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Formulation and Evaluation of Herbal Lipstick

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KEYWORDS

Herbal, lemon juice, watermelon juice

ABSTRACT

Coloring skin, particularly the skin of the face and lips is an ancient practice going back to the prehistoric period. In present days the use of such products has increased and the choice of shades of color, texture, and luster has been changed and become wider. Nowadays herbal lipsticks are gaining popularity because natural cosmetics are safe to use and easy to handle by women. Synthetic coloring agents may cause allergic reactions and be found to be carcinogenic in nature. Our study aimed to formulate and evaluate herbal lipstick using natural edible coloring matter which is watermelon juice as a coloring agent. Different natural ingredients such as beeswax, butter, coconut oil, olive oil, castor oil, Vanilla & rose essence, and lemon juice were used to formulate herbal lipstick. Prepared herbal lipstick was evaluated for different evaluation tests such as color, texture, pH, melting point, breaking point, softening point, surface anomalies, aging, and perfume stability and also compared with the marketed standard formulation. Results showed that different evaluation parameters of prepared herbal lipstick resembled standard values and with marketed formulations. Studies revealed that natural edible coloring matter may be the better option for the preparation of herbal lipsticks. This can be observed from the fact that lipsticks are marked in hundreds of shades of color to satisfy the demand of women. The present investigation was done to formulate lipstick containing herbal ingredients, since lipsticks are one of the key cosmetics to be used by the women. Attempt was also.The herbal word is a safety symbol in contrast to a synthetic one that hurts human health. The objective of this work is to formulate and evaluate herbal lipstick from watermelon as natural coloring pigments and to minimize the side effects of synthetic formulations. The goal of this work is to extract the colored pigments from the Citrullus lanatus, optimize the formula to prepare the lipstick, and evaluate the prepared formulations.

1. INTRODUCTION

According to the Drug and Cosmetic Act 1940 and Rules 1945, cosmetic means any article intended to be sprayed, poured, rubbed, or sprinkled on, or introduced into, or applied to the human body or any part for cleansing, or beautifying, promoting attractiveness or altering the appearance [2,4]. Cosmetics include skin-care creams, lotions, powders, perfumes, lip rouges, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays, and gels. By using cosmetics humans can increase their appearance. Among them, lipstick is the most widely used cosmetic item by women to give an attractive color and appearance to the lips [3,5]. Lipstick can change the apparent facial characteristics of women. These are usually manufactured as molded sticks and consist of coloring pigments dissolved or dispersed in a fatty base consisting of a suitable blend of oils, fats, and waxes suitably perfumed Lipstick is a cosmetic product containing pigments, waxes, oils, and emollients that applies color, texture, and protection to the lips [1,10]. Recently there has been a revival of the growing interest in the application of non-toxic and eco-friendly natural dyes on natural fibers due to worldwide environmental consciousness. Nowadays the use of herbal products has increased and the choice of shades of color, textures, and luster, have been changed and become wider [11,12]. This can be observed from the facts that lipstick is marketed in hundreds of sheds of colors to satisfy the latest demand of women. The dyes that contribute to the color of the lipstick are very harmful to human consumption. Coal tars are the basic ingredients from which synthetic dyes are formed and can cause allergy, nausea, dermatitis, and drying of the lips [13,14]. So, to avoid all of this we can prepare herbal lipstick using natural pigments and ingredients [15].

2. MATERIALS AND METHODS

Materials

Watermelon fruit were procured from Sardespande nursery, Parbhani India. Other chemicals used in research were obtained from College Research Laboratory. All chemicals and reagents used were of analytical grade.

Method of formulation:

Preparation of watermelon pigments first wash the watermelon and peel it. Then watermelon blended. Collect the watermelon juice and keep the juice boiling for a few minutes.

Steps Used in Formulation of lipstick:

The kind of substance utilized affects lipstick creation just very minimally. The molding technique might be recommended as a typical way of making lipstick. Plant-based lipstick has been formulated according to the general method of formulating lipstick. To put it briefly, using a Chinese box all of the hard, mild waxes were melted over a double boiler or a heating coat in decreasing order of melting point. The thick solution of pigment and coloring agent was mixed and heated with castor oil, and the two phases were mixed at a certain temperature. In excess, the liquid was poured into lipstick molds while they were held in an ice bath. Rose oil, lemon juice and powder, and vanilla essence were added to 400° C. The lipstick. taken out of the mold and irritated after a portion of the solidification excess was scraped away with the blade. The prepared lipstick was installed in a lip container and used for a more in-depth assessment.

The steps involved are:

1] Melting
2] Mixing
3] Molding
4] Labeling
5] Packing

3. FORMULATION OF HERBAL LIPSTICK :

Wash and clean lipstick mold. Using detergent. (if required) and water. Lubricate it with liquid paraffin and place it in an inverted position on ice to drain excess lubricant. And to cool lipstick mold. Weight bees wax and paraffin wax and transfer it to a porcelain dish, then place it in a water bath until it properly melts and mixes. (Beeswax, paraffin wax, with coconut oil). Add acacia to the above-melted mixture. And stir it well. Watermelon pigment, and lemon juice as well as also added. Add vitamin E. capsule and peppermint oil is added. Pour this dispersion in cavities of lipstick mold in excess quantity till overfills and place the mold on ice for half an hour. Trim or scrap excess quantity after solidification using a knife or blade and open mold to remove lipstick. Fill individual lipsticks in a lipstick container

Composition and their role in herbal lipstick

SR. NO	INGREDIANTS	FORMULATION A	FORMULATION B	FORMULATION C	USES
1	Coconut oil	1ml	1ml	2ml	Emollient
2	Paraffin wax	3gm	4gm	5gm	Moisturizing agent
3	Beeswax	3gm	4gm	5gm	Stabilizer
4	Acacia	1gm	2gm	3gm	Binder & emulsifier
5	Lemon juice	1drop	2drop	3drop	Antioxidant
6	Citrullus lanatus juice	2ml	3ml	4ml	Natural pigmentation
7	Vanila essence	1drop	2drop	2drop	Flavoring agent

Table 2: Composition and importance of herbal lipstick

POST-FORMULARY EVALUATION OF HERBAL LIPSTICK

It is very essential to maintain a uniform standard for herbal lipstick, keeping this view in mind the formulated lipstick was evaluated on parameters such as melting point, breaking point, the force of application, surface anomalies, etc.

1) Melting point determination test:

Determination of melting point is important as it is an indication of the limit of safe storage. The melting point of formulated lipstick was determined by the capillary tube method the capillary was filled, kept in the capillary, and first, the product was slowly melted. After sometimes was observed the product was completely melted. The above procedure was done 3 times and the melting point ratio was observed in different different formulations.

The determination of melting point is done to determine the storage characteristics of the product. The inciting point of the lipstick base should be between 60 to 65°C to avoid the sensation of friction or dryness during application.

The method of determination is known as the capillary tube method:

(a) In this method, about 50 mg of lipstick is taken and inserted into a glass capillary tube open at both ends.

(b) The capillary tube is ice-cooled for about hours and then placed in a beaker containing hot water and a magnetic stirrer.

(c) The temperature at which material starts moving through the capillary is said to be the melting point temperature.

(d) Another important parameter is the droop point which determines the temperature at which the product starts oozing out the oil and becomes flattened out.

(e) The melting point should be higher than the droop point which determines the safe handling and storage of the finished product.

2) Breaking load point test:

The breaking point was done to determine the strength of lipstick. The lipstick was held horizontally in a socket ½ inch away from the edge of the support. The weight was gradually increased by a specific value (10 gm) at a specific interval of 30 seconds and the weight at which breaks were considered as the breaking point.

This test is done to determine the strength and hardness of the lipstick. In this method, the lipstick is placed horizontal position I inch from the base, and weights with increasing loads are attached to it. The weight at which the lipstick starts breaking, known as the breaking load point. The test shall be carried out in specific conditions and at about 25 ° C temperatures.

3) Test for the application force:

This is a test to determine the force to be applied during application. In this method, two lipsticks are cut to obtain flat surfaces which are placed one above the other. A smooth paper is placed between them which is attached to a dynamometer to determine the force required to pull the paper indicating the force application.

4) Determination of surface characteristics:

The study of the surface property of the product is carried out to check the formation of crystals on the surface the contamination by microorganisms the formation of wrinkles and the exudation of liquid.

5) Irritation test results:

It was found that after irritation testing of each lip color formula for 20 volunteers, all of the formulas did not cause an irritation reaction. This was evidenced by the absence of symptoms of irritation caused by the onset of red skin, itching, bumps, or swelling. Hence, it could be

said that the lip color made with variations in the concentration of the color, was quite safe to use.

6) Surface anomalies

This was studied for the surface defects, such as no formation of crystals on surfaces, no contamination by molds, fungi, etc.

7) Aging stability:

The product was stored at 40ºC for 1 hr. Various parameters such as bleeding, crystallization of on surface, and ease of application were observed.

8) Solubility test:

The formulation of herbal lipstick was dissolved in various solvents to observe the solubility.

9) Acceptance:

The acceptance study was carried out to study the acceptance of the products, for this study, the ten formulations of the herbal lipstick were shown to the female volunteers, and the percentage of acceptance was calculated out of 10 marks.

10) Thixotropy character:

It is an indication of thixotropic quality and was done by using a penetrometer. A standard needle of a specific diameter was allowed to penetrate for 5 seconds under a 50 gm load at 25ºC. The depth of penetration was a measurement of the thixotropic structure of lipstick.

11) Force of application:

It is a test for comparative measurement of the force to be applied for application. A piece of coarse brown paper can be kept on a shadowgraph balance and lipstick can be applied at a 45º angle to cover a 1 sq. inch area until fully covered. The pressure reading is an indication of the force of application.

4. RESULT OF EVOLUTION TESTING

SR.NO	Evaluation parameter	A	B	C
1	Colour	Ruby Red	Light Red	Light Red
2	PH	6.5	6.5	6.8
3	Melting Point	60 °C	65 °C	69 °C
4	Perfum Stability	+++	+++	+++
5	Ageing Stability	Smooth	Slightly Crack Texture	Slightly Crack Texture
6	Solubility Test	Soluble In Water And Chloroform	Insoluble In Water And Chloroform	Insoluble In Water And Chloroform

It was observed that among all the prepared formulations (A,B,C). The formulation A was good enough to meet the general characteristics of ideal lipstick, on the other hand formulations B, and C showed poor pigmentation after application. The formulation B produce good colour but due to the absence of liquid paraffin the lipstick does not stick together properly. It makes a loose mixture. The formulations C produce very light colour.

5. CONCLUSION

In the study, several formulations of lipstick, namely A,B and C were prepared and evaluated. Among these formulations, A was found to be the most satisfactory in terms of meeting the desired characteristics of an ideal lipstick. However, formulations B and C exhibited shortcomings in different aspects.

Formulations B and C were observed to produce a very light colour when applied. This means that the pigmentation of these lipsticks was insufficient, resulting in a noticeable colour on the lips.

Formulation C, on the other hand, demonstrated good colour production. However, it lacked an important ingredient, liquid paraffin, which affected its ability to stick together properly. As a consequence, C resulted in a loose mixture, making it difficult to maintain the lipstick's shape and consistency during application.

In summary, while formulation A met the general characteristics expected of an ideal lipstick, such as appropriate pigmentation and consistency, formulations B and C fell short in terms of pigmentation, colour intensity, and cohesive properties respectively.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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