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Formulation and Evaluation of Polyherbal Gel Face Scrub

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ABSTRACT

The main objective of the present study was to prepare a polyherbal scrub incorporated into the gel. The use of natural ingredients to fight against acne, wrinkle and also to control the secretion of oil, improves skin health, staying hydrated, lightens the skin is known as natural or herbal cosmetics. Herbal cosmetics are also known as Ayurvedic cosmetics have the same estimable assets in the modern era as well. Herbal cosmetics are the safest product to use routine with no side effects and cosmeceuticals are the product that influences the biological function of the skin. In this preparation Neem, Papaya, Orange, Aloevera, Lemon, Tulsi is used as active ingredients and incorporated into the gel which is prepared with carbopol of different grades[1]. Other ingredients like propylene glycol, triethanolamine, methylparaben, cetyl alcohol, glyceryl monostearate were added along with sodium lauryl sulfate into the gel. The prepared gel was evaluated for various parameters such as appearance, pH, viscosity, spreadability, washability, irritability and found to be satisfied with all required characterizations. Thus, the developed formulation can be used as an effective scrub for using it to bear healthy and glowing skin.

INTRODUCTION:

Nowadays makeup plays an important role for both men and women[2]. That's right, even men have become more beauty conscious and are concerned about their looks. Cosmetics can be produced in organic and hypoallergenic form to meet the demands of users. Makeup is used as a beauty aid to help build up the self-esteem and confidence of an individual. The importance of cosmetics has increased as many people want to stay young and attractive. Cosmetics are readily available today in the form of creams, lipstick perfumes, eye shadows, nail polishes, hair sprays, etc. Other cosmetics like face powder give a glow to the skin after applying the base cream. Then we have lipsticks, which are applied by many women of all ages. They are made from wax and cocoa butter in the desired amount[3]. Cosmetics like creams, gels, and colognes are used daily by both women and men. Creams act as a cleanser for the face in many circumstances. More recently anti-aging creams have been manufactured which can retain younger-looking skin for many years. The best cleansing agents are cleansing cream, soap, and water. Cosmetic creams serve as a skin food for hard, dry, and chapped skin. It mainly lubricates, softens, and removes unwanted dirt from the skin. Some popular fat creams that are used include Vaseline and Lanolin. Dry creams are used in the manufacture of soap and gelatin which is used as a base for the skin[4].

'Cosmeceuticals' is the fastest-growing segment of the beauty industry[5]. Cosmeceuticals are cosmetic-pharmaceutical products intended to improve the health and beauty of the skin by providing a specific result, ranging from acne-control and anti-wrinkle effects to sun protection.

A facial scrub is usually a cream-based product that contains little exfoliation pieces that when massaged across the skin help smooth the skin by physically lifting dry, dead skin cells. Facial scrubs also work very well to keep the skin on the neck smooth to make exfoliation easier. When exfoliating, make sure to look upwards so the skin on the neck is nice and taut, which will make for easier use. Facial scrub is an excellent deep cleansing, exfoliating application for all skin types and is especially beneficial for oily skin.

Use of a Facial Scrub:

Using a facial scrub can make your skin feel beautiful, youthful, soft, and like it's glowing. Unlike a regular soap or cleanser, a facial scrub uses small particles, beads, or chemicals to get rid of the old skin cells and make way for new ones in a process known as exfoliation[6].

The process is simple: to use a facial scrub, choose a natural or chemical scrub suited for your skin type, massage the scrub into damp skin for one minute, then rinse and moisturize your skin. Repeat once or twice a week. With all of its benefits, you should consider making a facial scrub a part of your weekly skincare routine.

Preparing to Use a Facial Scrub:

- Decide whether or not you should use a facial scrub**.** Not everyone should exfoliate their skin using a facial scrub[7]. For example, persons with rosacea, warts, inflammatory acne, or herpes might find their conditions exacerbated by exfoliating scrubs.

- If you have a history of skin problems, you should consult your dermatologist to determine what kind of skincare regime is most appropriate.

- Wash your face to ensure that no products or cosmetics are remaining on your skin.

- Allow your face to air-dry and wait at least one hour.

- Dab a tissue to your forehead, nose, chin, cheeks, and temples[8].

PLANT PROFILE

ALOEVERA:

Aloevera is a succulent plant species of the genus *Aloe*. Having the same 500 species, Aloe is widely distributed and is considered an invasive species in many world regions[9]. An evergreen perennial, it originates from the Arabian Peninsula but grows wild in tropical, semi-tropical, and arid climates around the world. It is cultivated for commercial products, mainly as a topical treatment used over centuries. The species is attractive for decorative purposes and succeeds indoors as a potted plant. It is used in many consumer products, including beverages, skin lotion, cosmetics, ointments, or in the form of gel for minor burns and sunburns. There is little clinical evidence for the effectiveness or safety of Aloevera extract as a cosmetic or topical drug[10]. The name derives from Latin as *Aloe* and *Vera.*

Figure No.1:Aloe vera

ORANGE PEEL:

An Orange is a type of citrus fruit which often eaten. Orange is a very good source of vitamins, especially vitamins orange juice is an important part of many people's breakfast. The sweet orange", which is the kind that is most often eaten today, grew first in Asia but now grows, in many parts of the world .an orange has a tough shiny skin. Inside the fruit, is divided into segments, which have thin tough skin that hold together many little sections with juice inside.

Figure No.2:Orange peel:

COFFEE BEANS

A Coffee bean is a seed of the *Coffea* plant and the source for coffee. It is the pip inside the red or purple fruit often referred to as a cherry. Just like ordinary cherries, the coffee fruit is also a so-called stone fruit. Even though the coffee beans are not technically beans, they are referred to as such because they resembled true beans. The fruits; cherries or berries, most commonly contain two stones with their flat sides together. A small percentage of cherries contain a single seed, instead of the usual two. This is called a "Peaberry". The peaberry occurs only between 10% and 15% of the time, and it is a fairly common (yet scientifically unproven) belief that they have more flavor than normal coffee beans.

Figure No.3: Coffee beans:

NEEM

Azadirachta indica, commonly known as neem, neem tree or Indian lilac, and in Nigeria called dogoyaro or dogonyaro, is a tree in the mahogany family *Meliaceae*. It is one of two species in the genus *Azadirachta* and is native to the Indian subcontinent and most of the countries in Africa. It is typically grown in tropical and semi-tropical regions. Neem trees also grow on islands in southern Iran. Its fruits and seeds are the sources of neem oil.

Figure No.4:Neem Leaf:

TULSI

Ocimumtenuiflorum, commonly known as holy basil or tulsi, is an aromatic perennial plant in the family Lamiaceae. It is native to the Indian subcontinent and widespread as a cultivated plant throughout the Southern Asian tropics.

Tulsi is cultivated for religious and traditional medicine purposes, and also for its essential oil. It is widely used as an herbal tea, commonly used in Ayurveda, and has a place within the Vaishnava tradition of Hinduism, in which devotees perform worship involving holy basil plants or leaves.

Figure No.5:Tulasi leaf:

LEMON

The lemon was introduced into Spain and North Africa sometime between the years 1000 and 1200 CE. It was further distributed through Europe by the Crusaders, who found it growing in Palestine. In 1494 the fruit was being cultivated in the Azores and shipped largely to England. The lemon was thought by 18th-century Swedish botanist Carolus Linnaeus to be a variety of citron (Citrus medica), though it is now known to be a separate hybrid species.

Figure No.6:Lemon:

MATERIALS AND METHODS:

Preparation of scrub:

Carbapol was weighed and dissolved in water. To this add methylparaben and propylene glycol and stir continuously to form a uniform gel. Add sodium lauryl sulfate to the gel by dissolving separately with water. Then cetyl alcohol was weighed and dissolved in water by placing on a water bath and added to the gel. To this gel add all the active ingredients including flavoring agents to get a desirable flavor and stir continuously to form uniform gel face scrub.

Figure no .7: Formulation Herbal Gel Scrub

Table No.1.Formulation of scrub:

Sr.No	Ingredients	Category	F1	F2	F3	F4	F5
1.	**Aloevera**	Anti inflammatory	8.0ml	10ml	1.2ml	14ml	16ml
2.	**Neem**	Anti oxidant	1.35gr	1.5gr	1.7gr	1.8gr	1.9gr
3.	**Coffee powder**	Exfoliant	2.5gr	2.8gr	2.9gr	3.0gr	3.1gr
4.	**Tulsi**	Anti aging	2.0gr	2.3gr	2.5gr	2.7gr	2.8gr
5.	**Orange peel powder**	Anti-dehydrant	0.9gr	0.92gr	0.95gr	0.98gr	0.99gr
6.	**Lemon**	Anti microbial	2.0ml	2.2ml	2.3ml	2.4ml	2.5ml
7.	**Gram flour**	Abbressive agent	0.5gr	0.8gr	0.9gr	0.9gr	0.9gr
8.	**Carbopol**	Gelling agent	5.0gr	5.6gr	6.7gr	6.9gr	6.95gr
9.	**Propylene glycol**	Moisturizer	2.0ml	2.3ml	2.4ml	2.5ml	2.6ml
10.	**Methyl paraben**	Preservative	0.5gr	0.7gr	0.8gr	0.9gr	0.9gr
11.	**Cetyl alcohol**	Thickening agent	0.1gr	0.1gr	0.1gr	0.1gr	0.1gr
12.	**Sodium lauryl sulphate**	Foaming agent	0.3gr	0.6gr	0.8gr	0.9gr	0.9gr
13.	**Vanilla essence**	Flavoringagent	-	Q.S	-	-	-
14.	**Rose essence**	Flavoringagent	-	-	-	-	Q.S
15.	**Pineapple essence**	Flavouringagent	-	-	-	Q.S	-
16.	**Grape essence**	Flavouringagent	-	-	Q.S	-	-
17.	**Water**	Vehicle	Q.S	Q.S	Q.S	Q.S	Q.S

Evaluation of Scrub:

The prepared scrub was evaluated for appearance, pH, consistency, spreadability, extrudability, viscosity, irritability, washability, grittiness, foamability, etc.

Appearance:

The prepared scrub gel was evaluated for its odour and colour. The colour was found to be brown in colour and odour was found to be characteristic.

pH:

An amount of 20 mg of the formulation was taken in a beaker and was subjected to the pH measurement using a digital pH meter within 24 hrs of manufacture.

Consistency:

The consistency was checked by applying on skin.

Spreadability:

A small amount of the gel was placed on the glass slide and another glass slide was placed on the gel. A wooden weight was placed on it.The time required for the gel to spread and the area was measured. The amount and the area of gel on the glass slide represent the efficiency of spreadability.

$$\text{Spreadability} = m \times l/t$$

Where, m=Weight tied to upper slide,

l=Length of the glass slide (6 cm),

t=Time in seconds.

Extrudability:

Small amount of gel was taken into a collapsible ointment tube. One end closed and the other end kept open. Slight pressure was applied on the closed side. The time taken to extrude and the amount of gel extruded were noted.

Viscosity:

Viscosities of formulated gels were determined using Brookfield viscometer spindle # 7 at 50 rpm and 25°C. The corresponding dial reading on the viscometer was noted. Then the spindle was lowered successively. The dial reading was multiplied by the factor mentioned in the catalog.

Irritability:

A small amount of the gel was applied to the skin kept for a few minutes and found to be non-irritant.

Washability:

Little quantity of gel was applied over the skin and was washed with water. It was easily washable.

Grittiness:

The gel was found to have a few gritty particles.

RESULTS:

Table No.2.Evaluation of polyherbal gel scrub:

Sl.No.	PARAMETERS	OBSERVATION
01	Colour	Dark Green
02	order	Characteristic
03	Appearance	Good
04	pH of the Scrub	6.9
05	Consistency	Good
06	Spread ability	6.72g.cm/sec
07	Extrudability	Easily extruded
08	Viscosity	1.4580poise
09	Irritability	Non irritant
10	Washability	Easily washable
11	Grittiness	Small gritty particles
12	Foamability	Foam volume 100ml at 5 min

SUMMARY AND CONCLUSION:

The polyherbal face scrub of crude drugs with the best properties and having nutritional value was to be prepared by a simple method and less equipment is required. Further studies are required for this polyherbal face scrub. It was found that this type of polyherbal face scrub was not formulated earlier by using natural ingredients. The prepared scrub gel was evaluated using various parameters and was found to be satisfactoryfor the application on the skin to make it healthy and glowing without any side effects.

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