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(RESEARCH ARTICLE)



Sacred eyes: Formulation and evaluation of Ficus religiosa herbal kajal

Polly Gupta *, Shashank Tiwari, Shreyansh Pandey and Azaj Ahmad

Lucknow Model College of Pharmacy, Lucknow, India.

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Abstract

In India, kohl has been used for cosmetic purposes for centuries it is use as cosmetic and treats the eye problems. Kajal is mainly used for eye makeup. Herbal kohl is a product used as a medicine because a cosmetic was a new prescribing method. The aim of the preparing formulation that is medicated herbal kajal is to treat eye inflammation and eliminate redness of the eye. Stability and patient-friendly nature are the main advantages of these products. The medicinal products Ficus Religiosa, Rose oil, Almond oil, Camphor and Ghee are used to formulate the herbal kajal. Evaluation of the medicated herbal kajal is carried out by using the different parameter like pH, Spreadability, Physical evaluation etc., the black soot (kajal powder) is prepared by using copper plate and evaluated.

Keywords: Kajal; Kohl; Ficus religiosa; Anti-inflammatory

1. Introduction

Cosmetics is a Greek phrase which means 'adorn' (addition of something ornamental to someone or a thing). FD&C act defines cosmetics as articles meant to be rubbed, poured, sprinkled or sprayed on, or changing the look. Cosmetics encompass pores and skin care creams, lotions, powders, perfumes, lipsticks, fingernail and toenail polish, eye and facial makeup, colored touch lenses, hair colors, hair sprays, toddler cosmetics have developing call for within side the international marketplace and are a useful present of nature. There are a huge variety of natural beauty merchandise to meet your beauty regime. The beauty education has sorts of residences like antioxidant, anti-inflammatory, antiseptic and antibacterial and so on. Herbal Cosmeceuticals are gaining high-quality interest now a days because of their huge variety of availability and less facet effects. There are good sized flora and herbal elements to be had commercially as a cosmeceutical. Saundarya Prasadak allows every individual to feel beautiful & healthy about themselves. They are referred to as beauty products which are formulated by using variousherbal ingredients to provide defined cosmetic benefits. Indian herbs and their significance are popular worldwide. An herbal cosmetic has a growing demand in the world market and is an invaluable gift of nature. Herbal formulations always have attracted considerable attention because of their good activity and having no side effects. Herbs and spices have been used in maintaining and enhancing human beauty.^[1]

1.1. Benefits of organic kajal for eye health

Now, let's delve into the specific benefits of using organic kajal for maintaining healthy eyes:

Natural Cooling Effect: Many organic kajal contain ingredients like camphor and menthol, which provide a cooling sensation to the eyes. This can help reduce eye strain and discomfort, especially after long hours of screen time.

* Corresponding author: Polly Gupta.

Hydration: Organic kajal often contain ingredients that help keep the eyes moist and hydrated. This is crucial for individuals who experience dryness or discomfort due to excessive screen use or environmental factors.

Protection from Environmental Pollutants: Organic kajal acts as a protective shield for your eyes, helping to prevent dust, smoke, and pollutants from directly affecting your ocular health.

Enhanced Beauty: Organic kajal enhances the beauty of your eyes naturally, making them appear more vibrant and expressive without the risk of chemical exposure.

Reduced Redness and Irritation: The gentle formula of organic kajal minimizes the chances of redness or irritation associated with eye makeup, making it suitable for those with sensitive eyes.^[7]

1.2. Applications of API

1.2.1. *Ficus religiosa*

Biological Source - *Ficus religiosa* or sacred fig is a species of fig native to the Indian subcontinent and Indochina that belongs to Moraceae, the fig or mulberry family.

Description - It is also known as the bodhi tree, peepul tree, pipal tree, pipala tree or ashvatthatree (in India and Nepal).

1.2.2. *Uses*

It helps to soothe itchiness caused by bacterial skin infections.

It also helps lighten pigmentation, dark spots, blemishes and stretch marks.

It has antiseptic and healing properties, hence it is often used to heal and soothe cracked heels.



Figure 1 Ficus Religiosa Leaf

1.3. Application of Ingredients

1.3.1. *Rose oil*

Biological Source - Rose oil is obtained from the petals of different Rosa species especially *Rosa centifolia* L. and *Rosa Damascena* Mill.

Description - Color- Light yellow color with a greenish tinge.

Uses

- Rose oil has antiseptic, bactericidal and anti-inflammatory properties.
- It can be used as a very valuable remedy for inflammation and irritation, including eczema and allergic rashes.
- It also soothes irritated skin, Hydrates & Nourishes the skin prevents early signs of aging. Reduces dark circles & under-eye puffiness.
- It Improves overall skin texture, uplifts mood.

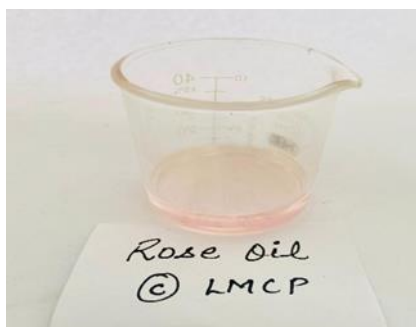


Figure 2 Rose oil

1.3.2. Almond oil

The almond (*Prunus Amygdalus*, syn. *Prunus dulcis*) is a species of tree from the genus *Prunus*. Along with the peach, it is classified in the subgenus *Amygdalus*, distinguished from the other subgenera by corrugations on the shell (endocarp) surrounding the seed.

Uses

- It is used to shield your skin from sun damage
- It Strengthens the skin's protective barrier, and reduce the indications of ageing.
- It contains Omega 3 fatty acids, which can prevent you from the sun's damaging Ultraviolet radiation and prevent you from age spots.

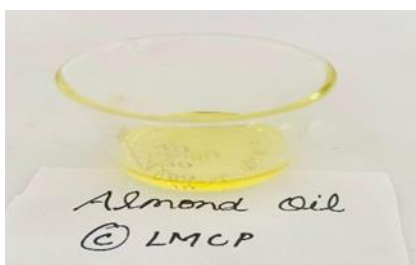


Figure 3 Almond Oil

1.3.3. Cow Ghee

Ghee is typically prepared by simmering butter, which is churned from cream, skimming any impurities from the surface, then pouring and retaining the clear liquid fat while discarding the solid residue that has settled to the bottom. The texture, color, and taste of ghee depend on the quality of the butter, the milk used in the process, and the duration of boiling time.

Uses

- Cow ghee is used for brightening.
- It is also used in reducing dark spots
- It moisturizes and hydrates the skin.



Figure 4 Cow Ghee

1.3.4. Camphor

Camphor is a chemical that used to be made by distilling the bark and wood of the camphor tree. Today, camphor is usually made from turpentine oil. Camphor has a very distinct smell. Camphor products include camphorated oil or camphorated spirits.

Uses

- It seems to stimulate nerves and help with symptoms such as pain and itching
- Camphor and menthol help in providing a cooling sensation to the eye
- Together CAMPHOR+MENTHOL+NAPHAZOLINE+SODIUM CARBOXY METHYL CELLULOSE helps provide relief from various conditions of eyeallergies with red, itchy and dry eyes.

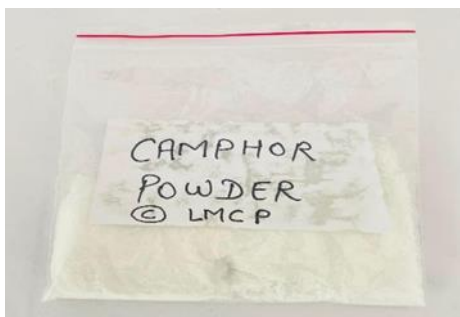


Figure 5 Camphor Powder

2. Materials and Methods

2.1. Materials and Method of Formulation

Instrument and its role/uses

Various type of instrument used in preparation of Herbal Kajal listed below:

Table 1 List of Instruments

Sr. No.	Instruments	Role/Uses
1	Water bath	Heating
3	Weighing balance	Weighing
4	pH	Measurement of pH

2.2. Material and its role/importance

Various ingredients used in the preparation of Herbal Kajal listed below:

Table 2 List of Ingredients

Sr. No.	MATERIAL/INGREDIENTS	ROLE
1	Ficus Religiosa	Anti-inflammatory & Antioxidant
2	Almond Oil	Antioxidants
3	Cow Ghee	Binder
4	Camphor	Cooling Effect
5	Rose Oil	Antibacterial

2.3. Extraction of *Ficus religiosa*

2.3.1. Collection of Plant Material

Ficus religiosa or sacred fig is a species of fig native to the Indian subcontinent and Indochina that belongs to Moraceae, the fig or mulberry. *Ficus Religiosa* leaves are collected from the LMCP herbal garden.

Scientific name: *Ficus religiosa*

Family: Moraceae



Figure 6 *Ficus religiosa* leaves

2.3.2. Method of extraction



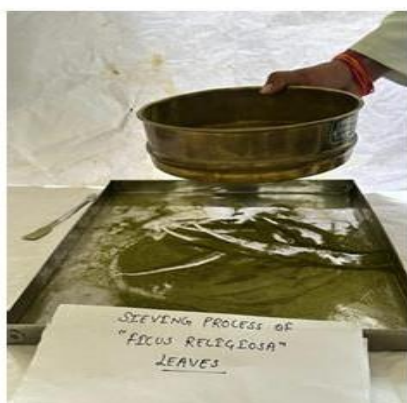
Fresh leaves of *Ficus religiosa*



Dried leaves of *Ficus religiosa*



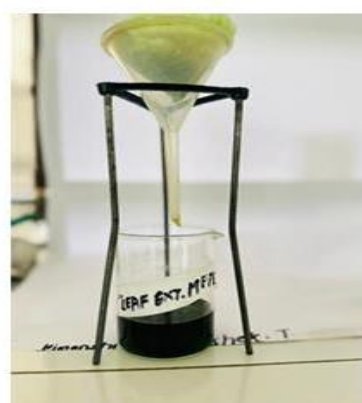
Grinding of *Ficus religiosa*



Sieving process of *Ficus religiosa* powder



Extraction process of *Ficus religiosa*



Filtration of *Ficus religiosa* extract

Figure 7 Extraction of *Ficus religiosa* leaf

Got fresh tender leaves, plucked the leaves and discard the stems and stalks and then washed them thoroughly 2-3 times with enough water.

- The rinsed leaves were then air dried for 1-2 h.
- After then, approximately 20 g of leaves were cut into fine pieces and put into a 500 ml beaker which containing 500 ml of distilled water. Kept the beaker on water bath for 1 h at 50 °C.
- After 1 h, cooled the extract and filtered through the whatman-1 filter paper.

The Herbal kajal was prepared by using following formula

2.3.3. Formulation of Herbal Kajal

Table 3 Formulation of Herbal Kajal

Sr. No.	Ingredient	Quantity
1	Ficus Religiosa	10ml
2	Almond oil	30ml
3	Cow Ghee	50ml
4	Camphor Powder	5g
5	Rose Oil	q.s



Figure 8 Preparation of Herbal Kajal

Procedure

- Took 1g plain cotton and dipped into 10 ml extract of Ficus Religiosa for 24hrs.
- After 24hrs cotton was removed out and placed into a petri-dish.
- Took 30ml almond oil and 50g of camphor powder for preparing soot.
- Took cotton piece, in this piece almond and camphor powder was taken and used as awick and was lighted in mud lamp containing cow ghee.
- Allowed the lamp to burn the copper plate, so that the carbon soot gets collected on plate.
- The carbon was scraped so that soot can be collected in dry mortar pestle.
- 10ml rose water was added drop wise in carbon soot to make the paste.
- The prepared paste was transferred to an air tight container and kept in cool and dryplace.

2.4. Evaluation of Herbal Kajal

2.4.1. Organoleptic properties evaluation

The formulations of medicated herbal kajal were evaluated for organoleptic property like color, odor, texture, and consistency.

- Color: Black
- Texture: Soft and creamy texture



Figure 9 Organoleptic test

2.4.2. pH determination

The pH of sample was recorded and evaluated. The pH of sample was measured by pHstrip .

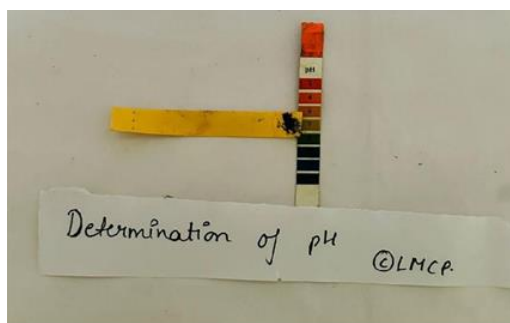


Figure 10 Determination of pH

2.4.3. Storage/Stability

The prepared Herbal Kajal was stored in a dry and cool place.

2.4.4. Irritability Test

A small amount of product was applied on the skin and kept it for few minutes and found to be non-irritated.



Kajal applied

Applied (Kajal) After 10 min

Figure 11 Irritancy test of Kajal

3. Result and Discussion

In this research, herbal Kajal was formulated by using ingredients i.e Ficus Religiosa, Almond oil, Camphor, Rose oil, Cow Ghee.

In this study kohl/kajal is prepared by using different methods to prove the antimicrobial effect of substance like ghee. There are great numbers of medicinal herbs and plants which are widely used in the treatment of diseases and also known to possess antimicrobial activity; if drug derived from natural resource, it must be effective tremendously in treatment of microbial disease. Herbal kajal revealed good antibacterial activity for eye infecting organism. Finally, concluded that the use of herbal kajal prevent the eye infection, which are safe and keep eyes healthy as well as beautiful.

3.1. Evaluation test results of herbal kajal

Table 5 Evaluation test result of Herbal Kajal

Sr. No.	Parameters	Kajal
1	Color	Black
2	Odour	Aromatic
3	Stability	Stable
4	Skin inflammation	No
5	pH	7

4. Conclusion

The conclusion of this research was concluded that the prepared herbal kajal having no or minimum adverse effects. The API used in the preparation of Herbal Kajal is Ficus Religiosa which is used as Anti-Inflammatory. All three prepared formulations showed good properties like nourishment, hydration, and protection to the delicate skin around the eyes. Overall, it offers a natural alternative to conventional kajal products, and is safer to use. In this research it was also found that it provides a guideline on the effect of ingredient towards the physical properties and consumer acceptance of the Kajal formulation. Hence, the use of natural ingredients is a step towards healthy cosmetics and can be widely utilized with great pleasure.

The prepared Herbal Kajal was evaluated by the different parameters such as stability, physical appearance, pH and skin inflammation. It is also suggested that the studied carbon based kajal prepared from cow ghee could be useful from cosmetic point, and as an antimicrobial protecting men, women and children from eye infections. Furthermore, toxicity and allergenic reactions and antibacterial activity were also performed for both the extracts and compared with that of standard that revealed neither toxicity nor allergenic reactions for all.

These studies concluded that the formulated Kajal is safe and can be used as one of the herbal cosmetic products. Kajal is regarded as essential eye product for safe, gentle, and sustainable option for enhancing the beauty of eyes.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

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