

FORMULATION AND EVALUATION OF HERBAL LIPSTICK FROM COLOUR PIGMENTS OF *BIXA ORELLANA* (BIXACEAE) SEEDS

ABHIJEET A. AHER^{1*}, SHRIPAD M. BAIRAGI², PREETI T. KADASKAR³ SWAPNIL S. DESAI⁴, PRADEEP K. NIMASE¹

¹Department Of Pharmaceutics, MES College of Pharmacy, Sonai, Tal- Newasa, Dist-Ahmednagar, Maharashtra, 414105. India,

²Department Of Pharmacology, MES College of Pharmacy, Sonai, Tal- Newasa, Dist-Ahmednagar, Maharashtra, 414105. India, ³Department Of Quality Assurance Techniques, Padmashree Dr. Vithalrao Vikhe Patil College of Pharmacy, Ahmednagar, Maharashtra, India 414111,

⁴Department Of Technology Transfer, Dr. Reddy's Lab, Hyderabad, Andhara Pradesh, India. Email: abhijeet.aher9@gmail.com

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ABSTRACT

Coloring skin particularly skin of face and lips is an ancient practice going back to prehistoric period. In present days the use of such product has increased and choice of shades of color, texture and luster have been changed and become wider. This can be observed from the fact that lipsticks are marked in hundreds of shades of colors to satisfy the demand of women. The present investigation was done to formulate herbal lipstick from *Bixa Orellana* seeds, since lipsticks are one of the key cosmetics to be used by the women. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate a herbal lipstick having minimal or no side effects which will extensively used by the women of our communities with great surety and satisfaction. Attempt was also made to evaluate the formulated herbal lipstick and the F-IV was found better and accepted by female volunteers.

Keywords: *Bixa Orellana*, Cosmetics, Herbal lipstick, Formulation.

INTRODUCTION

The word herbal is a symbol of safety in contrast to the synthetic one which has adverse effects on human health. Herbal preparations viz., herbal tablets, herbal tonics, herbal paste, herbal shampoo, herbal sindhur, herbal contraceptives and herbal lipstick has become popular among the consumer herbal medicines represent the fastest growing segment to heal the various ailments. Possibly, herbal user desire to assume control over health care needs. Perhaps the large in personal healthcare system is unpalatable to many and they turn to herbal medicine due to increase side effects of available synthetic preparations^{1,2}. Cosmetics are substances used to enhance the appearance of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels. Deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products are in great demand in both developing and developed countries³. Herbal cosmetics have growing demand in the world market and are an invaluable gift of nature. There are a wide range of herbal cosmetics products to satisfy your beauty regime, adding herbal in cosmetic is very safe for skin. Human being have been using herbs for different purpose like food, medicine, beautifying with advancement of science and technology use of natural things including plant has been reduced except for food, vegetarian takes plant & plant only. However there is resurgence of use of herbs both as drug and cosmetics.

Coloring lips in an ancient practice date back to prehistoric period. In present days the use of product has increased and choice of shades of colors textures, luster, have been changed and become wider. This can be observed from the facts that lipstick is marketed in hundred of shades of colors to satisfy the demand for the women⁴. In recent time's lipsticks have been under the scanners of many health watchers. Lipsticks are often eaten away by the user and hence it is imperative that health regulators have a microscopic look at the ingredients that go in to the lipstick. The dyes that contribute to the color of the lipstick are dangerous to humans on consumption. In a mild form, the coal tars that are the basic ingredients from which synthetic dyes are formed can cause allergy, nausea, dermatitis, and drying of the lips. In a more severe form they can be carcinogenic and even fatal. Due to various adverse effects of available synthetic preparation the present work was conceived by us to formulate an herbal lipstick having minimal or no side effects which will extensively used by the women of our communities with great surety and satisfaction.

Bixa orallana, belonging to the family Bixaceae, is used for the treatment of liver disorders. It is a small handsome evergreen tree, leaves are cordate, acuminate, flowers are white or pink in terminal panicle, fruits reddish brown, and seeds are trigonous covered with a red pulp. The roots bark and seeds of *B. orellana* are antiperiodic, antipyretic and astringent. They are useful in intermittent fevers and gonorrhoea. The pulp surrounding the seed is a mosquito repellent and is useful to treat dysentery. The decoction of the root is used for liver diseases. The whole plant is bitter, purgative, cures leprosy, biliousness, kidney disorders and vomiting. Seeds and leaves of the annatto tree were used by the Aztecs to prepare remedies for a variety of illnesses such as tonsillitis, asthma, pleurisy, rectal disorders, headache, jaundice, sunstroke, and burns⁵.

MATERIAL AND METHODS

Selection of herbs

The various herbs used in the formulation of herbal lipsticks were selected on the basis of literature survey^{6,7}.

Collection and authentication of herbs of plant material

The herb used in formulation of herbal lipstick were collected in the months of August 2011 from the Agricultural University, Rahuri, Ahmednagar (MS) and herb was then authenticated from Botanical Survey of India, by botanist J.Jayanthi, Pune; having voucher no. PASBI01. The authenticated plant seeds were used for preparation herbal lipstick.

Extraction of colour pigments

The shade dried coarsely powdered seeds of *Bixa orellana* (150 gms) were extract with Methanol (60-80°C) for 18 hrs. After completion of extraction, the defatted extract was filtered while hot through Whatman filter paper (No.10) to remove any impurities if present. The extract was concentrated by vacuum distillation to reduce the volume to 1/10; the concentrated extract was transferred to 100 ml beaker and the remaining solvent was evaporated on a water bath. Dark reddish coloured extract was obtained. The concentrated extract was then kept in desiccators to remove the excessive moisture. The dried extract was packed in air tight glass container for further studies⁸.

Formulation of Herbal Lipstick

The herbal lipstick was formulated as per method described^{9,10}. The ingredients used in the formulation of herbal lipstick are shown in Table 1.

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

Ingredients	Quantity (percentage)			
	F-I	F-II	F-III	F-IV
Castor Oil	40.0	40.0	36.0	36.0
Bees wax	5.0	15.0	15.0	--
Lanolin	12.5	12.5	12.5	--
Isopropyl myristate	2.5	2.5	2.5	2.5
Ozakerite wax	25	15.0	15.0	30.0
Propylene glycol	5.0	5.0	5.0	10.0
Glyceryl monostearate	4.0	4.0	4.0	9.5
Colour (Extract)	6.0	16.0	10.0	12.0
Vanilla essence and Preservatives	q.s.	q.s.	q.s.	q.s.

Evaluation of Herbal Lipstick

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

Melting point

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 capillary tube method, the capillary was filled and kept in the capillary apparatus and firstly observed the product was slowly-slowly melted. After sometimes observed product was completely melted. The above procedure was done in 3 times and the melting point ratio was observed in all formulation.

Breaking point

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

Force of application

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

Surface anomalies

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

Aging stability:

The product was stored in 40°C for 1 hrs. Various parameters such as bleeding, crystallization of on surface and ease of application were observed.

Solubility test

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

pH parameter

The pH of formulated herbal lipstick was determined using pH meter.

Skin irritation test

It is carried out by applying product on the skin for 10 min.

Perfume stability

The formulation herbal lipstick was tested after 30 days, to record fragrance.

Acceptance

The acceptance study carried to study acceptance of the products, for this study the four formulations of the herbal lipstick shown to the 50 female volunteer and percentage of acceptance was calculated.

Table 2: Evaluation of formulated herbal lipsticks (F-I to F-IV)

Evaluation Parameters	Inference			
	F-I	F-II	F-III	F-IV
Colour	Yellowish red	Dark Red	Faint Red	Faint Red
pH	6.3±0.2	6.7±0.3	6.5±0.1	6.5±0.4
Skin irritation	--	--	--	--
Melting point	52 ^{0c}	52 ^{0c}	48 ^{0c}	52 ^{0c}
Breaking point	23	30	32	31
Force of application	Bad	Good	Good	Good
Perfume Stability	+	++	+++	+++
Surface anomalies	Yes	No	No	No
Aging Stability	Smooth	Smooth	Smooth	Smooth
Solubility	Methanol	Methanol	Methanol	Methanol
Acceptance	0%	32%	58%	10%

**Fig. 1: Photographs of formulated herbal lipstick (F-I to F-IV)**

RESULTS AND DISCUSSION

The present work formulation and evaluation of herbal lipsticks was aimed to formulate a lipstick using herbal ingredients with a hope to minimize the side effects as produced by the available synthetic ones. The prepared formulation (Table 1) was evaluated (Table 2) and it was found that the herbal lipstick, F-III (Fig.1) was best among the five formulations. Hence, from present investigation it was concluded that this formulated herbal lipsticks has better option to women with minimal side effects though a detailed clinical trials may be done to access the formulation for better efficacy.

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