

Development and Assessment of A Poly Herbal Exfoliating Gel Utilizing Ocimum Sanctum Seeds in Cosmetic Formulation

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Abstract:

This study aimed to develop and evaluate herbal scrub gels using active scrub ingredients Tulsi (ocimum sanctum) seeds as abrasive property other extracts from aloe vera, turmeric (*Curcuma longa*), neem (*Azadirachta indica*).

Method: Using the plants specified, a herbal scrub gel formulation for a face scrub was developed. Carbopol-940 was selected as the gelling agent, and various excipients that either directly or indirectly act as exfoliates were used in the study. After being assessed for a number of characteristics, including appearance, pH, viscosity, spreadability, washability, and irritability, the manufactured gel was determined to meet all necessary requirements. In order to maintain healthy and radiant skin, the created solution can be used as an efficient scrub gel.

Results: The herbal facial scrub gel has an physical characteristics to make a standard quality of the product. These scrub formulations effectively exfoliate the skin

Keywords: Ocimum sanctum (Basil seeds), Neem bark, Turmeric rhizomes, Aloe vera Facial scrub gel

1. Introduction:

In the field of cosmetology, exfoliation refers to the process of eliminating outer skin cells and accumulated dirt from the skin's surface. The word is derived from the Latin term *exfoliare*, which means 'to shed leaves' (Merriam-webster.com et al december 2014). This is a common procedure in the cosmetics field, valued for its ability to encourage skin renewal and deliver thorough cleansing of the skin barrier. Employed in facials, this technique can be performed using mechanical or chemical methods, including microderm abrasion or chemical peels. Exfoliating products are marketed as solutions that improve beauty and foster a vibrant and youthful look. (Alex Muniz et al. Dec. 2014) Removing dead skin cells and blemishes at the top layer of the skin via exfoliation aids in improving keratin formation. Maintaining youthful-looking skin requires consistent cleansing to eliminate dirt, oil, and unwanted substances like sweat and bacteria. (Talpekar et al 2016). The facial scrub forms an integral component in my daily skin care regimen (Pakianathan N. et al 2015). These garments include fine materials designed to expel old cells, grime, and contaminants. Incorporating a facial exfoliant into your bi-weekly beauty regimen may result in smoother, more radiant complexion. The act of sloughing off old skin flakes is known as exfoliation (Kachare et al 2020).. This product enables smoother breathing for your skin while promoting healing through its ability to shed old layers and enhance blood flow (Behalpade et al 2022)

Prolonged warmth in summertime may lead to premature signs such as fine lines, spots, discoloration, and burns on skin. Alternatively, harsh winters may harm the skin by leading to fissures, abrasions, oozing, and inflammations. (Harry et al. 1962). Various skin conditions

occur frequently among all ages; they can be triggered by contact with microorganisms, chemical substances, biotoxins, as well as nutritional deficiencies. (Dhanashri N. et al 2004). The science of ayurveda had utilized many herbs and florals to make Ayurvedic sciences employ diverse botanicals in crafting beauty products aimed at enhancing appearance and safeguarding skin health. Botanical extracts contain non-toxic elements which nourish the system without any adverse effects; they offer vital vitamins and trace minerals for health benefits. (European journal et al., 1993)

In Facial scrub formulation there are main ingredients having abrasive property tulsi seeds many other herbal ingredients such as turmeric, Aloe vera and neem leaves which holds many properties which are nourishing for skin. The preparation was evaluated for considering various parameters like their physical properties, pH, spreadability, rheological studies skin Allergic reaction, sensitivity, foam formation and ability of cleaning, consistency and texture.

2. Material method :

Collection of all herbal material, authentication, drying, grinding Sieving and storage in free from moisture container and used for formulation of scrub.

- **Collection:** Leaves of neem, rhizomes of turmeric, aloe vera, seeds of tulsi, were collected from the local area of the market in Bhusawal Maharashtra region.
- **Authentication :** Authentication of ocimum sanctum seeds done by Nahata Science College by the botanical expert by giving specimen of Ocimum sanctum seeds.
- **C. Qualitative test :** Tulsi extracts seeds contains phenol, flavanoids, saponins, steroids.

Table 1: Preparation and Formulation of facial scrub Gel

S. no	Particulars ingredients	(gm)	Uses
1	Tulsi seeds	0.5g	Antibacterial activity
2	Neem leaves powder	0.5g	Antibacterial activity
3	Turmeric powder	0.5g	Antimicrobial and antibiotic
4	Aloe vera gel	0.5g	Hydrating activity
5	Olive oil	1ml	stabilizer
6	Carbopol	0.5g	Gelling agent
7	Methyl Paraben	0.1 g	preservative
8	Triethanolamine	0.5g	Neutralizer
9	SLS	4g	Foaming agent
10	Jasmine oil	1ml	essence
11	Rose Distilled water	10ml	Diluting agent

Procedure:-

2.1. Preparation of gel base :

1. Methyl Paraben was weighed and dissolved in a beaker containing water. To this add carbopol stirred

continuously for few minutes until it forms a gel.

2. Sodium lauryl sulfate was weighed, dissolved separately with water and was added into the above gel. Add Drop wise triethanolamine into gel to neutralise the PH .
3. In the mortar and pestle, measure out the active powdered ingredients.
4. Triturate them for a while. After the triturating process,
5. Aloe- vera gel, neem leaves Tulsi seeds , rose water, turmeric powder and essential oils, mix them thoroughly . After the whole process add some few drops of jasmine oil as flavoring oil.

2.2 Preparation of Azardica indica (Neem leaves) :

The first step is to dry Azardica leaves in the shade. The dried leaves were then ground into a fine powder in a mill, mixed with 250 milliliters of distilled water, and then cooked in a water bath at 35.0 degrees Celsius for 45 minutes. The liquid was concentrated, and the required amount of extracts were obtained.

2. Prepare the turmeric extract with warm water, filter it, and use it to make a face scrub.
3. Jasmine oil was used as an essence Neem leaves and turmeric rhizomes are used to appropriately ground it for crude medications.

2.3 Evaluation of scrub gel: Viscosity, irritability, washability, grittiness, foamability, consistency, pH, spreadability, extrudability, and appearance were all assessed for the manufactured gel. 9,10,11,12, 13.

1. Physical properties

The prepared scrub gel was evaluated for its odour and colour.

The colour was brown and odour was found to be characteristic.

2. Stability of PH: The prepare gel was applied on the pH paper and to check either basic and acid in nature

3. Uniformity and Nature : It was found to be semi solid with visual observation.

4. Efficiency of Sprediability: A very small amount of the gel was applied to the glass slide, and then the gel was placed on top of another glass slide. It had a wooden weight on it. The area and the period of time needed for the gel to spread were measured. The spreadability efficiency is shown by the quantity and area of gel on the glass slide was measured .

5. Potential for Extrusion

A tiny quantity of gel was transferred into a collapsible ointment container. One end remained open while the other closed. On the closed side, a little pressure was applied. Both the volume of gel extruded and the extrusion time were recorded.

6. Viscosity

The Brookfield viscometer was used to measure the gel's viscosity

7. Allergy reaction (Patch test) :

A small amount of the gel was applied on the back of ear skin and kept for a few minutes
Then check the gel was allergic or nonallergic.

8. Cleanability

A small amount quantity of gel was applied over the skin and was washed with water.

9. Grittiness of particles

Gel was found to have a few gritty particles

10. Formation of foam

Small amount of gel was shaken with water in a graduated measuring cylinder and the foam volume increases will recoded

Result:

s.no	Physical propertie	Results
1	Colour	Brown
2	Consistency:	Good
3	viscosity	1.4500 poise
4.	Spreadability	6.00.cm/sec
5	Cleaning ability	Easily washable
6	Gritty texture	No greety particles
7	Foam ability	Foam volume
8	Allergic reaction	No irritant
9	Cleaning ability	Easily washable with water
10.	PH	7

Discussion:

Natural remedies are safer than synthetic ones and are the most effective way to treat any condition. For a wide range of skin conditions, natural remedies are the best option because they don't have any harmful side effects. Keeping the muscles youthful and healthy is the objective of the herbal scrub gel. In addition to increasing blood flow and decreasing trapped dirt particles, natural scrub gel also controls wrinkles, fine lines, premature aging, and skin shedding. Once this is used, a natural scrub gel could be created. This herbal scrub gel combination is excellent since it contains naturally occurring ingredients including neem, turmeric, and tulsi seeds.

Conclusion:

They remove dead cells, pollutants, and extra oil from the skin to leave behind a smoother, brighter, and more glowing complexion. They are a safe and efficient method of exfoliating skin. They can be made with natural components to offer further advantages like nourishment, fewer indications of aging, and pollution protection. They help increase blood circulation and skin texture.

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