

## Formulation and evaluation of Herbal Kajal

Khushboo Rajak<sup>1</sup>, Shashikant Maurya<sup>2</sup>, Prof. (Dr) Mohd. Wasiullah<sup>3</sup>, Piyush Yadav<sup>4</sup>

1. Dept. of Pharmacy, Prasad Institute of Technology, Jaunpur (222001) U. P, India.

2. Assistant Professor, Dept. of Pharmacy, Prasad Institute of Technology, Jaunpur (222001) U. P, India.

Submitted: 05-05-2023

Accepted: 15-05-2023

### 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 Triphala, Rosa rubiginosa, Almond's powder, Coconut oil 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 by microbial activity. Prepared medicated herbal kajal are evaluated by antimicrobial activity. Evaluation of the triphala for In-vitro biochemical characterization for anti-inflammatory activity.

**Keywords:** Kajal, Kohl, Triphala, Rosa rubiginosa, Anti-inflammatory

### I. INTRODUCTION

Kajal is worn for a variety of reasons, including culture and beauty, to prevent "evil eyes." People use kajal in the eyes of children to drive away evil as a symbol of protection. In the Ayurvedic language, kajal is known as Anjanam or eye ointment. There are many types of medicinal plants used for eye diseases. The fight against eye diseases and side-effect-free chemicals remains a challenge for the healthcare system. However, Ayurvedic herbs have the power to overcome the limitations associated with traditional medicines. For this reason, great efforts have been made to identify new medicinal plants. This is because its effectiveness, side effects are relatively small, and its cost is relatively low. A popular eye product, kohl is described in almost all human cultures as

being cool and clean for the eyes and used for the prevention and treatment of eye diseases.

#### 1.1 Benefits of medicated Herbal Kajal

Medicated kajal, also known as herbal kajal, is a type of eye makeup that is made with natural ingredients and medicated herbs. There are several benefits associated with using medicated kajal, including:

##### 1. Soothing and cooling effect:

Medicinal herbal such as aloe vera, camphor, and rose water have a cooling effect on the eyes, which can help to reduce eye strain and fatigue.

##### 2. Anti- bacterial and anti- inflammatory properties:

Some herbs used in medicated kajal such as triphala have anti-inflammatory properties that can help to prevent eye infections and reduce inflammation.

##### 3. Nourishing and moisturizing:

Herbal kajal often contains ingredients like almond oil and coconut oil, which can help to nourish and moisturize the skin around the eyes.

##### 4. Safe for sensitive eyes:

Medicated kajal is often made with natural ingredients, making it a safer choice for people with sensitive eyes or those who are prone to allergies.

Overall, medicated kajal can provide a variety of benefits for the health and appearance of the eyes. However, it is important to choose a high- quality product that is made with natural and safe ingredients.

### II. MATERIAL AND METHOD –

- Triphala powder
- Almond powder
- Coconut oil

- Camphor
- Cow ghee
- Honey
- Rose wate

**1. Triphala powder –**

**Synonyms-** Vara phalatrikam, sresthatamam

**Biological name-** Emblica officinalis.

**Family-** Combretaceae.

**USE-**

- Triphala is used in kajal as anti-inflammatory agent.

**2. Almond powder-**

**Synonyms-** Chufa, rush nut, earth almond.

**Biological name-** Prunus dulcis

**Family-** Rosaceae

**UES -**

- It also removes any excess dirt and impurities from eyes.
- Improves your vision and promotes the growth of eyelashes.

**3. Coconut oil-**

**Synonyms-** Fossil oil, lubricating oil.

**Biological name-** Cocos nucifera.

**Family-** Aceraceae.

**USE-**

- Coconut oil use in kajal to nourish the eye and reduce dryness.

**4. Rose water-**

**Synonyms-** Attar of roses, lavender water.

**Biological name-** Rosa damascene mill.

**Family-** Rosaceae.

**USE-**

- Smooth eye irritation.
- Remove dust particles from eyes.
- Anti-aging properties.
- Lightens dark circles.

**5. Camphor-**

**Synonyms-** Camphora officinarum, Laurus camphora, kapur.

**Biological name-**Cinnamomum camphora.

**Family-** Cinnamomumcamphora.

**USE-**

- Camphor was extremely helpful in cooling and relaxing the eyes.

**6. Honey-**

**Synonyms-** Madhu, madh

**Biological name-**Apis mellifera.

**Family-** Apidaeae.

**USE-**

- Reduce inflammation and irritation in your eyes.
- It can also kill harmful bacteria and could be causing an eye infection.

**7. Cow ghee-**

**Synonyms-** Grease, tallow.

**USE-**

- It also cleans the salt deposits present in your eye and keeps dark circles at bay

**3. Formulation of medicated kajal-**

**Table 1. Composition of formulation of medicated kajal**

Sr. No.	Name of Ingredients	Quantity (F1)	Quantity (F2)	Quantity (F3)
1	Triphala powder	4gm	5gm	6gm
2	Coconut oil	2.5ml	2ml	3ml
3	Almond oil	6gm	4gm	4gm
4	Rose water	1.5ml	2ml	1ml

5	Cow ghee	14gm	15gm	15gm
6	Honey	2ml	2ml	1ml
7	Camphor	0.25gm	0.50gm	1gm

### III. METHODOLOGY-

Take dried powder of triphala for preparing the soot then add camphor powder.



Take muslin cloth piece, in this piece triphala powder and Almond powder was taken and used as a wick and was lighted in a mud lamp containing ghee.



Now lit the lamp and put the inverted copper plate on it.



Then scrape the black soot and collected in a clean, dry porcelain dish.  
 Preparing the rose water. Add Rose water and Coconut oil in black Soot.



Make a paste form, kajal is ready.

### IV. EVALUATION OF MEDICATED HERBAL KAJAL -

#### Physical Evaluation –

The formulations of medicated herbal kajal were evaluated for physical parameter like colour, odour, texture and consistency.

#### pH determination –

The pH of the prepared formulation is measured by a pH meter. 1gm of kajal sample was measured and dispersed in 25 ml of DMSO (Dimethyl Sulfoxide) & stored for 2 hours. The pH value of the kajal composition was recorded three times and average taken.

#### Antimicrobial Activity –

Antimicrobial activity of prepared formulation kajal was performed using the agar well diffusion techniques. For 48 hr. at 37°C sterile agar was incubated with the bacterial culture (Staphylococcus aureus) for. The bores was made by using the sterile bores diameter 8mm. and the bores was loaded with the diluted kajal solution prepared using the DMSO. The plate was incubated

for 48 hr. at 37°C. Zone of inhibition was measured.

#### Spreadability –

To obtain a spreadability of kajal formulations take an excessive amount of kajal sample was taken in glass slides and the weight was placed on the slides for 5 minutes to press the kajal samples to the same thickness. Weight is added on pan. The time required for the split of two slides was taken as a measure of the spread.

Calculated using the formula:  $S = M \cdot L / t$

Where, M =the weight (g) tied to the upper glass slide L = the length (cm) moved on the slide T = time to separate the slide.

#### Stability Studies-

Physical parameters such as colour, odour, texture and consistency were determined at room temperature and 40°C

#### In-Vitro Study

#### Inhibition of protein denaturation assay for Anti-inflammatory Activity:

In this activity either egg albumin or bovine serum albumin are used for protein

denaturation of assay. Control solution is prepared: 0.45 ml egg albumin, 1.4 ml phosphate buffer whose pH is 6.4. The standard solution is prepared by using the marketed Diclofenac sodium gel various concentration. 0.45 ml fresh egg albumin and 10 ml phosphate buffer saline whose pH is 6.4. A reaction mixture consists of various concentration of triphala of 100- 400µg/ml, take 10 ml of each concentration. Take 0.45 ml egg albumin. 1.4 ml phosphate buffer saline, the mixtures is incubated at 37 °C for 15 min and then heated at 70°C for 5 min. After the cooling reaction mixture, the absorbance is measured at 660nm. Using the following formula percent inhibition for protein denaturation is calculated:

$$\% \text{ Inhibition of denaturation} = (1 - D/C) \times 100$$

Where, D is the absorbance of test sample C is the absorbance of control

#### Evaluation of Base-

The evaluation of base that is ghee was evaluated by Acid value and Saponification value.

#### Acid value-

The acid value is to neutralize the free acid in 1 g of substance the number of mg of potassium hydroxide is required. Determined by the following method Weigh accurately about 10 g of the substance in the 250 ml of conical flask and add 50 ml of alcohol and add 1 ml of phenolphthalein. Warm up on water bath, if necessary, until substance was dissolved. Titrate with 0.1 N potassium hydroxide. Shake constantly shake until pink colour is obtained. Note the number of ml required and calculate the acid value by using the formula:

$$\text{Acid value} = a \times 0.00561 \times 1000/W$$

Where, a = number of ml of 0.1 potassium hydroxide required

W = weight of g of substance taken.

#### Saponification value-

The Saponification value is the number of mg of potassium hydroxide required to neutralized fatty acid determined by following method. Add 40 gm of potassium hydroxide in 20 ml water and add sufficient alcohol to make volume 1000ml. Allow it overnight. Weigh 4g of ghee in 250 ml of conical flask add alcoholic solution of potassium hydroxide, attach to the reflux condenser set another reflux condenser as blank with other reagents. For hr boil on water bath. Add 1ml of phenolphthalein. Titrate with 0.5 N hydroxide acid.

Note the number of ml required and calculate the Saponification value by using the formula

$$\text{Saponification value} = (b-a) \times 28.05/W$$

Where, W = weight in g of substance taken

a = sample solution reading.

b = blank solution reading.

#### V. CONCLUSION-

Medicated herbal kajal using herbal ingredient was prepared and evaluated. Different parameter like Physical evaluation pH, Consistency, texture, odour, stability study, Spreadability is use for evaluation of medicated herbal kajal and which shows the significant results. In the batch B more significant results are obtained than other batches. The Prepared formulations show the antimicrobial activity against the Staphylococcus aureus. This study shows the safety of the product. The In- Vitro study of the triphala as the Anti-inflammatory was evaluated and which shows the anti-inflammatory activity. As the contain of the Triphala increases the greater the anti-inflammatory activity of kajal. This study shows that the prepared herbal medicinal kajal is safe and use as the cosmeceutical.

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