



“FORMULATION AND EVALUATION OF HERBAL SCRUB OF NEEM EXTRACTS”

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ABSTRACT:

The main objective of present study was to prepare a herbal scrub incorporated into gel. The use of natural ingredients to fight against acne, wrinkle and also to control secretion of oil is known as natural or herbal cosmetics. Herbal cosmetically usually contain the plant parts which possess antimicrobial, antioxidant and anti aging properties. Herbal cosmetics are the safest product to use routine with no side effects and cosmeceuticals .are the product which influences the biological function of skin. The growing demand for natural skincare products has led to increased interest in herbal formulations that are safe, effective, and environmentally friendly. This study focuses on the formulation and evaluation of a herbal scrub using naturally derived ingredients known for their exfoliating and skin-nourishing properties. The scrub was prepared using herbal components such as walnut shell powder, neem powder, aloe vera gel, and essential oils, chosen for their therapeutic benefits and minimal side effects. The formulated scrub was evaluated for key parameters including pH, texture, spread ability, grittiness, wash ability, and stability. The results indicated that the scrub possessed desirable physical properties, was gentle on the skin, and provided effective exfoliation without irritation. This formulation represents a promising alternative to synthetic scrubs, aligning with the current trend toward organic and sustainable personal care products.

KEYWORDS: Herbal, Scrub, Exfoliation, Cleansing, Skin, Formulation, Evaluation, Appearance, pH, Consistency, Spread ability, Wash ability, Irritability, Stability, Grittiness, and various herbal ingredients like Rice powder, Sandalwood powder, Orange peel powder, Tulsi powder, Alo vera, Honey, and Turmeric powder.

INTRODUCTION:

Definition of cosmetic: Cosmetics are defined as article meant to be poured, rubbed, sprinkled, sprayed, or injected into the human body for cleansing, beautifying, boosting attractiveness, or altering appearance without harming

structure of function under the terms of the food drug and cosmetic act. Herbal scrubs are skincare products that use natural ingredients like herbs and botanical extracts to exfoliate, cleanse, and rejuvenate the skin. Formulation and evaluation involve creating the scrub with specific ingredients and testing its characteristics like pH, viscosity, and skin tolerance. This ensures the scrub is effective, safe, and meets desired qualities like smooth texture and gentle cleansing.

In general, cosmetics are external preparations which are applied on the external part of the body. Even in earlier days, men and women used to decorate their bodies for improvement of appearance. Men used leaves of vegetables and parts of animals whereas women use to wear coloured stones and flowers round their neck and wrist. Gradually, they start using coloured earth ointments on their face and body.

Natural beauty blessings and cosmetics aid in the presentation and enhancement of a person's beauty and personality. People nowadays prefer natural foods, herbal treatments, and natural healing procedures for a healthy lifestyle. Herbal cosmetics are formulations with phytochemicals from various plant sources that regulate skin function and give essential nutrients for healthy skin. Herbal cosmetics are natural plants and their products that are utilized in cosmetic preparations for their aromatic value. Because there is a widespread assumption that chemical-based cosmetics are harmful, herbal goods have sparked a desire for natural products and natural extracts in cosmetics .

ANATOMY OF SKIN:

The integumentary system is largest organ and composed of skin, hair, nails and glands. Epidermis regenerates with new cells every 28 days. This layer measures the thickness of 0.05 to 0.1mm.

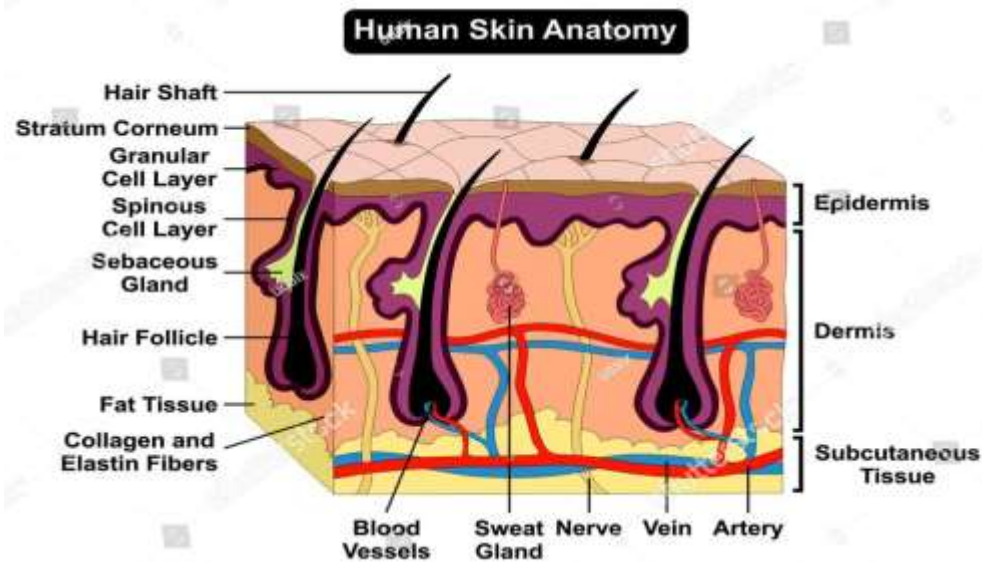
1.They help remove dead skin cells, reveal brighter, more even skin, and improve the absorption of skincare products.

A) Epidermis

B) Dermis

c) Subcutaneous tissue.

A cosmetic product called a facial scrub is used to hydrate, exfoliate, and clean the skin on the face. The three types of skin are sensitive, oily, and dry skin. Those have dry skin should wash their faces with moisturizer-containing cleanser and then apply moisturizer. Gently scrubbing sensitive skin is recommended. To avoid clogged pores and to keep the skin's oil production in control, oily skin needs a scrub that exfoliates deeply. There is no specific procedure in the preparation of rice scrub compared to other products; it is a pure natural handcrafted facial scrub, so there is no specific technique. So all we have to do now is combine the various components in a precise and discrete manner until we get a perfect mixture, which we may call a scrub. There are various forms of scrub that we might refer to as alternatives. When dead skin cells accumulate on the surface of your skin, your complexion might become bland. That's where exfoliation, specifically the use face scrub, might .



ADVANTAGES:

1. The remove dead skin cells, promoting cell turnover and revealing brighter, healthier skin.
3. **Pore Cleansing:** Scrubs help unclog pores, reducing the appearance of blackheads, whiteheads, and other blemishes.
4. **Reduced Acne and Scars:** Some scrubs can help reduce the appearance of acne and acne scars by promoting cell turnover and removing surface debris.
5. **Enhanced Absorption of Skincare:** Exfoliated skin can better absorb serums, moisturizers, and other skincare products.
6. **Improved Texture:** Regular use can improve skin texture, making.

DISADVANTAGES

1. **Over-exfoliation** from scrubs can lead to various skin issues, including irritation, redness, and dryness, especially if used excessively or with harsh ingredients. Additionally, scrubs can disrupt the skin's natural protective barrier, making it more sensitive to UV rays and potentially leading to tanning, rashes, or sunburns.
2. **Shorter Shelf Life:** Herbal scrubs often contain natural ingredients without preservatives, which may reduce their shelf life.
3. **Inconsistent Results:** Due to variations in natural ingredients, the effectiveness might vary from batch to batch.
3. **Allergic Reactions:** Some individuals may be sensitive or allergic to certain herbs or essential oils used in the formulation.
4. **Less Foaming:** Compared to synthetic products, herbal scrubs may produce less lather, which some users might find less satisfying.
5. **Requires Proper Storage:** Natural products often need to be stored in cool, dry places to avoid spoilage.
6. **Slower Results:** Herbal scrubs may take more time to show visible effects compared to chemical-based exfoliants.

HARBAL INGREDIENTS USE FOR FORMULATION:

1.Neem Powder:



Fig:1

Biological source: *Azadirachta Indica*

Key Constitution: limonoids, alkaloids, flavonoids, and other bioactive compounds.

Uses: Antiaging, Humectant

2.Honey:



Fig:2

Biological Source: *Apis cerena*

Key Constitution: fructose and glucose,

Uses: Moisturizer, Nourish skin

3.Gram Flour:



Fig:3

Biological Source: *Cicer arietinum*

Key Constitution : protein, carbohydrates

Uses: remove all the dead and dirt skin cell from your face.

4.Alo Vera:



Fig:4

Biological Source: *Aloe barbadensis miller*.

Key Constituents: Polysaccharides, amino acids, vitamins (A, C, E, B12), enzymes.

Uses:

Moisturizes scalp; soothes irritation; reduces dandruff; promotes hair growth

5.Multani Mitti:



Fig:5

Biological source: Fuller Earths Clay

Key Constitution: silica, alumina, iron oxide,

Uses: Remove blackhead and whitehead

6.Lemon juice:



Fig:6

Biological source: Citrus Lemon

Key Constitution: citric acid

Uses: Astringent and Antiseptic.

7.Rise Flour:



Fig:7

Biological source: *Oryza sativa*

Key Constitution: moisture, ash, fat, and protein.

Uses: Gentle exfoliating properties, ability to absorb excess oil, and potential to brighten the skin.

8.Sodium Benzoate:



Fig:8

Key Constitution: Benzoic acid

Uses: Prevent yeast, mold, fungus from forming

9.Methyl Parabean:



Fig:9

Uses: Cosmetics and Personal care product, food products, pharmaceutical.

10.Rose Water:



Fig:10

Key Constitution:water and a significant amount of rose oil.

Uses:toner, facial mist, makeup remover, and ingredient in face.

Sr.no.	Ingredients	Quantity
1.	Neem Powder	10 gm
2.	Honey	4 gm
3.	Gram Flour	3 gm
4.	Alo vera	15 gm
5.	Multani Mitti	5 gm
6.	Lemon juice	5 ml
7.	Rise Flour	6 gm
8.	Sodium Benzonate	2 gm
9.	Methyl Parabean	0.5 gm
10.	Rose Water	15 ml

Table: 1 List of Ingredients

METHODS OF Collection:

1. Prepare the Neem Powder:

Collect fresh neem leaves, wash them to remove any dirt, and then dry them in the shade for 7-15 days. Once dry, grind the leaves into a fine powder using a mortar and pestle or a grinder. You can sift the powder through a fine sieve for a smoother consistency.

Fresh rice was gathered from a shop. Rice were washed and dried. To produce the product, these rice are appropriately ground in a grinder and produced a powder after going through sieve number 60.

3 Collection of Ingredients:

Lemon juice, Multani mitti, Honey, gram floor was collected from shop. Methyl Parabean , Sodium Benzoate, Sodium laurel sulphate, Rose oil were collected from college laboratory.

4.Honey is a natural antioxidant and help keep acne at bay, due to its anti inflammatory properties. Sugar is used to remove dead skin cells form your face, Among this ingredients,

METHODS OF PREPARATION:

Step 1. Preparation of active ingredients: Weigh all ingredients as given in formulation table. Mix them uniformly using mortar and pestle.

Step 2. Add prepared gel

The produced gel was added to the active ingredient mixture and mixed. The produced Formulation was then assessed utilizing several parameters.

Step 3. Using mechanical stirrer, add water to and rose water to mixture.

EVALUATION OF HERBAL SCRUB:

- **Objective:**

To assess the physical, chemical, and microbiological properties of a newly formulated herbal scrub to ensure its safety, stability, and efficacy for cosmetic use.

1. Organoleptic Evaluation:

Appearance: Observe the color, texture, and consistency.

Odor: Assess the aroma for pleasantness and strength.

Texture: Check for smoothness and uniformity of particles.

2. pH Determination:

Method: Use a calibrated digital pH meter.

Procedure: Dissolve 1g of the scrub in 10ml of distilled water and record the pH.

Acceptable Range: 4.5 – 6.5 (suitable for skin application).

3. Spreadability Test:

Objective: To evaluate the ease of application on the skin.

Procedure: Place a sample between two glass slides and measure the spread diameter under standard weight.

Result Interpretation: Greater spread indicates better application.

4. Grittiness/Particle Size Check:

Method: Rub a small amount on the back of the hand.

Observation: Should feel mild and not overly abrasive.

Microscopy: Optional detailed particle size analysis.

5. Wash ability:

Procedure: Apply to a small skin area and rinse with water.

Observation: Should rinse off easily without leaving residue.

6. Foaming Ability:

Objective: To assess cleansing action.

Method: Shake 1g of scrub in 10ml distilled water and observe foam formation.

Evaluation: Moderate foaming is ideal for scrubs.

7. Stability Test:

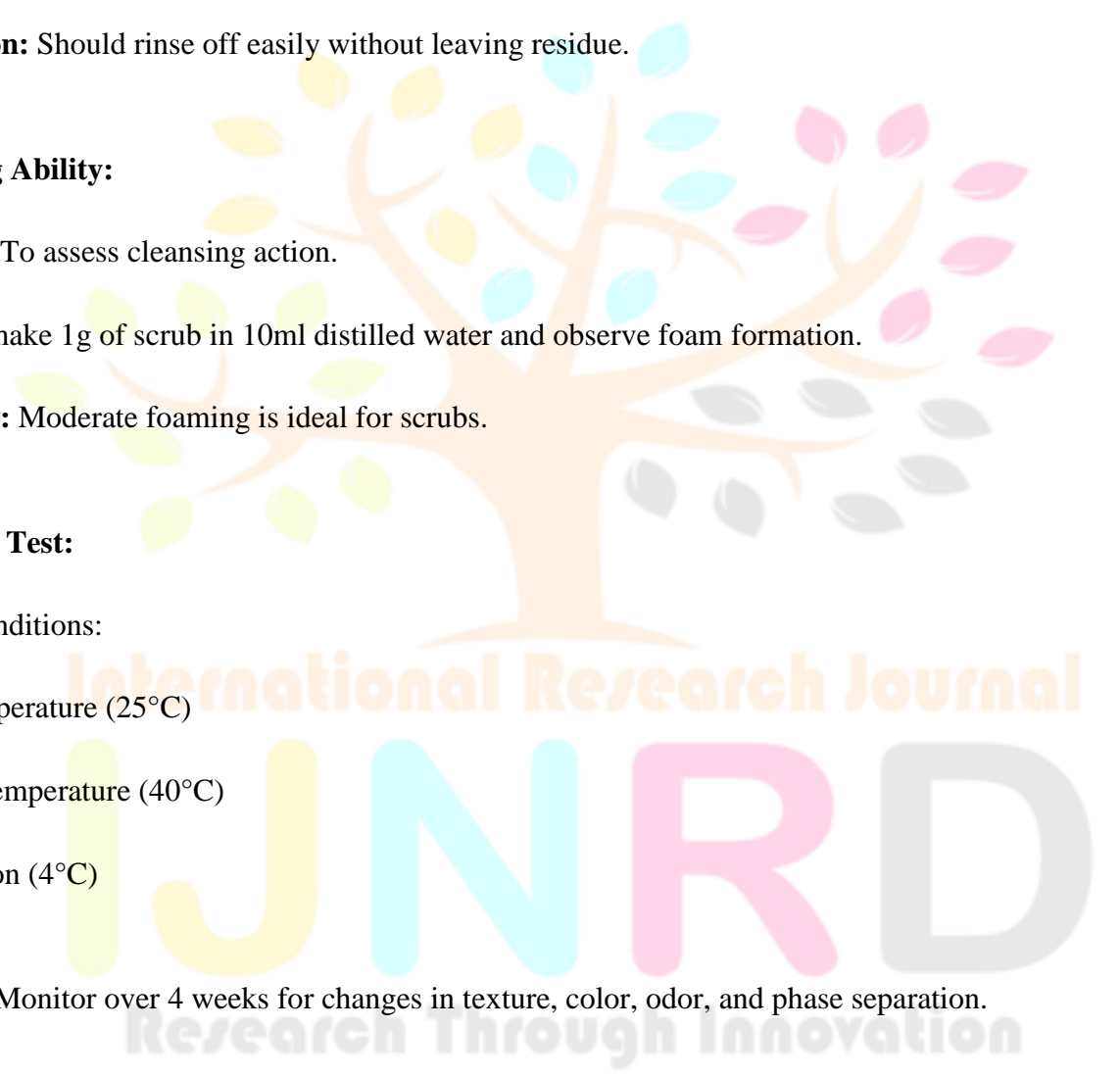
Storage Conditions:

Room Temperature (25°C)

Elevated Temperature (40°C)

Refrigeration (4°C)

Duration: Monitor over 4 weeks for changes in texture, color, odor, and phase separation.



8. Microbial Load Test:

Objective: Ensure the scrub is free from harmful microorganisms.

Method: Standard plate count for bacteria and fungi.

Limits: As per cosmetic microbiological standards.

9. Skin Irritation Test (Patch Test):

Procedure: Apply a small amount to a patch of skin (usually inner forearm).

Observation Period: 24–48 hours.

Expected Result: No redness, itching, or inflammation.

10. User Acceptance Study (Optional):

Participants: Small group (10–20 volunteers).

Feedback Collected On: Texture, ease of use, skin feel, fragrance, overall satisfaction.

Sr.no	Parameter	Observation
1.	Colour	Greyish green
2.	Odour	Pleasant
3.	Nature	Semi Solid
4.	pH	5
5.	Irritability	Nonirritable
6.	Viscosity	1429 centipoise
7.	Wash ability	Easy washing property
8.	Skin sensitive	No rashes
9.	Patch test	No side effect

Table:2 Evaluation of Harbal scrub

Result:

Using a neem scrub regularly can improve the skin's texture and appearance. It helps to remove dirt, oil, and dead skin cells, leaving the skin feeling fresh and smooth. Because neem has natural antibacterial properties, it can reduce pimples and prevent new ones from forming. Over time, it may also help fade dark spots and give the skin a healthy glow. People with oily or acne-prone skin often see the best results, as it helps control excess oil and keeps the skin clean.

Accurate pH of the formulation is important for minimizing irritation to the skin. The formulation has pH 6.5 to 7 which is suitable and non-irritating for the skin. The viscosity was measured by using Ostwald viscometer. The readings of viscosity were based on time interval of 1 min for formulation to reach upper marking to the lower marking of Ostwald viscometer. If the formulation takes more time then the formulation is considered viscous and if it takes less time then the viscosity of formulation is considered less than the requirement. After using the scrub, skin was sure to feel softer, cleaner and refreshed. It made skin beautiful, youthful and soft and glowing. Herbal cosmetics showed lesser or no side effects, hence use of herbal cosmetics got increased.

Conclusion:

In conclusion, herbal scrubs offer a natural and effective alternative to chemical-based skincare products. They are enriched with the goodness of herbs and natural ingredients that help in exfoliating dead skin cells, improving blood circulation, and promoting healthy, glowing skin. Regular use of herbal scrubs can also help in preventing acne, blackheads, and other skin issues without causing harmful side effects. With increasing awareness about the benefits of herbal products, herbal scrubs are becoming an essential part of a healthy skincare routine.

The prepared scrub was compared with various parameters like colour, odour, consistency, pH, spreadability, extrudability, viscosity, irritability, washability, grittiness, foamability and found to be satisfied with all required characterization. Thus, the developed formulation can be used as an effective scrub for using it to bear a healthy and glowing

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