

Formulation and Evaluation of Herbal Lipstick Containing Saffron as a Natural Colorant

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Abstract:

Ancient peoples were using lipstick which was made by natural sources to protect and to increase the beauty of lips. Herbal lipstick ingredients provide pigments, antioxidants, waxes, oils, fragrance and preservatives. Saffron used to look younger and brighter and also used to treat acne, wounds and skin diseases.

The herbal lipstick was formulated by using white bees wax, soft paraffin, coconut oil, almond oil, vanilla essence, orange juice, lemon juice and natural colorant saffron. Formulated lipstick was subjected to evaluation by different parameters like breaking point, softening point, melting point, surface anomalies, aging stability, perfume stability, solubility test and pH. Our formulated showed ideal properties of lipstick like spreading, shining and smoothness of lips after application. It was concluded that this herbal lipstick has better option to women with minimal side effects and further detailed studies are required to assess for better efficacy.

Keywords: Herbal lipstick; saffron; antioxidant; stability; surface anomalies.

صياغة وتقييم أحمر الشفاه العشبي المحتوي على الزعفران كمادة ملونة طبيعية

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الخلاصة:

كانت الشعوب القديمة تستخدم أحمر الشفاه المصنوع من مصادر طبيعية لحماية الشفاه وزيادة جمالها. توفر مكونات أحمر الشفاه العشبية أصباغ ومضادات الأكسدة والشموع والزيوت والمواد الحافظة. يستخدم الزعفران لتبدو أصغر سنا وأكثر إشراقا ويستخدم أيضا لعلاج حب الشباب والجروح والأمراض الجلدية. تمت صياغة أحمر الشفاه العشبي وخضع للتقييم من خلال معايير مختلفة مثل نقطة الانكسار، ونقطة التليين، ونقطة الانصهار، والشذوذ السطحي، وثبات الشبوخة، وثبات العطر، واختبار الذوبان، ودرجة الحموضة. أظهر أحمر الشفاه العشبي المصمم خصائص مثالية مثل نشر، لمعان

ونعومة الشفاه بعد التطبيق. تم استنتاج أن أحمر الشفاه العشبي هذا لديه خيار أفضل للنساء مع الحد الأدنى من الآثار الجانبية والمزيد من الفحص السريري المفصل ليتم تقييمه من أجل فعالية أفضل.

الكلمات المفتاحية: أحمر الشفاه العشبي زعفران؛ مضادات الأكسدة. المزيد؛ الشذوذ السطحي.

Introduction

From the ancient period, the cosmetics were made by natural sources which provide medicinal values, so both men and women were involved in makeup. Lipsticks were first used during Sumerian civilization. The natural stains were obtained from fruits, henna, insects and clay rust. Powder of jewels was used to add colour to the lips by Mesopotamian women ^[1].

Egyptians are first lovers of lipstick, Cochineal insects are very familiar during the ancient period because of the chemical called carminic acid which is present and used to make dye and food colorant. They were also using chemicals like lead and a mixture of polyalcohol mannitol and iodine which leads to chronic diseases ^[2].

From ancient period plant pigments such as carotenoids, anthocyanins, curcumin, chlorophyll and saffron have been used as a colouring agent in food and cosmetics to provide colour. Many commercial cosmetics contain synthetic colorants, heavy metals like arsenic, copper, cobalt and chromium which can cause allergy, dermatitis, carcinogenic and even fatal to users ^[3-5]. Nowadays healthy natural ingredients are incorporated in these cosmetic products.

Saffron is one of the oldest spices derived from the thread-like parts of the flower of *Crocus sativus* and it is largely cultivated in Iran. History reveals that Cleopatra used saffron in her beauty products and a Hindu women use saffron to make Bindi, which symbolizes good fortune and conscience ^[6]. Since ancient times, Saffron used to look younger and brighter and also used to treat acne, wounds, skin diseases, depression, Alzheimer disease and menstrual cramps ^[7,8]. In cosmetics, saffron has been used at low levels and also used as a substitute for tartrazine ^[9].

Saffron contains bioactive compounds such as anthocyanins, flavonoids (kaempferol), carotenoids (crocin and picrocrocin and crocetin), and also rich in vitamins, amino acids, proteins, mineral matter and gums ^[10] for potential cosmetic formulations ^[11,12]. Saffron protects skin from harmful UV rays ^[13], Depigmentation and anti-rhythmic (circadian clock genes present in skin helpful in regulation of the circadian rhythm), effect on human skin and antitumor activity ^[14,15].

The present study was designed to formulate herbal lipstick and evaluate the lipstick for different parameters such as colour, texture, pH, melting point, breaking point, softening point, surface anomalies, solubility, skin irritation; ageing and perfume stability were carried out respectively.

Materials and Methods

The three formulations of herbal lipstick (F1-F3) are composed of a definite ratio of the following ingredients: white beeswax, soft paraffin, coconut oil, almond oil, saffron, vanilla essence, orange juice and lemon juice.

Formulation of herbal lipstick

The herbal lipstick was formulated by extracting saffron powder with water and filtered. The different concentration of the filtrate was mixed into a melted base containing white beeswax, soft paraffin, almond oil and coconut oil. Remaining ingredients: vanilla essence, orange juice and lemon juice were added to the above mixture (Table 1). Finally pour the above mixture in to clean empty lipstick moulds and solidify by keeping in the refrigerator.

Evaluation of herbal lipstick ^[16-17]

Colour, Texture and pH

The Formulated herbal lipsticks were checked for colour, glossy and smooth texture.

The pH of formulated herbal lipsticks was determined using a digital pH meter.

Determination of Melting Point

The melting point of formulated lipstick was determined by the capillary tube method. The capillary is filled with formulation and attached to the thermometer and kept into a melting point measuring device. Measure the temperature at which lipstick is melted.

Breaking Point

This test was performed to determine the strength and hardness of the formulation. Formulated herbal lipstick was held horizontally in a socket inch away from the edge of support. The weight was increasing 10 gm at a specific interval of 30 seconds and the weight at which lipstick breaks was considered as the breaking point.

Softening Point

This parameter is useful to determine the resistance of formulated lipstick to conditions like hot and cold weather. Softening point was determined by the Ring and Ball method by keeping formulation on the orifice and a steel ball was kept above it. As temperature increases lipstick and steel balls were fall to the bottom of the beaker and record the temperature as softening point of the lipstick

Surface anomalies and Aging stability

This method is useful to determine the surface defects of the formulations, such as formation of crystals, wrinkles, bleeding and contamination by microorganisms like moulds, fungi by keeping them at different temperatures.

Perfume stability

The formulated herbal lipsticks were tested for fragrance stability after 30 days formulation.

Results and discussion

In recent time's lipsticks formulated by the synthetic chemicals are under the scanner of many health watchers. Lipsticks are often consumed by the user and hence it is very important to have a look at the ingredients that go into the lipstick. Most of the lipsticks are made up of heavy metals like manganese, lead, chromium, cadmium, petrochemical products etc., which considered to be health hazards like cancer, skin irritation and more. So, the present study was aimed to prepare and evaluate the formulated herbal lipstick using natural ingredients with a hope to minimize the side effects as produced by the available synthetic products. Herbal lipstick was successfully formulated by using saffron as natural colorant, beeswax, white paraffin, coconut oil, olive oil, castor oil, rose essence, lemon juice and vitamin E.

The three (F1, F2 and F3) formulated herbal lipsticks (Table 1) were evaluated (Table 2) and it was found that herbal lipstick F3 was found to be the best among all the three formulations.

The formulation by contains natural sources which acts as antioxidant, anti-wrinkle, anticancer, anti-inflammatory agents etc.

Conclusion

Hence from present investigation it was concluded that this formulated herbal lipstick has minimal side effect and better option to women. Further detailed studies are required to find the better efficacy.

Table 1. Ingredients with their prescribed quantity in the formulation of herbal lipstick

S.No.	Ingredients	Quantity		
		F1	F2	F3
1	Beeswax	3 g	3 g	2 g
2	White paraffin	1 g	1 g	1 g
3	Coconut oil	2 ml	2 ml	2 ml
4	Almond oil	4.5 ml	4 ml	4 ml
5	Saffron extract	1 ml	2 ml	2 ml
6	Orange juice	2 ml	2 ml	2 ml
7	Lemon juice	0.5 ml	0.5 ml	1 ml
8	Vanilla essence	1 ml	0.5 ml	1 ml

Table. 2. Evaluation of formulated herbal lipsticks (F1-F3)

S.No.	Parameters	Inference		
		F1	F2	F3
1	Colour	Red	Red	Red
2	Texture	Smooth	Smooth	Smooth
3	pH	6.0	6.4	6.1
4	Melting point	59°C	62°C	58°C
5	Breaking point	28g	32 g	29 g
6	Surface anomalies	Sweating	No defect	No defect
7	Aging stability	Oil bleed	Smooth	Smooth
8	Perfume stability	Slight	Good	Good
9	Skin irritation	No	No	No
10	Solubility	Ether	Ether	Ether

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