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"FORMULATION AND EVALUATION OF HEARBAL LIP BALM "

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Abstract: The lip-care products for everyday basis contain harmful heavy metals and preservatives. Other than leaching through the pores on your lips, these heavy metals and other chemicals can also be accidentally ingested. Lip balm formulations are most widely used to enhance the beauty of lips and add a glamour touch to the make-up. Lip balms offer a natural way to maintain and promote healthy lips. Current cosmetic lip products are based on the use of enormous chemical ingredients which have various side effects. Hence, an attempt has been made to study the natural ingredients which are used to formulate the natural lip balm. The natural lip balm can be made using naturally occurring base, oils, colour, flavouring agent etc. Organic lip balm nourishes the lips and helps to get hydrated and protect lips which were affected by dryness. Organic lip balm can be a better option for the treatment of various lip issues. Beetroot lip balm was found to possess antioxidant activity.

Key Points: Beetroot, Organic lip balm, natural ingredients, antioxidants, hydrated, cosmetics, nourish, etc.

1. Introduction



Dig.1. Beta Vulgaris

1.1. Cultivar Group: Conditiva Group.

1.1.1. Origin: Sea Beet (Beta vulgaris subsp.)

Lips are a part of the human body that is very thin as compared to face skin, even though it consists of three to four layers of the skin. Lips are susceptible where lip disorders such as inflammation and swelling of lips can quickly occur. Therefore, lips must be moisturized using any lip product such as Lip balm.⁽¹⁾ Lip balms are formulations applied onto the lips to prevent drying and protect against adverse environmental factors.⁽²⁾ Products that are used to protect lips rather than decorate them are known as lip balms. They form an adherent, flexible, moisture-resistant film of oily substance.⁽³⁾ It is necessary to balance the concentration of main ingredients to formulate lip balms including the base, oils, colouring agents and flavouring agents. Natural lip balms offer a natural way to maintain and promote healthy lips.⁽⁴⁾



Dig.2 .Bees wax

Bees wax is a very moisturizing , can help protect the lips from the harmful rays of the sun, and has a pleasant smell. Bees wax acts as a natural emulsifier.⁽⁵⁾ Research has also discovered that bees wax contains small amount of natural anti-bacterial agents. This is especially helpful for individuals who have excessively dry and cracked lips. These anti-bacterial agents can help prevent a painful inflammation that comes with an infection.⁽⁶⁾ Beet root is rich in anti oxidants that make the lips soft, supple and improve the elasticity of the skin.⁽⁷⁾



Dig.3. ALMOND OIL

Almond oil penetrates deep into the skin tissues and its fatty acids help to moisturize the lips. The anti-inflammatory properties of almond oil reduces and pain associated with chapped and sun burnt lips.⁽⁸⁾ Aloe-vera has anti - inflammatory properties that fight irritation. It infuses the lips with anti-oxidants that fight wrinkles and other forms of skin damage⁽⁹⁾



Dig.4.VITAMIN E

Vitamin E is an anti-oxidant and a natural conditioner. Vitamin E helps to maintain the soft, youthful texture of the lips by reducing the signs of aging.⁽¹⁰⁾ Topical vitamin E oil can be used to relieve chapped, dry lips. Since, vitamin E promotes cell turnover and regeneration, using it on dry lips brings new cells to the surface faster. The thick and oily consistency of vitamin E oil can also prevent further irritation.⁽¹¹⁾ The colour of a product also provides an indication of product quality and freshness. Natural colours are however, less toxic compared to synthetic colour.⁽¹²⁾ The usage of synthetic dyes was done commercially for attractive colours but it is hazardous to skin and environment.⁽¹³⁾ Application of lip balm ensures quick healing of dry and chapped lips. The skin on your lips is thinner than your facial skin. So, in case you are suffering from chapped and dry lips , using a lip balm will ensure that your lips are well hydrated and they heal faster.⁽¹⁴⁾ The current research work aims to prepare and evaluate herbal lip balm by using easily available ingredients for the protection of lips. It will also add attractiveness and glossy appearance to lips.⁽¹⁵⁾ This work was intended for extensive study of natural lip balm. This was based on the comprehensive literature excipients along formulation and evaluation of lip balm.⁽¹⁾

2. Material and Equipments:**2.1. Materials:**

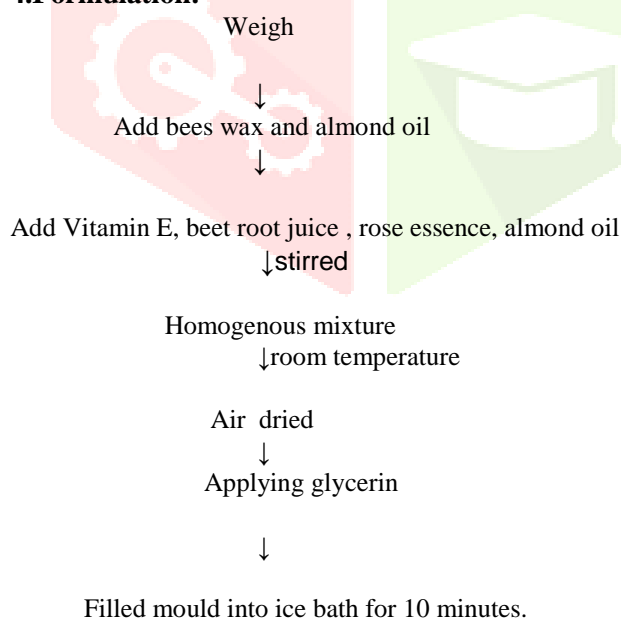
Sr no.	Materials
1.	Beet root
2.	Bees wax
3.	Almond oil
4.	Vitamin E
5.	Rose water
6.	Glycerol

2.2. Equipments:

Sr no.	Equipments
1.	Autoclave
2.	Centrifuge
3.	Melting point apparatus
4.	Weighing balance
5.	Ice bath
6.	Water bath
7.	Beaker

3. Formula:

Sr no.	Ingredients	Quantity Taken	Quantity Given	Use
1.	Beet root extraction	0.8 ml	0.6ml	Colouring Agent
2.	Bees wax	9.0 gm	5.0gm	Impart glossiness and hardness
3.	Almond oil	0.6ml	0.4ml	Moisturizing Agent
4.	Vitamin E	0.5ml	0.3ml	Anti-oxidant, Maintain the stability
5.	Rose water	Q.S	Q. S	Flavouring Agent
6.	Glycerol	Q. S	Q. S	Glossy Effect

4. Formulation:**FIG . FORMULATION OF HEARBAL LIP BALM.**

i)Weigh all the excipients.

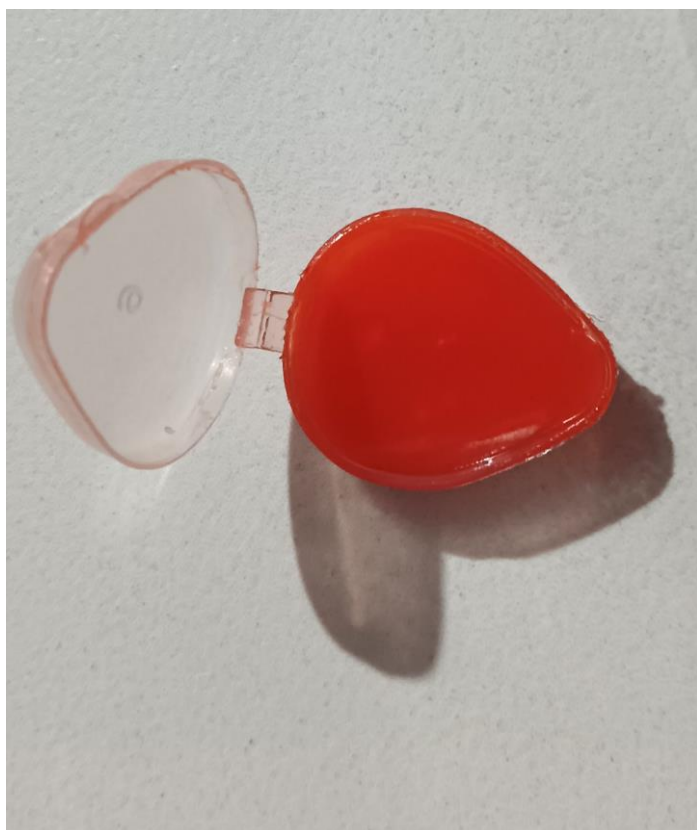
ii) Add bees wax and almond oil in a beaker and melt it in water bath at 55-60°C³

iii) Add all other ingredients like vitamin E, beet root juice, rose essence, almond oil were mixed vigorously and add to the mixture and mixture was stirred continuously till homogenous mixture was obtained.⁽¹⁷⁾

iv) A mixture was poured into the container and it was let to be air dried at room temperature.⁽⁴⁾

v) Before pouring the mixture in lip balm moulds, on the mould applying glycerine with the help of cotton, put the filled moulds into ice bath for 10 min.⁽¹⁶⁾

□



5. Evaluation:

5.1. Melting Point-

The sample of lip balm is taken in a glass capillary whose one end was sealed by flame. The capillary containing drug dipped in liquid paraffin inside the melting point apparatus. Melting was determined and melting point was reported.⁽¹⁷⁾

5.2. Organoleptic properties-

□□□□□□□□ The formulation was studied for physical appearance, colour and odour. The presence of coarse particles and consistency were used to evaluate the texture and homogeneity of the formulations.⁽¹⁵⁾

5.3.Measurement of pH-

The pH of lip balm was determined in order to investigate the possibility of any side effects. The pH study was carried out by dissolving 1gm of sample into 100 ml water. The pH measurement was done using pH meter. pH of lip was near to neutral.⁽³⁾

5.4. Skin Irritation test-

It is carried out by applying lip balm on the skin for 10 min ⁽⁴⁾.

5.5.Test of spreadability-

The test of spreadability consisted of applying the product repeatedly onto a glass slide to visually observe the uniformity in the formation of the projective layer and whether the stick fragmented, deformed or broke during application.⁽¹⁶⁾ Prepared lip balm, initially has shown G- Good: uniform, no fragmentation, perfect application, with any deformation at room temperature.⁽³⁾

5.6. Stability studies-

□□ Prepared lip balm was placed for accelerated stability studies at room temperature (25.0+/-3.0°C), refrigeration (4+/-2.0°C) and oven temperature (40.0+/-2.0°C) for 30 days. After 30 days it was again characterized for organoleptic properties, melting point, spreadability and pH.⁽¹⁷⁾

5.7. Effectiveness test on papers -

Finally, after taking out the lip balm from chiller, it was tested by applying the lip balm on a piece of paper. This process is important to determine colour obtained from different sources. It also can determine the effectiveness of the colour product.⁽⁴⁾

5.8. Skin Sensitivity-

It was carried out by applying the product in the form of a patch on the skin for 30 min and observe the reaction as- N -No reaction

- R-Redness of the skin
- I- Itching, swelling , inflammation

6. Result and Conclusion:

6.1. Result:

1. Melting point :

Melting point of lip balm was found to be in the range of 68⁰C- 69⁰C, which matches the appropriate melting point of between 65⁰-75⁰C.

2. Organoleptic Properties:

Prepared lip balm has shown cream colour with pleasant odour.

Sr no.	Parameter	Observation
1.	Colour	Cream
2.	Appearance	Excellent, Smooth
3.	Odour	Pleasant

3. Test of Spreadability:

Prepared lip balm has initially shown G- Good : uniform , no fragmentation , perfect application , without any deformation at room temperature.

4. Measurement of pH:

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

5. Stability Studies:

Stability of drug can be defined as the time from date of manufacture and the packaging of the formulation, until, its chemical or biological activity is not less than a pre-determined level of labelled potency and its physical characteristics have not changed appreciably. The purpose of stability testing is to provide evidence on how the quality of a drug substance or drug product varies with time under the influence of variety of environmental factors such as temperature, humidity and light , enabling recommended storage condition and shelf- lives. Stability studies were carried out for 1 month /30 days at room temperature (25.0+- 3.0⁰C) , refrigeration (4+- 2.0⁰C) and oven temperature (40.0 +-2.0⁰C).

It was observed that prepared lip balm shows I - Intermediate uniform ; leaves few fragments; appropriate application ; little deformation of the lip balm at room temperature (25.0+-3.0⁰ C) and refrigeration (4+-2.0⁰ C) and little deformation at oven temperature (40.0+- 2.0⁰ C).

6.2. Conclusion:

The aim of current research work was to prepare lip balm by using maximum possible natural ingredients . Mainly beetroot extract chosen as a colouring agent, rose water used as a flavouring agent , vitamin E capsule used as an antioxidant, almond oil was used as moisturizing agent. The effects of these ingredients on physicochemical properties such as organoleptic characteristics , melting point, consistency and spreadability on formulation were studied. It can be concluded that lip balm formulation was successfully prepared by using these natural additives. Results of various tests implied that the formulation passed various tests physicochemical tests and safe to use . Based on stability data, the storage condition for the formulation is at room temperature. In the current formulation , Beeswax was used as a base, in the future; it can be replaced with a natural base like Shea butter, paraffin wax, etc.

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