



FORMULATION AND EVALUATION OF HERBAL EYE MASCARA

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Vadodara – 391760, Gujarat, India***Corresponding Author: Dr. Tirth Thaker: E Mail: tirth6582@gmail.com**Received 24th Nov. 2022; Revised 26th Dec. 2022; Accepted 5th May 2023; Available online 1st Jan. 2024<https://doi.org/10.31032/IJBPAS/2024/13.1.7746>**ABSTRACT**

A cosmetic product called mascara is frequently used to lengthen lashes. It can lengthen, describe, thicken or darken eyelashes. Aloe was used as a natural polymer in the current study to develop herbal mascara. The natural source was used because the available polymer synthesis had undesirable side effects. The emulsion process was used to prepare and test several batches of herbal mascara. It might make the eyelashes darker, thicker, longer or more defined. Cocoa butter was used as a natural polymer in the current study to create herbal mascara. Cocoa butter was used because the synthetic polymer's side effects prevented their use. The emulsion method was used to prepare various batches of herbal mascaras, which were then tested for skin irritability and patch test results.

Keywords: Mascara, Formulation, Composition, Testing**INTRODUCTION**

Modern mascara comes in a variety of formulae, usually in one of three forms: liquid, cake or cream. However, the majority of them have the same fundamental ingredients: pigments, oils, waxes and preservatives. Enhance and draw attention to the natural attractiveness of eyes by filling, extending or coloring

them [1]. Numerous options exist for using cosmetics to improve a woman's facial appearance [2]. They can highlight youthful, appealing appearances and emphasize femininity and sexual attractiveness [3, 4]. By using mascara, you can draw attention to your eyes in a number of ways. To make your eyes stand out from others, mascara is essential.

Mascara is made out of a mixture of waxes, emulsifiers, texturizers, pigments and non-aqueous and aqueous solvents. It was once used in the shape of cake but is currently utilized in liquid form [5].

A common cosmetic, mascara is connected to eye pathology. It has the power to provide length, thickness and a darker shade to your eyelash extensions that you may like. With these mascara techniques, you can give your eyes depth and make them appear more open even if you don't use a lot of eyeshadow [6]. A build-up of mascara on our patient's eyelids took on a tumor-like elevation, leading to a referral for possible conjunctival melanoma [7]. The conjunctiva and nearby structures may become contaminated with mascara, a popular, readily available substance used to lengthen and darken the eyelashes. There are three types of mascara – cake, cream & liquid. Cake & cream mascara may cause irritation such as tears and pain, so liquid mascara is compatible and easily removable [8].

MATERIALS AND METHODS:

Following materials coagulated for the formulation of Mascara.

Charcoal powder: It is also known as activated carbon and it is used to treat oral poisonings. It should be used quickly in order to be effective. It's also used to prepare eye cosmetics.

Glycerin: It works wonders to soothe angry, irritated or stressed skin. It has a high cooling

impact on the skin, which may aid relieve itching [9]. Glycerol also known as glycerin, is a type of organic alcohol that is completely miscible in water so, it can be easily removable in washing.

Aloe vera gel: Aloe vera is prepared from the fleshy, fresh, pointed green leaves of the aloe plant, which also has laxative properties and is used in natural remedies for cosmetic preparation [10, 11]. The ability of the leaves to store water causes the leaves to thicken in order to obtain the "gel" for the preparation of aloe vera products.

Rose water: It is made by steam distilling rose petals. It was originated in what is now Iran [12]. It has traditionally been used in cosmetics as well as food and beverage products.

Coconut oil: It's an oil extracted from the kernel of coconut which is harvested or picked from the coconut palm [13]. They have several applications in the world of cosmetics due to high saturated fat content and moisturizing properties.

Vitamin E tablet: Vitamin E is composed of eight fat-soluble compounds, four of which are tocopherols and four of which are tocotrienols [14]. Vitamin E is a fat-soluble antioxidant that may assist in the protection of cell membranes from reactive oxygen species.

Cocoa butter: Cocoa butter, also known as Theobroma oil, is a pale-yellow, edible fat extracted from the cocoa bean. It is used to make chocolate, as well as some ointments, toiletries and pharmaceuticals [15].

Olive oil: Eyelashes are a type of hair that grows out of your eyelids rather than your scalp. They

resemble brow hair the most [16]. Olive oil gives nourishment to eyelashes.

Bees wax: The honey bee species Apes produce beeswax, a type of natural wax. In the abdominal segments of worker bees, eight wax-producing glands shape the wax into scales, which they then discard in or near the hive [17].

FORMULATION OF HERBAL

MASCARA: Total three efforts formulated after extensive research and testing using various amounts of ingredients to frame mascara and following process emerged as successful formulation (formulation 3 – F3). 20 ml of Aloe vera gel and 0.2 ml coconut oil were combined. The mixture was added to

specified amount of 3 of ml glycerin and stir well. 8 mL rose Water, 5 gm charcoal powder, 2 gm cocoa butter and 3 gm beeswax charged to above mixture. Total content homogenized by double boiling method to get smooth slurry. Obtained slurry cooled at 25-35 °C room temperature and 0.2ml of vitamin E and 0.1ml of olive oil added to retrieve nutrient values. Heat the mixed ingredients for 15 min at 45- 50°C. Mixture kept allow to cool at room temperature to get thickness.

Wt. of Mascara = 40 gm

Three formulations F1, F2, and F3 were created

Table 1: Formulation of herbal mascara

Ingredients	F1	F2	F3
Charcoal powder	1 gm	1 gm	5 gm
Glycerin	-	1 ml	3 ml
Coconut oil	0.1 gm	-	0.2 gm
Coco butter	0.70 gm	0.50 gm	2 gm
Rose water	1 ml	5 ml	8 ml
Aloe vera gel	2 ml	4 ml	20 ml
Vitamin E tablet	-	1	3
Olive oil	-	-	0.1 gm
Bees wax	0.2 gm	0.5 gm	3 gm
Results	Dose not dry	Dose not dry	Have all characters

Assessment of formulated mascara required for the assurance of biological safety.

Evaluation of eye preparation: At various points during the production of eye preparation, tests for consistency and purity are performed to make sure the right ingredients and dosage are used. These researches tested for the presence of microorganisms and allergens.

Patch testing: Patch testing for irritant and allergic dermatitis is used to determine whether

the substance in contact with the skin is causing skin inflammation (dermatitis).

Open or closed patch testing: The distinction between irritant and eye contact dermatitis must be made clear in order to perform a near patch examination, just as with shadows, to determine whether the makeup is the cause of the dermatitis.

Irritant contact Dermatitis: If given in a high enough concentration for long enough, influences in almost everyone who receives

it. An allergic reaction that isn't linked to the immune system and is brought on by an irritant's close contact with the skin.

Allergic contact dermatitis: Allergies, specifically to the person and to the substance or group of substances known as allergens. Allergy is an oversensitivity (hypersensitivity) to a substance that frequently compromises the immune system. If contact with the substance is avoided, any skin areas exposed to allergens may develop a rash.

PH test: The pH of mascara was measured in an effort to rule out any potentially harmful effects. An acidic or alkaline pH can irritate

the skin, so the touchscreen's pH was adjusted to be as neutral as possible. For the pH test, 1 g of the substance was dissolved in 100 ml of water with a pH of 14. Using a pH metre, the pH was evaluated. The pH of the tested scrub ranges from 6.86.

Moisture content: Formulated mascara kept for 90 days in both refrigeration (0-5 °C) and the ambient temperature (25-35 °C) for accelerated stability testing. After 30 days, its pH, Evaluation of eye preparation, Patch testing, Open or closed patch testing, Irritant contact Dermatitis, Moisture content, Allergic contact dermatitis were assessed and found consistency in results.

Table 2: Moisture content (%) study of formulated mascara – F3

Temperature	Moisture Content (%)			
	After 1 st Month	After 2 nd Month	After 3 rd Month	After 4 th Month
0-5°C	5.12	5.10	5.15	5.11
25-35°C	5.25	5.22	5.21	5.24

Method: The eye cream is placed at the corner of the eye for five days straight to check, and then the skin is checked for contact dermatitis due to an allergic reaction or other irritant. Allergens and a non-allergic substance are combined (based). Adhesive tape is used to hold them in place as they are applied in close proximity to the skin. It is marked as the test

side. The patch is left in place for 48 hours, during which time it is forbidden to wash the area or engage in strenuous activity in case the adhesive tapes come off and the procedure needs to be repeated. Repetitions done to check compatibility of mascara with human eye and found compatible.

Table 3: Costing of Muscara

Sr. no	Ingredients	Amount	Price/100gm	Quantity	price
1.	Charcoal powder	100 gm	123rs	5 gm	6.15rs
2.	Glycerin	100 ml	100rs	3 ml	3rs
3.	Coconut oil	100 ml	42rs	0.2 gm	0.084rs
4.	Coco butter	100 gm	225rs	2 gm	4.5rs
5.	Rose water	100 ml	40rs	8 ml	3.2rs
6.	Aloe vera gel	100 gm	100rs	20 ml	20rs

7.	Vitamin E tablet	10 capsules	33rs	3	9.9rs
8.	Olive oil	100 ml	272rs	0.1	0.29rs
9.	Bees wax	100 gm	150rs	3 gm	4.5rs
Cost of Formulated Mascara					51.62 Rs. (INR)

RESULTS

A trial run of the herbal mascara was conducted. The laboratory-produced herbal mascara passed all required characterization tests when it was evaluated for traits like pH, Evaluation of eye preparation, Patch testing, Open or closed patch testing, Irritant contact Dermatitis, Moisture content, Allergic contact dermatitis and irritation. The end result is a product that can be used as a potent mascara to get healthy, radiant skin. It included charcoal powdered, rose water, glycerin, olive oil, coconut oil, cocoa butter, vitamin e tablet and aloe vera gel, all of which have exfoliating properties and can be used to darken, thicken, lengthen and define the eyelashes.

CONCLUSION

In the context of the current investigation, it was discovered that this formulation is suitable for use by thorough clinical trials in order to have access to the formulation for improved efficacy. We tested whether wearing eyeliner, mascara and eye shadow made eyes appear bigger than they actually are. We used an experimental paradigm that has been used in research on visual illusions to achieve this. Measurements showed that with eyeliner, mascara, and/or eye shadow, perceived eye size was overestimated by about 6% (13% in area) and by about 5%,

respectively. We came to the conclusion that eye makeup causes eye size illusions because of perceptual assimilation and that our experimental paradigm can measure these perceptual illusions quantitatively. Formulated mascara has a great commercial scope as it has suitable pH and constant moisture content.

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