant amaranth colorant referred to as betacyanin pigment. Looking at this benefit, this research aims to analyze the antioxidant activities of betacyanin pigment in lip balm from the peel of Red Dragon Fruits. The finding indicated antioxidant properties contained in lip balm from the peel of Red Dragon fruit result changed into 2.0% using in house method based on International Food Research Journal. In conclusion, the application of natural color derived from the peel of Red Dragon fruit is safe and can act as a natural dye that has antioxidant properties that do not affect the color and texture of the lip balm.

• SELENICEREUS UNDATUS :

- Name: *Selenicereus undatus* is a species of cactus native to Central America and Mexico.
- Common Name: It is commonly known as "pitahaya" or "white-fleshed dragon fruit."
- Appearance: *S. undatus* has elongated stems with spines along its ribs. It produces large, fragrant white flowers that bloom at night. The fruit is typically oblong with pink or yellow skin and white flesh speckled with black seeds.
- Cultivation: It is cultivated in tropical and

subtropical regions worldwide for its edible fruit. It requires well-draining soil and prefers warm temperatures.

- Nutrition: *S. undatus* fruit is low in calories but rich in vitamins, minerals, and antioxidants, particularly vitamin C and dietary fiber.
- Taste: The flesh of *S. undatus* fruit is mildly sweet with a texture similar to kiwi.
- Uses: The fruit can be eaten fresh, added to salads, and smoothies, or used in desserts. The flowers are also used in some traditional medicinal practices.
- Commercial Importance: *S. undatus* is commercially grown for domestic consumption and export markets due to its popularity as a nutritious and exotic fruit.



Figure: 1- SELENICEREUS UNDATUS

LITERATURE OF SURVEY

1. Jayshri C. PawarUjjwala Y. Kandekar Vijaya VicharePranali N. Ghavane :

Lip care products are an integral part of a day-to-day lifestyle. These impart the colour and protect the lips from the external environment. The major function of lip balm is to protect and moisturize the lips. A variety of lip care products are available in the market. The main concern with this product is that it contain synthetic colourant and flavoring agents that may have adverse.

2. Nazma M Ansari Vibhavari M Chatur Anuj Nahata ShivaniNahar: Cosmceuticals are the products of cosmetic that are biologically active ingredients that impersonates to medical or drug like benefits. The design, quality, formulation of lip balm made from natural ingredients was studied. In this study, lip balm has been made by using various ingredients like beetroot, almond oil, aloe vera, vitamin E and rose essence.

3. Dr Sudheer Kumar Kandibanda (2016) : Cosmetics have become one of the daily wants of all

teams in society. Every year, users are introduced to numerous new cosmetic products of the most recent trend. Cosmetics ar unimaginable in demand since historical times until day. Lipstick formulations ar most generally accustomed to enhancing the wonder of lips and adding glamour to the touch to the makeup.

4. Kanya Citta Hani Alifia, Hafizh Fadhullah, Pandu Nugroho(2019):

Lip balm is one of the most commonly used cosmetic products. Its main function is to moisturize the lips, relieve chapped lips, and protect them from dryness. It has been commonly used and has many variations; however, it also has some negative

DESCRIPTION OF DRUG PROFILE

- 1) Dragon Fruit:



Fig-1-Dragon Fruit-pitaya

The application of natural color derived from the peel of Red Dragon fruit is safe and can act as a natural dye that has antioxidant properties Dragon fruit has many potential health benefits, including: It's rich in antioxidants like flavonoids, phenolic acid, and betacyanin.

- Family:-Cactaceae .
- Synonyms:- Pitaya.
- Uses:- 1. Consumption as fresh fruit.
- 2. Smoothies and juices.
- 3. Health Drinks.
- 4. Skin care product.

- Chemical Constituents:-

Dragon fruit, scientifically known as *Selenicereus undatus*, contains various chemical constituents that contribute to its nutritional profile. Some key components include:

- Vitamins
- Antioxidants
- Dietary Fiber
- Minerals.
- Protein
- Sugar
- Fatty Acids

2) Coconut oil:



Fig-2- Coconut oil

The primary benefit of coconut oil is its moisturizing effects. This makes it ideal for chapped lips. Your lips are particularly sensitive to moisture loss because the skin is thin, and they're exposed to the elements more so than other parts of your skin.

- Family:- Arecaceae.
- Synonyms:- Cocos Nucifera Oil.
- Uses:-
 1. Cooking: Coconut oil is great for frying, baking, and sautéing due to its high smoke point.
 2. Skincare: It moisturizes skin, removes makeup, and can be used in DIY scrubs..
 3. Haircare: It nourishes and conditions hair, promoting shine and strength.
 4. Oral Health: Oil pulling with coconut oil can improve oral hygiene and whiten teeth.
- Chemical Constituents:-
 - lauric acid .
 - capric acid.
 - myristic acid.
 - palmitic acid.

3) Bees wax :



Fig-3- Bees wax

Bees wax is perhaps the most essential ingredient in our lip balms. This is because it contains natural moisturizers that lock in moisture from the air and help keep the skin looking firm and plump. Beeswax is a food grade wax with a white color when it is freshly prepared. Later the color changes into yellow because of the presence of propolis and pollen colorants. The typical odor of beeswax depends on

the honey, bees, propolis, and pollen. Beeswax is crystalline in form and it mainly depends on the storage.

- Family:- Apidae.
- Synonyms:- Honey Comb Wax.
- Uses:-
 1. Cosmetics: Beeswax is used in lip balms, lotions, and creams for its moisturizing and protective properties.
 2. Candles: It serves as a natural and clean-burning alternative to paraffin wax.
 3. Woodworking: Beeswax is applied as a finish or polish to protect and enhance the appearance of wood.
 4. Art Supplies: Artists use beeswax, or "encaustic wax," in painting and sculpture for its versatility and durability.
- Chemical Constituents:-
 - Esters.
 - Fatty Acid.
 - Hydrocarbon.
 - Alcohols.

4) Vitamin E :



Fig:4- Vitamin E

Vitamin E can also help to close up those painful cracks in the skin that are caused by dryness and cold weather. By applying the Award winning Am/Pm Tinted lipbalm With vitamin E you can seal up this cracks and keep the skin of your lips soft ,supple. Vitamin E is a fat-soluble vitamin with antioxidant properties. It plays a crucial role in protecting cells from damage, supports the immune system, and helps in maintaining healthy skin and eyes. Good dietary sources include nuts, seeds, vegetable oils, and green leafy vegetables. Vitamin E is also commonly used in skincare products for its skin conditioning and antioxidant benefits.

- Family:- Fat-Soluble Antioxidants.
- Synonyms:- Tocopherol
- Uses:-
 1. Vitamin E is utilized as an antioxidant to safeguard cells and support bodily functions.
 2. Vitamin E supplements are taken to promote skin health and counteract free radical damage.

3. Vitamin E is commonly used in skincare products for its moisturizing and anti-aging properties.
4. Vitamin E aids in the maintenance of healthy vision and neurological function.

➤ Chemical Constituents:-

- The main chemical constituents of vitamin E include tocopherols and tocotrienols.

5) Cocoa butter :



Fig : 5- Cocoa butter

Cocoa butter is an emollient that is a great source of natural antioxidants. It adds a protective hydrating layer to lips, helping protect them from extreme temperatures and indoor heat that can leave your lips dried out. Vitamin E is known for its restorative skin properties and healing

- Family:- cocoa beans.
- Synonyms:- Theobroma oil.

➤ Uses:-

- 1.Cocoa butter is commonly used in skincare products for its moisturizing properties.
- 2.In the food industry, cocoa butter gives chocolate its smooth texture.
- 3.It is also used in pharmaceuticals and cosmetics for its emollient effects.
- 4.Cocoa butter is rich in antioxidants and can help improve skin elasticity.

➤ Chemical Constituents:-

- palmitic acid.
- steric acid.
- Oleic acid.
- Linoleic acid.

PLAN OF WORK

- 1) Ingredient Collection: Gather dragon fruit extract, beeswax, coconut oil, shea butter, and essential oils like mint or lavender.
- 2) Dragon Fruit Extract Preparation: Extract the juice from Selenicereus undatus and filter out any solid particles. Base Preparation: Melt

beeswax, coconut oil, and shea butter together using a double boiler to form the base.

- 3) Mixing Ingredients: Combine the dragon fruit extract with the melted base, ensuring a homogeneous mixture.
- 4) Add Essential Oils: Integrate a few drops of essential oils for fragrance and added benefits.
- 5) Pour into Containers: Pour the mixture into lip balm containers while it's still in a liquid state.
- 6) Cooling and Solidification: Allow the lip balm to cool and solidify, either at room temperature or in the refrigerator.
- 7) Labeling and Packaging: Create labels with product details and apply them to the lip balm containers. Package them appropriately.
- 8) Testing: Conduct skin patch tests to ensure compatibility and evaluate the lip balm's effectiveness.
- 9) Final Adjustments: Adjust the formulation based on testing results if necessary.

MATERIAL METHOD

- List of materials:-

Sr. No.	Particular	Quantity
1.	Dragon Fruit (juice)	60 ml
2.	Coconut Oil	30 ml
3.	Bees Wax	5.5 gm
4.	Vitamin-E	3(capsule)
5.	Cocoa Butter	5.5 gm
6.	Rose Fragrance	5 ml

- Glassware's and instruments:

- Beaker
- Stirrer
- Measuring Cylinder
- Holder
- Heating Mental
- Water bath
- Mortal Pistal

- Procedure:

1. To prepare this lip balm we need pure dragon fruit. Then grate it using a grater with small holes. After grating squeeze out the juice through a cheesecloth.
2. Take 60 ml of dragon fruit juice. Add 30gm of Coconut oil to the juice. Give flame to the mixture. Make sure to mix occasionally.
3. When we notice that the dragon fruit juice starts to caramelize, reduce the heat to low so that it does not burn.
5. At this stage, take the flame off. Immediately pour the mixture into a beaker or a heat-resistant cup.
6. Add 5.5 gm of beeswax and cocoa butter. Then melt the wax and butter using the double boil method.
7. When the wax and butter are melted, remove from the water bath and let it cool a little.
8. When it cools down, add it vitamin E capsule. Mix for a few seconds.
9. Then keep in the fridge for 30 min for the mixture to solidify.
10. After 30 min, mix well till it get a smooth consistency. When it mixed well, transfer it into a clean container.
11. This can be used as a lip balm and also as a substitute for lipstick. Make sure your hands are clean when using this lip balm.

RESULT

Formulation and evaluation of herbal lip balm results in a reddish color and sweet in taste. The texture is semi-solid. odor is pleasant and smooth in touch. And effective in nature.

- ❖ Discussion:- As, conventional lip balm often contains coconut oil, beeswax, cocoa butter, vit-e. the main motive behind the formulation was to incorporate as many natural ingredients to retain the natural properties of lip balm. The use of Dragon fruit provided natural colors which are less toxic compared to synthetic colors.

- Observation table:

Sr. No.	Parameter	Observation
1.	Colour	Reddish
2.	Odour	Pleasant
3.	Taste	sweet
4.	Smoothness	Smooth
5.	Texture	Semi-solid

- Evaluation parameters :

Organoleptic Properties :- Organoleptic properties refer to the sensory characteristics of a product that can be perceived by our senses. In the case of lip balm, these properties include:

Color: The visual appearance of the lip balm, which may be clear, tinted, or have a specific hue.

Odor: The scent or fragrance of the lip balm, which can range from subtle to strong depending on added ingredients.

Taste: Some lip balms have a taste, especially if they contain flavorings or sweeteners.

Texture: The feel of the lip balm, considering factors like smoothness, thickness, and whether it feels greasy or waxy.

Temperature Sensitivity: Whether the lip balm changes consistency in different temperatures.

Determination Of PH:- Place a small amount of the lip balm on a clean surface. Dip the pH testing strip into the lip balm, making sure it's fully saturated. Wait for the strip to change color. Compare the color of the strip to the provided pH color chart to determine the pH.

Determination Of Homogeneity:- Visual Inspection: Examine the lip balm for any visible signs of separation, uneven texture, or inconsistent color. A homogeneous lip balm should have a uniform appearance.

Texture and Consistency: Apply a small amount of the lip balm and assess its texture. A homogeneous lip balm should feel consistently smooth without grittiness or unevenness.

Determination Of Spread Ability:- To determine the spreadability of a lip balm, you can perform a simple test that assesses how easily and evenly the product spreads on the skin. Here's a step-by-step guide

Irritability Test:- Select a Patch Test Area: Choose a small, inconspicuous area on your forearm or behind your ear to apply the lip balm. **Clean the Area:** Clean the chosen area with mild soap and water to ensure it's free from other substances that might interfere with the test.

Apply a Small Amount: Apply a small amount of the lip balm to the test area. Use a clean spatula or your fingertip. **Wait and Observe:** Allow the lip balm to remain on the skin for at least 24 hours. During this time, avoid washing the test area.

Observe for Reactions: Check for any signs of irritation, redness, itching, swelling, or rash. If you experience any adverse reactions, discontinue use immediately.

Phase Separation:- Phase separation refers to the

physical separation of different components in a product, leading to the formation of distinct layers
Washability Test : - washability test for lip balm can assess how easily the product can be removed from the lips or skin.

FUTURE & SCOPE

1. **Natural Skincare Trend:** With the rising demand for natural and organic skincare products, a herbal lip balm made from *Selenicereus undatus* could align well with consumer preferences. People are increasingly drawn to plant-based and herbal alternatives due to their perceived safety and efficacy.
2. **Antioxidant-Rich Formulation:** *Selenicereus undatus* is known for its high antioxidant content, which can help protect the lips from environmental damage and premature aging. This aspect could be emphasized in marketing the lip balm as a protective and rejuvenating product.
3. **Market Potential:** The market for lip care products is continuously growing, presenting opportunities for innovative formulations. A herbal lip balm with unique ingredients like *Selenicereus undatus* extract could carve out a niche in this competitive market, appealing to consumers looking for novel and effective solutions.
4. **Expansion to Other Products:** The success of a *Selenicereus undatus* lip balm could pave the way for the development of other skincare products featuring this ingredient. This could include face creams, body lotions, or even hair care products, capitalizing on the diverse benefits of the plant extract.
5. **Research & Development:** Continued research into the properties of *Selenicereus undatus* and its potential skincare applications could lead to further innovations. This could involve exploring its efficacy in treating specific skin conditions or optimizing formulations for enhanced benefits.

CONCLUSION

Due to the tremendous demands of beauty enhancing products cosmetics industry is flourishing. This work has reviewed the current status of natural lip balm products. This also studied all aspects of natural lip balm including natural ingredients, formulation

methods, evaluation and applications. Hence it can be concluded that an extensive study has been performed on natural lip balm products and shown a wide scope for such products in future. In conclusion, the combination of ingredients such as honey, petroleum jelly, and corn starch produce a great consistency of product. This lip balm has no skin irritation, and the formulation would increase customer acceptance since the additional properties of antioxidants added extramarket value to the product as a cosmetic product. It is because consumers involved with these surroundings are inclined to spend extra on "environmentally friendly" products, favoring the increase of the marketplace for natural cosmetics

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