



Formulation and Evaluation of Herbal Lipstick from the Extract of Papaya

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ABSTRACT

The word cosmetics or makeup are applied on the skin to enhance the overall appearance. There are so many makeup items are available the market like lipstick, kajal, mascara, eye liner etc. Lipstick is used for enhancing appearance, look attractive and protection of lips. It's available in the market in variety of shades and form like liquid as well as stick. Lipstick containing synthetic colorants which are made up of harmful chemicals and it is very harmful for our skin. It creates so many problems like- allergy, nausea, dermatitis, and drying of the lips and in more severe form they can be carcinogenic and even fatal. So, the demand of the cosmetics containing herbal ingredients increased universally because it is safe. In our research, investigation was made to formulate lipstick containing herbal ingredients, evaluations and their comparison with marketed formulation. From the present investigation it was found that that the formulation having promising results such as pH 6.5+0.12, melting point 60-61oC etc. Based on the data, it can be concluded that the use of natural colorants in lipstick formulation having very less or no side effect. Thus, the prepared lipstick can take safe and effective after thorough clinical trials.

Keywords: Herbal lipstick, Essence, Bee wax, olive oil, coconut oil, Formulation, Evaluation.

INTRODUCTION

Cosmetic word is derived from the Greek word "kosmetikos" which means the power, arrange and skill in decorating¹. In the ancient era around 3000BC back people used to hunt the animals by decorating different colors and they used to protect themselves by coloring their body to make fear in animals and other enemies (whether man or animal)². Cosmetics were discovered long ago and the origination was associated with many factors such as hunting of animals, superstitious belief, religious facts and fighting amongst communities and later it was also related to medical reasons and medicines also³. Cosmetics including substances and products are used to enhance and change the overall appearance of the body. They are designed in such a manner for applying on the face, hair and body. Herbal cosmetics are the cosmetics in which one or more herbal ingredients are used to form base^{4,2}. Phytochemicals are the substances which present in the herbal cosmetics. This influences the functions of the skin and provides necessary nutrients for healthy glowing skin or hair³. A lipstick is a cosmetics product which is most widely used cosmetics. It contains pigments, oils, waxes, and emollients that provide color, texture, and protection to the lips. Many colors and types of lipstick exist. Some lipsticks are also lip balms, to add color and hydration⁴.

Ideal Characteristics of Good Lipstick:

- 1) It should be non - irritant.
- 2) It should have required plasticity.
- 3) It should non-toxic.
- 4) It should be stable (physically and chemically).

- 5) It should not dry on storage.
- 6) It should be free from gritty particle.
- 7) It should be long lasting.
- 8) Its appearance should be smooth, shiny and free from sweating.
- 9) It should have pleasant taste, odor and flavor.
- 10) It should not melt or harden within reasonable variation of climatic temperature⁵.

The pigments used in lipstick formulation include Synthetic as well as Natural. In current scenario lipsticks create of much health related problem because of their harmful chemical. It also becomes the lips blackish in color. It is very dangerous to consume this kind of synthetic dye by the user. It may cause cancer in a very severe form. Because of this kind of adverse effect in the present investigation we can formulate an herbal lipstick from papaya extract which may create very less or zero side effects⁶.



Figure 1: Papaya Fruit



Papaya (*Carica papaya L.*) is widely cultivated in tropical and subtropical environments. The two major papaya fruit flesh colors, red and yellow. High level of lycopene contains in Red-fleshed papaya fruit contain high levels of lycopene, whereas yellow-fleshed fruit contains minimal level (Figure 1) ⁷⁻¹⁰.

MATERIALS AND METHODS

Papaya used in formulation of herbal lipstick was collected in the months of March 2019 from the local market of Ujjain district.

Extraction of lycopene from papaya

Materials Required

1. Red-fleshed papaya
2. Acetone
3. Petroleum Ether
4. Magnesium Sulphate
5. Whatman Filter Paper

Procedure

Peel of the ripe papaya and make paste using mixture grinder. 100 gm of papaya paste was weighed and to these 125ml of acetone was mixed. Allow to stand for 3-4 mins to remove water. The mixture was filtered by using Whatman Filter paper. The filtrate was collected and squeezed by using a filter paper to dehydrate the paste. Now 125 ml of petroleum ether and magnesium sulphate was added to the filtrate and the content was stirred well for 3-4mins. Again, it was filtered by using Whatman Filter paper. Finally, the lycopene extract was filtered, collected and allowed to evaporate.

Method of preparation

Herbal lipstick was prepared by melting the bees wax, butter, coconut oil, and olive oil in porcelain dish on water bath with decreasing order of their melting point. Mixed coloring matter with Castor oil and heated. Mixed both the phases at the same temperature.

Evaluation of Herbal Lipstick¹¹⁻¹⁴

Color and Texture: Formulated lipsticks were checked for color, glossy and smooth texture.

pH: The pH of the herbal lipsticks was determined using digital pH meter.

Determination of Melting Point: Determination of melting point is an important parameter for lipstick formulation; as it is an indication of the limit of safe storage. It was determined by capillary tube method. Melt approximately 50mg sample of lipstick and filled into glass capillary tube opened at both ends. Capillary was cooled with ice for 2h and fastened with thermometer. Thermometer with capillary was deep in the beaker containing full of water which was placed on heating plate with magnetic stirrer. Heating and stirring was started slowly at fixed speed. The

temperature at which material moves along the capillary tube was considered as melting point.

Breaking Point: This test was carried out to find out the value of maximum load that lipstick can withstand before it breaks. This test gives strength of lipstick. It was checked by held lipstick horizontally in a socket inch away from the edge of support. Gradually the weight increases by a specific value 10gm at specific interval of 30 secs. The weight at which breaks was considered as the breaking point.

Softening Point: Lipstick should be able to withstand range of conditions to which it will be subjected in the consumer's handbag. It should be resistant to varying temperature conditions and be just as easy to apply in hot and as in cold weather. Softening point of lipstick was determined by Ring and Ball method.

Surface anomalies: Surface defect like formation of crystals on surface, contamination by moulds, fungi, formation of wrinkles, exudation of liquid substances and of solid fatty substances, etc. were studied

Aging stability: In this test prepared lipstick was stored at three different temperatures i.e. refrigerator temperature (4°C), room temperature (20-25°C) and high temperature (30-40°C) for 1h. After 1h various parameters such as bleeding, streaking, catering and blooming was observed.

Perfume stability: The prepared herbal formulation was tested after 30 days, to record perfume stability.

RESULTS AND DISCUSSION

In the last few decades, the use of cosmetics has been tremendously increased, and the chemical involved for formulating these cosmetics causes hazards to user health. However, the aim of present research work was formulation and evaluation of herbal lipstick, with a goal to minimize the side effects of the available synthetic lipstick in the market. Hence, from the result obtained in the present investigation shows that the herbal formulation has a better option with minimum side effects though detailed clinical trials may be done to access the formulation for better efficacy.

Table 1: Formula of herbal lipstick

S.No	Ingredient	Importance	Quantity
1.	Bees wax	Hardness	1gm
2.	Coconut oil	Hardness	1.5ml
3.	Olive oil	Glossy	1ml
4.	Castor oil	Blending agent	1ml
5.	Papaya extract	Coloring agent	2gm
6.	Lemon juice	Antioxidant	2ml
7.	Rose essence	Flavoring agent	qs
8.	Vanilla essence	Flavoring agent	qs





Figure 2: Extraction of Lycopene from Papaya



Figure 3: Preparation and evaluation of Lipstick

Table 2: Evaluation of formulated herbal lipstick

S. No.	Evaluation Parameter	Inferences	
		Prepared	Marketed
1.	Color	Yellowish orange	Orange
2.	Texture	Smooth	Smooth
3.	pH	6.5	6.6
4.	Skin irritation test	No	No
5.	Melting point	60-61°C	62-64°C
6.	Breaking point	145gm	140 gm
7.	Force of application	Good	Good
8.	Softening point	60°C	62°C
9.	Aging stability	Smooth	Smooth
10.	Perfume stability	+++	+++
11.	Surface anomalies	No defect	No defect

CONCLUSION

Study concluded that herbal lipstick can be successfully formulated using different natural ingredients such as white bees wax, butter, castor oil, coconut oil, olive oil, vanilla & rose essence, papaya extract and lemon. It is also concluded the use of natural colorants in lipstick formulation having very less or no side effect. Thus, the prepared lipstick can take safe and effective after thorough clinical trials.

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