



CAFFEINE FACE MASK: A SKIN CARE COSMETIC

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ABSTRACT:

Skin health is crucial for both personal health and cosmetic attractiveness. By moisturising the skin and eliminating impurities and sebum, face cosmetics support healthy skin. As a result, people go through a psychological reaction. Face skin is protected by cream, lotion, face masks, and other cosmetics designed especially for the face. Healthy skin is the result of using the right face masks for your facial skin type. Sensitive skin benefits from the cooling and soothing properties of hydrogel masks. It helps protect cells from UV radiation and lessens the effects of photoaging. The hydrogel face mask's physical stability was evaluated using measurements of viscosity, pH, spreadability, hydrogel mask acidity, and drying time. The results showed that the colour and smell of the hydrogel face mask remained constant during a 12-week period. The hydrogel face mask with caffeine is stable and has good physical properties, making it appropriate for use as a Neutra cosmeceutical product, according to the study. The hydrogel mask used in this study is particularly successful at promoting youthful-looking skin and reducing the signs of ageing. It also encourages an even skin tone and reduces skin pigmentation.

Keywords: -Skin, hydrogel mask, aging, face mask, caffeine

1.INTRODUCTION: -

The Greek word "kosmeticos," which means to "adorn," is where the term "cosmetics" comes from. External preparations applied to the skin are known as cosmetics. External body components, such as the skin, hair, nails, and lips, to enhance the appearance of the body and conceal unpleasant body smell. It protects skin and maintains its health. Skin Cosmetics, Hair Cosmetics, Nail Cosmetics, and Cosmetics for Hygiene Purpose are the four main categories of cosmetics.^[1]

A new category of skincare and wellness products known as "nutracosmetics" combines the advantages of natural components with those of synthetic ones. Herbal products have a low toxicity profile, are gentle, and are biodegradable. Different skin care products with herbal compounds have demonstrated to have certain advantageous features, including sunscreen, antiaging, moisturising, antioxidant, anti-cellulite, and antibacterial effects.^[2]

A creamy or thick paste-based mask used to clean or smooth the skin is called a facial mask. Fruit extracts, vitamins, and minerals are frequently used in facial masks. Both men and women can wear facial masks. Masks have not been proven to be any more successful than a typical moisturising lotion at achieving these goals than they are at tightening pores, improving skin clarity, and reducing wrinkles on the face.^[3] The kind of skin should be considered while choosing a facial mask. Oily skin benefits from clay and mud masks, whereas dry skin types benefit most from cream-based masks. For maximum effects, masks should only be applied to freshly washed skin. Applying firming masks near the eyes is not advised since they may irritate.^[4]

In the methylxanthine class of stimulants, caffeine is a central nervous system (CNS) stimulant.^[5] As a cognitive enhancer that improves alertness and attentional function, it is primarily used recreationally.^[6] Caffeine is an antioxidant that increases collagen and slows down cellular ageing. Additionally, it is a natural exfoliator that eliminates tan and dead skin, leaving the skin radiant and healthy.^[7] Additionally, caffeine raises levels of cyclic AMP by non-selectively inhibiting phosphodiesterase.^[8] The coffee bean, the seed of the *Coffea* plant, is the most popular source of caffeine. Caffeine-containing beverages can help people stay awake and boost their cognitive function. By steeping the plant, caffeine is obtained for use in these beverages.^[9]

1.1 Benefits of face pack: -

1. The face pack is providing the Nourishment to the skin.
2. It assists in removing dead skin cells from facial skin.
3. On the skin, these have a calming and relaxing effect.
4. To glow, enhance skin texture, and improve complexion, apply the face pack frequently.
5. The usage of a face pack helps lessen the negative effects of pollutants and hard weather.
6. They aid in preventing early ageing of the skin.
7. They shield the skin from developing fine lines, wrinkles, and sagging.^[10]

2. MATERIALS AND METHODS: -

2.1 MATERIALS: -

Table No 1: List of Ingredients

Sr No.	Ingredients	Role
1.	Caffeine	Stimulant, Antioxidant
2.	Flaxseed Gel	Moisturiser
3.	Glycerine	Humectant
4.	Sodium Alginate	Thickening Agent, Stabilizing Agent
5.	Polyethylene Glycol (PEG)	Emulsifier
6.	Aloe Vera	Antiaging, Anti-inflammatory
7.	Distilled Water	Vehicle
8.	Citrus Oil	Flavour
9.	Methyl Paraben	Preservative

2.2 METHODS: -

Extraction of caffeine from tea leaves: -

Procedure: -

- About 40g of the tea leaves after first, second and third usage was placed inside a beaker and 6 gm carbonate was added to it along with 300 ml of distilled water.
- The mixture was allowed to boil on a hot plate for about 15 minutes. The mixture was then filtered using a funnel and filter paper. The filtrate was cooled to about 15-20°C and transferred to a separating funnel.
- About 15ml of dichloromethane was added to the filtrate and the funnel was stoppered. The contents were mixed vigorously and allowed to stand for 15 minutes.
- The mixture separated into two layers. The lower layer containing dichloromethane was drained and collected in a conical flask. Another 15ml of dichloromethane was added to the funnel and the process was repeated.
- Anhydrous magnesium sulphate was added to the conical flask containing dichloromethane and allowed to stand for 10 minutes.
- This mixture was then filtered using a funnel and filter paper. The weight of the filtrate was measured as the fresh weight. The dichloromethane was evaporated by placing the beaker on a water bath.
- After evaporation, light green coloured caffeine powder was visible. The weight of caffeine powder was considered as the final weight. On subtracting the initial weight from the final weight, the amount of caffeine extracted was found.^[11]



Fig No.1 Tea Powder

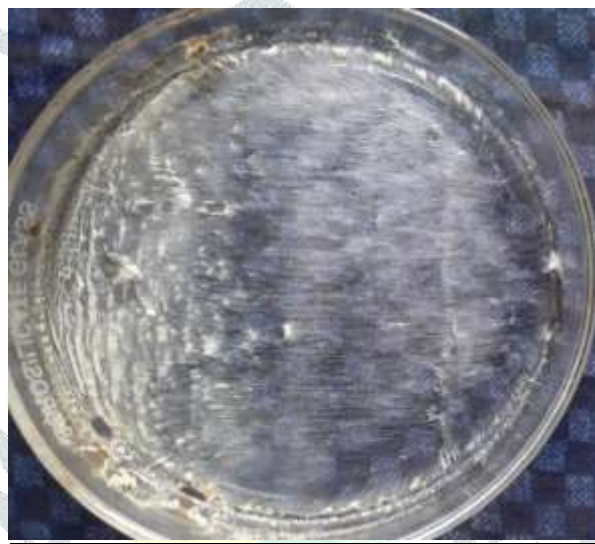


Fig No.2 Crystal Shaped Caffeine

Preparation of flaxseed gel: -

120 ml of water was added to 30 g of flaxseed that had been weighed into a 250 ml beaker. Once a gel of the proper consistency had formed, it was quickly strained after being boiled in a water bath.^[12]



Fig. No. 3 Preparation of flaxseed gel

3. FORMULATION:**Table No 2: Caffeine Face Mask Formulation**

Sr.no.	Ingredients	Quantity
1	Caffeine	0.45 g
2	Flaxseed gel	16 g
3	Glycerine	2 g
4	Sodium Alginate	1 g
5	Polyethylene Glycol (PEG)	0.15 g
6	Aloe Vera	5 g
7	Distilled Water	Q.S.
8	Citrous Oil	0.1 g
9	Methyl Paraben	0.8 g

3.1 METHOD OF PREPARATION: -

In distilled water, sodium alginate was dissolved and homogenised for 10 minutes. Glycerine was combined with the produced flaxseed gel to create the combination. To dissolve, 0.45g of caffeine was heated in distilled water. Additionally, methyl paraben and propyl paraben were added before boiling the caffeine solution. A drop of propylene glycol was also added after the previous mix was introduced to the flaxseed gel and glycerine mixture. The alginate gel was then given the mixture, which was then homogenised till a semisolid gel was created.

**Fig No. 04: Caffeine Face Mask****4. EVALUATION PARAMATERS:****a. Organoleptic Test:**

The colour and smell of the produced gel were assessed.

b. Hydrogel mask acidity:

The mask was dipped in 10 ml of distilled water and let to stand at room temperature for 2 hours. The hydrogel mask's acidity was then assessed using a pH metre. The mean results were utilised after three rounds of measurements.

c. Viscosity:

The viscosity of the sample gel was determined using Brookfield viscometer (DV-E model) and the readings were taken.

d. Spreadability:

The sample was placed on a 20 x 20 cm glass that was placed on a graph paper, and after being left for 60 seconds, the diameter of the created shape was measured. The sample was then sealed with mica plastic, loaded to a strength of 125 g, and left for 60 seconds. The diameter of the produced shape was then determined.

e. pH:

The sample was dissolved in 100 ml of distilled water at a concentration of 1% by weight of the gel, and the pH was measured using a pH meter.

f. Drying time:

The drying time test was carried out by watching how long it took the gel to dry after it was applied to the face's skin until a dry layer had developed.

5.RESULT: -**Table No 3: Evaluation of Caffeine Face Mask**

Sr.no.	Evaluation	F4
1.	Colour	Brownish Orange
2.	Odour	Aromatic
3.	Mask acidity	5.9 ± 0.1
4.	Viscosity	2545±3.6
5.	Spreadability	21.3±0.28
6.	pH	6.3± 0.06
7.	Drying Time	14.5± 0.5

6. CONCLUSION:

The hydrogel mask with caffeine had good physical properties and was stable. The same amount of caffeine was used in all four formulations, but different amounts of sodium alginate and flaxseed gel were used. Based on the evaluation tests, the face mask formulation F4 was selected as the best formulation. The viscosity of F4 was 2545 3.6 cps, and its spreadability was 21.3 0.28. Because F4 included the right proportions of sodium alginate and flaxseed gel, it distributed more easily than other formulations. F5 has a drying time of 14,5 0.5 minutes and a pH value of 6.3 0.06. Caffeine enhances skin luminosity, encourages youthful-looking skin, and lessens the indications of ageing. The energising caffeine face mask for the skin is suitable for use as a cosmeceutical product.

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