

Formulation and Evaluation of Polyherbal Anti-Bacterial Lipbalm

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ABSTRACT: Cosmeceuticals are the products of cosmetic that are biologically active ingredients that impersonates to medical or drug like benefits. Lip balm is one of the cosmetic preparations mostly used as moisturizer in winter season for dry lips. Lip balm increases the beauty of lips and moisturizes the lip and shine to the lips. All the ingredients used in this preparation are natural and gives pleasant odour, keeps lips for soft. Lip balm has been made by using various ingredients like beeswax, turmeric, hibiscus powder, aloe vera oil, rose oil, vitamin E. Homogenous mixing method was used to produce the lip balm. The formulation of lip balm was tested by applying it on a glass slide. Various parameters such as chemical stability, pH melting point, and spread ability were carried out for the evaluation of lip balm. Lip balm prepared from above ingredients could be a better option for treatment of various lip issues. Natural lip balm is safe for lips.

Keywords: Beeswax, Turmeric, Hibiscus, Aloe vera, rose oil, Vitamin E.

I. INTRODUCTION

Due to the presence of hazardous synthetic excipients in cosmetics, there has been a great public concern regarding the use of organic sources. Lips do not have any oil glands; thus, it is really important to provide that extra moisture and protection throughout the day! Conventional lip balm often contains petrolatum, synthetic waxes, alumina, paraben, hydrogenated oils and artificial fragrances and colors which are toxic. Often the lip balm is eaten by the user, thus it becomes major issue for health regulator. Cosmetics are incredibly in demand since historical time. These days focus is shifted more towards naturally derived cosmetic products. Among all cosmetic products, lip balm formulations are most widely used to enhance the beauty of lips and add glamour touch to the makeup. Lip balms offer a natural way to maintain and promote healthy lips. Current cosmetic lip products are based on use of enormous chemical

ingredients with various side effects. Beeswax is a natural compound secreted by female bees that is often used in cosmetics, particularly lip balm. This substance is very moisturizing, can help protect the lips from the harmful rays of the sun, and has a pleasant smell. Beeswax act as a natural emulsifier. Vitamin E is an antioxidant and a natural conditioner. Vitamin E helps to maintain the soft, youthful texture of the lips by reducing the signs of aging. Rose oil penetrates deep into the skin tissue and its fatty acids help to moisturize the lips. The anti-inflammatory properties of aloe vera oil reduce redness and pain associated with chapped and sunburnt lips. Turmeric has anti-bacterial properties that fights microbes. It infuses the lips with antioxidants that fight wrinkles and other forms of skin damage. Hibiscus is rich in antioxidants & anti-inflammatory properties that make the lips soft, supple and improve the elasticity of the skin.

ANATOMY OF LIPS

The lip serves as organs of prehension, suction and speech. It is composed of the skin, superficial fascia, orbicularis muscle and the muscles inserted around it (areolar tissue and mucous membrane). The areolar tissue contains coronary vessels which completely encircle the buccal orifice near the free merging of the lips. Coronary vessels are the superior and inferior coronary arteries which arise from the facial. The superior coronary is larger than the inferior anastomoses with its fellow of the positive side and gives off small artery to the septum arteriaseptinasi.

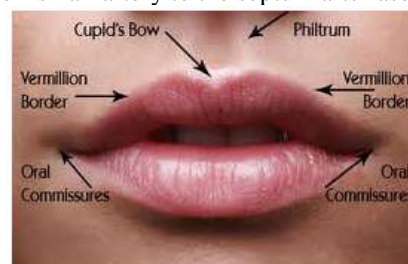


Fig 1: Anatomy of lips

LIP DISORDERS

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.

Sun Damage: 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.

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

Allergic Contact Cheilitis: The most common cause of contact cheilitis includes the use of personal hygiene products such as toothpaste and mouthwash which contain numerous antibacterial agents, essential oils and preservative.

II. EXPERIMENTAL METHOD

Aloe vera oil: 30 ml of olive oil was kept for a boil. Add 10 gm of aloe vera pulp into the oil and stir occasionally. Wait till the aloe vera pulp turns into light pink colour. Remove the pulp from the oil. Aloe vera pulp is ready for use.

1.1 METHOD OF FORMULATION

- **Composition of 15gm. formulation of polyherbal anti-bacterial lipbalm**

Sr. no.	Ingredient	Quantity	Action
1	Beeswax	5g	Thickening agent, emollient
2	Turmeric powder	1g	Anti-microbial & colouring agent
3	Hibiscus powder	0.5	Anti-inflammatory
4	Aloe vera oil	15ml	Soothes the lips, moisturizer
5	Rose oil	2 drops	Treats pigmentation
6	Vitamin E	2 drops	Maintains stability, Anti-oxidant

Table 1: Information

- **Method of preparation of lipbalm**

Required quantity of beeswax was taken and melted it



Aloe vera oil along with turmeric & hibiscus powder was added to the melted beeswax solution.



Finally add vitamin E oil & few drops of rose oil to it with continuous stirring.



Pour the solution in a container.



Cap it after it solidifies.

III. FINAL FORMULATED PRODUCT



Fig 2: Formulated Product

IV. EVALUATION OF LIPBALM

- **Organoleptic properties:**

The lip balm was studied for the basic of organoleptic characteristic such as Colour, Odour and Texture.

- **Stability test:**

The purpose of stability testing is to provide evidence on how the quality of drug substance or drug product varies with time under the influence of variety of environmental factors such as temperature, humidity and light and enables to recommend storage condition and to predict the shelf life. Stability study for lip balm was performed at different temperatures such as 3- 5°C, 25°C.

- **pH measurement:**

The pH study was carried out by dissolving 1gm of sample into 50ml water. The pH measurement was done using pH meter.



Fig. 3: pH meter

- **Spreadability test:**

The spreadability was expressed in terms of time in seconds taken by two slides to slip off from the formulation, placed in between the slides, under certain load lesser the time taken for separation of the two slides better the spreadability. Two sets of glass slides of standard dimension were taken. Then one slide of suitable dimension was taken and the formulation was placed on that slide. Then other slide was placed on the top of the formulation. Then a weight or certain load was

placed on the upper slide so that the formulation between the two slides was pressed uniformly to form a thin layer.

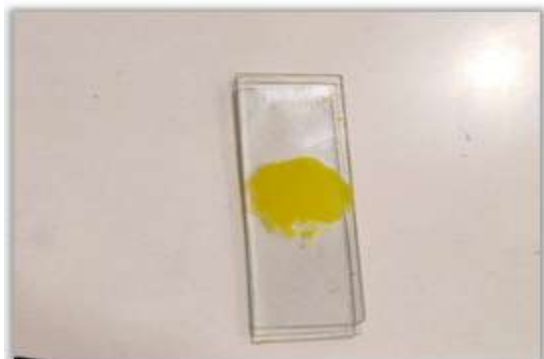


Fig 4: Spreadability

- **Skin irritation test:**
 Apply some amount of formulation on back of your hand or dorsal side of your hand and observe for 24 hours if any irritation is caused at that area of application.



Fig 5: Skin irritation

- **Microbial test:**
 In this method, the mixed culture is diluted directly in tubes of liquid agar medium. The medium is maintained in a liquid state at a temperature of 45°C to allow thorough distribution of the inoculum. The inoculated agar medium is transferred into petri plates, allowed to solidify and incubated. In the series dilution technique, the original inoculum may be diluted by using sterile water or saline solution so that the concentration of the microbes gradually become less. Mix 1 ml dilute in 20 ml of liquid nutrient agar medium at 45°C. Shake the liquid agar nutrient agar medium & pour in a sterile petri plate, solidify and incubate it.

V. RESULT AND DISCUSSION

Sr. no.	Parameter	Result
1	Colour	Yellow
2	Texture	Smooth
3	Odour	Pleasant
4	pH	6.2
5	Spreadability test	Good
6	Skin irritation	No irritation
7	Microbial test	Pass

Table 2: Result

VI. CONCLUSION

Due to 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 the extensive literature study has been performed on the natural lip balm products and shown wide scope for such products in future. The effects of these ingredients on physicochemical properties such as organoleptic characteristics, 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. By combining these natural ingredients, the poly-herbal lipbalm can provide a synergistic effect in combating microbial infections and promoting skin health.

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