

Research Article

FORMULATION AND EVALUATION OF NATURAL LIPSTICKS PREPARED FROM
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ABSTRACT

Lipstick used to impart an attractive colour and glossy moisture appearance to lips. Lipstick is a Cosmetic Product Containing Pigments, oils, waxes and emollient that apply colour, texture and protection to the lips. . With this aim and objectives, an attempt was made to formulate natural lipsticks by using coloring pigments of Delonix Regia petals and the lipsticks were evaluated for their organoleptic properties such as spreading, hardness, shine and gloss and found to be satisfactory product to give attractive beauty .The preparation of this lipsticks with the natural ingredients like Delonix Regia petals Carrot root, Olive oil, Ripe fruit powder of shikakai. Due to various adverse effects of available synthetic preparation, the present work was conceived by us to formulate a herbal lipsticks having minimal or no side effects Delonix Regia Flower Petals are used For Lipstick. The plant shows diverse therapeutic prospective such as Antifungal, Antibacterial, Antioxidant, Antiemetic, Antiinflammatory, Antimalarial, Wound healing and Anticarcinogenic potential it is repair cracked lip .it is act as a natural moisturizer.

INTRODUCTION:

Delonix regia is a species of flowering plant in the bean family Fabaceae, sub family Caesalpinioideae native to Madagascar. It is noted for its fern-like leaves and flamboyant display of orange-red flowers over summer. In many tropical parts of the world, it is grown as an ornamental tree and in English it is given the name royal poinciana, flamboyant, flame of the forest, or flame tree (one of several species given this name) The flowers of Delonix regia are large, with four spreading scarlet or orange-red petals up to 8 cm (3 in) long, and a fifth upright petal called the standard, which is slightly larger and spotted with yellow and white. They appear in corymbs along and at the ends of branches. The naturally variety flavedo (Bengali: Radhachura) has yellow flowers.[1] The pods are green and flaccid when young and turn dark-brown and woody. They can be up to 60 cm (24 in) long and 5 cm (2 in) wide. The seeds are small, weighing around 0.4 grams (6.2 grains) on average.

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The compound (doubly pinnate) leaves have a feathery appearance and is a characteristic light, bright green. Each leaf is 30–50 cm (12–20 in) long with 20 to 40 pairs of primary leaflets or pinnae, each divided into 10–20 pairs of secondary leaflets or pinnules. Pollen grains are elongated, approximately 52 µm in size. The royal poinciana requires a tropical or near-tropical climate, but can tolerate drought and salty conditions. It prefers an open, free-draining sandy or loamy soil enriched with organic matter. A Familiar Ornamental tree with a spreading foliage, It is considered as one of the most beautiful Flowering tree of topical and Subtropical Climate. The flower varies From Orange Colour to bright Red. The leaf Foliage has a delicate, fine, Feathery Look. It grows well in climate.



Figure No. 01 Delonix Regia tree & Flowers

The tree doesn't like heavy or complexion soils and flowers more profusely when kept slightly dry. The general name, 'Delonix', is derived from Greek words-delos (visible), and onyx (claw), due to the conspicuously clawed petals. The specific name, 'regia', is from the Latin word 'Regis' (royal, regal, magnify). It's called as chura, radha (in Bengali), royal, flamboyant, poinciana (in French), gul mohr, shima, sunkesula (in Hindi), mayirkonrai, panjadi (in Tamil), flamboyant flame tree, gold mohur, flame tree, peacock flower, gul mohr and royal poinciana (in English). The plant *Delonix regia* belongs to family Fabaceae, sub-family Caesalpinioideae. It's a tree (10-15 m high, circumference of upto 2 m) with numerous branches and umbrella shaped crown. It has biparinnate, alternate, light green, featherlight leaves, 10-25 pairs of pinnae, each having 12-40 pairs of small circulars. Near the end of the branch are present 15-30 cm long corymbs, which are borne indirectly, each having approximately arranged slightly fragrant orange-red flowers, which literally cover the tree from May to June. Petals (5-6.5 cm, 2-3 cm wide) are broadly spoon shaped. The tree is native to Madagascar and has been extensively planted for the last 150 years as a garden and avenue tree in both dry and moist regions of tropical India. It's distributed in the countries like Brazil, Burkina Faso, Cyprus, Egypt, Eritrea, Ethiopia, India, Jamaica, Kenya, Mexico, Nigeria, Singapore, South Africa, Sri Lanka, Sudan, Tanzania, Uganda and United States of America. Light is needed for its growth but under shade, it grows weakly and sparsely. It grows in areas with both high and scanty rainfall.[2,3]

There's ample literature that emphasizes the traditional use of this plant in countries similar as India, Bangladesh, Zambia and Cameroon. Though some workers have also explored its bioactivities; yet there's stingy experimental evidence for its traditional use. The phytochemicals in this plant possess different natural conditioning including protection against colourful pathogens. The enormous significance of the Phyto- ingredients in *Delonix regia* cannot be ignored and comprehensive sapience into their function in various fields and the mechanisms operating behind them is essential. The present review focuses on the advantageous bioactivities of *Delonix regia* similar as antifungal, antibacterial, antioxidant, antiemetic, larvicidal, hepatoprotective, anti-diarrheal, anti-inflammatory, antimalarial, anthelmintic, antiarthritic, wound healing and anticarcinogenic eventuality, along with their experimental evidence and mode of action. The leaves and fruits were used in piles and helminthiasis in the areas of Firozpur district, Bangladesh^[8]. The investigation conducted on Sylhet district, Bangladesh revealed the use of leaves and fruits in

piles and boils. Fruits eaten for piles and crushed leaves and fruits applied to boils[9].

The bark used as traditional fever remedy in Zambia^[4]. *Delonix regia* has been used by the tribal belts in Birbhum district, West Bengal, India [5]. *Delonix regia*, an ethnomedicinal plant possessed antibacterial activity [6]. The different parts of *Delonix regia* were used by the tribes of Chhatarpur district, Madhya Pradesh, India [7] for the treatment of diseases. The seeds were used in pyorrhoea; the roasted and crushed leaves were wrapped in a cloth and inhaled just after scorpion bite; infusion of flowers was used in bronchitis, asthma and malarial fever. The leaves were also used in rheumatism and as purgatives. The plant has antirheumatic and spasmogenic potential. The bark showed antiperiodic, febrifuge potential; aqueous and ethanol extract of flowers were used against round worms [8].

LITERATURE SURVEY

Saxena's et.al (1986) evaluated *Delonix regia* (Boj. ex Hook.) Raf for disruptor of insect growth and development. It's a preliminary laboratory evaluation of an extract of leaves of *Delonix regia* (Boj. ex Hook.) Raf disruptor of insect growth and development⁽¹⁰⁾

Marfo.E.K. (1989) evaluated chemical and nutritional properties of Flamboyant beans (*Delonix regia*) *Delonix regia* (Boj. ex Hook.) Ra^[11]

Kpikpi.W.M (1992) RATD tried *Musanga cropioides* and *Delonix regia* (Boj. ex Hook.) Raf as papermaking hardwoods⁽¹²⁾ .

Chang-Hung Chou (1992) bio assayed a series of aqueous extracts of leaves, flowers and twigs of *Delonix regia* (Boj. ex Hook.) Raf against three species to determine their phytotoxicity and the results showed highest inhibition in the flowers. By means of TLC, HPLC and Paper chromatography and UV-Visible spectrometry the responsible phytotoxins present in leaves, flowers and twigs of *Delonix regia* (Boj. ex Hook.) Raf were identified as 4-hydroxy benzoic, chlorogenic .etc. [13]

Dutta et.al (1998) studied invitro the aqueous extracts of plants such as *Terminalia chebula*, *Punica granatum*, *Delonix regia* (Boj. ex Hook.) Raf and *Emblca officinalis* for Dermatophytes [14].

Enikuomehin OA. et.al (1998) evaluated eleven ash samples from organs of nine tropical plants for their abilites to inhibit mycelial growth and sclerotia germination of a Nigerian isolate of *Sclerotium Rolfson* on agar and in the soil. Ash sample from *Delonix regia* (Boj. ex Hook.) Raf stem wood, *Mangifera indica* leaf and *Vernonia amygdalina* leaf were most effective as each totally inhibited mycelial growth of *Sclerotium rolfsii* in vitro [15] .

Polikarpov .et.al (1999) purified, crystallized studied preliminary crystallographic study of a Kunitz –type trypsin inhibitor from *Delonix regia* (Boj. ex Hook.) Raf seeds. The Kunitz-type trypsin inhibitor from seeds of *Flambyoant* has been purified to homogeneity and plate like crystals suitable for X-ray analysis have been grown by the hanging-drop method, the structure has been solved by molecular replacement using the known structure of Trypsin inhibitors from *Erythrina Caffra* seeds, Soya beans as search models [16].

Muruganaandan.et.al (2001) screened anti-inflammatory and analgesic activities of some Medicinal plants. The extracts of some medicinal plants were used at the dose rate of 300Kg,p.o. Aspirin (300mg/Kg,p.o) was employed as reference drug. Significant anti-inflammatory activity was observed with *Delonix regia* (Boj. ex Hook.) Raf bark. *Pongamia Pinnata* seeds, *Psidium guavajava* leaves and *Aegle marmelos* bark [17].

Srinivasan, K. et.al (2001) evaluated seventy percent ethanolic extracts (300mg/Kg p.o.) of *Delonix regia* (Boj. ex Hook.) Raf (Bark and Flowers), *Psidium guavajava* leaves, *Aegle marmelos* (Bark) exhibited significant anti-inflammatory activities in rats. However, *Butea frondosa* (Flower) *Pinus longifolia* (Leaves) *Eugeia jambolana* didn't exhibit significant activity. *Pongamia pinnata* (Seeds) and *Delonix regia* (Boj. ex Hook.) Raf (Bark and Flowers) exhibited significant Analgesic Activity [18].

COLLECTION OF PLANT MATERIAL

The herb used in formulation of herbal lipstick were collected in month of April from Garden of Pravara Rural College of Pharmacy, Pravaranagar. The plant material was identified and Authenticated by Department of Botany. The Herbarium of plant deposited it has been identified from Pravara Senior College, Loni. The collected herbs were shade dried under normal environmental condition, powdered, stored in closed container for further uses.

EXTRACTION OF COLOUR PIGMENTS

The shade dried coarsely powdered seeds of *Delonix regia*(100 gm) were extracted with methanol (60-80°C) for 6 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 colored 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 studies ⁽¹⁹⁾ .



Figure No. 02 Extraction and filter Assembly of Delonix Regia Petals.

METHODOLOGY

The Melt oil and waxes in a crucible with increasing melting point at 75- 78-degree selkies with stirring then add rest ingredient except extract. Extract is added in melted cool mixture at 42-degree selcius and then fill in mold.

FORMULATION OF NATURAL LIPSTICK

The Natural lipsticks were formulated as per method Described [20].

Table No. 01 Ingredient table for Delonix Regia lipstick

Sr. No	Ingredients	Quantity Given (gm)	Quantity Taken (gm)	Importance
1	Olive oil	13	0.6	Blending agent
2	Paraffin wax	29	1.3	Gloss and hardness
3	Bees wax	37	2.0	Glossy and hardness

4	D.regia extract	0.8	0.04	Colouring agent
5	Shikakai powder	14	0.75	surfactant
6	Rose water	01	0.05	Flavouring agent
7	Aloevera	0.1	0.02	Antioxidant



Figure No. 03: prepared molds of Delonix Regia extracts

Evaluation of Prepared natural Lipstick-

Table No. 02 Evaluation parameter of Delonix Regia lipstick

Sr no	Evaluation Parameters	Inferences
1	Color	Reddish pink color
2	pH	6.7
3	Skin irritation	No
4	Melting point	69
5	Breaking Point	30
6	Force of application	Good
7	perfume stability	++
8	Surface anomalies	No
9	Aging Stability	Smooth
10	Texture	Smooth

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 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 :

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

Force of Application

It's test for relative dimension of the force to be applied for application. A part 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 completely covered. The pressure reading is a suggestion of force of application.

Surface anomalies

:This was studied for the surface defects, similar as no conformation crystals on surfaces, no impurity by molds, fungi etc.

Aging stability

The products were stored in 40°C for 1 hrs. Various parameters similar as bleeding, crystallization of on surface and ease of use were observed

Solubility test

The formulated herbal lipstick was dissolved in different solvent to observe the solubility.

pH parameter

The pH of formulated herbal was determined using digital pH measure.

Skin irritation test

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

Perfume stability

The formulated herbal lipsticks were tested after 30 days, to record see.

RESULT & DISCUSSION

Different natural ingredients were used for formulating natural lipsticks that contain coloring agent which is a natural colorant obtained from herb *Delonix Regia Petals* extract the effect of different natural ingredients on different evaluation parameters in the formulation have been investigated. The prepared lipsticks as per Table no:- 01 formulation and their evaluation done as per Table No:- 01 and it was found that herbal natural lipstick, NLI was best among all three lipsticks formulations.

Hence from present investigation it was concluded that this formulated herbal lipstick having minimal and no side effects and thus showing maximum local effect on lips.

CONCLUSION

This research provides guideline on the use of herbal constituents on the medication of lipsticks having minimal or no side effects. The natural constituents like Olive oil rose oil powder of Shikakai were used in the medication of natural powders along with *Delonix Regia* coloring agent. The present study proves that the *Delonix Regia* are coloring agents containing lipstick was stylish among both natural powders. The ready lipsticks were show

excellent properties like shining, spreading and smoothness of lips. The investigation finding also provides a guideline on goods of constituents towards the physical properties and consumer acceptance of the lipstick formulations. Study conclude that herbal lipstick can be successfully formulated using different Natural ingredient Olive oil , Paraffin wax, Bees wax, Delonix Regia Extract, Aloe vera, Rose water, Shikakai powder etc. It is also concluding the use of natural colorant in lipstick formulation having very less or no side effect thus the prepared lipstick can take safe and effective after thorough evaluation test

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