



# Formulation, Development & Evaluation Of Polyherbal Scrub.

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**❖ Abstract:-**

The research aimed to produce an herbal facial scrub. The majority of times, the skin on the face is in regular contact with dirt, pollution, and other contaminants. The main objective of present study was to prepare a Herbal scrub Gel. Herbal cosmeceuticals usually contain the plant parts which possess antimicrobial, antioxidant and anti aging properties. In recent years, the increasing demand for herbal formulation is being fuelled by a growing consumer interest in natural products. The primary ingredient in this scrub is orange peel.

These formulations are safe to use for skin and found to be satisfied with all required characterizations. The scrub was evaluated by using the parameters like Appearance, Smoothness, effect on acne, pH, Spreadibility, Astringent action, Grittiness, Emollient action and Irritation.

❖ **Key Words:-** Facial scrub, Cosmetics, sandalwood, Orange Peel.

**❖ Introduction:-**

The Greek word "kosmeticos" (which means to decorate) is where the word "cosmetics" originates.<sup>[1]</sup> Cosmetics are readily available items that are used to enhance one's look by washing, beautifying, and enhancing attractiveness.<sup>[2,3]</sup> In the past, men and women competed equally to improve their attractiveness. Males used animal parts, vegetable leaves, etc. to decorate themselves, while females adorned their necks and wrists with coloured stones or flowers.<sup>[1]</sup>

Cosmetics are substances that are applied to the skin in order to purify, enhance, or alter its look. Cosmetics are made to alleviate acne, lower the appearance of wrinkles, and reduce oil production. There are many various types of cosmetics, and each one has a unique impact on the skin. They have a variety of beneficial properties, including as antioxidant, antibacterial, emollient, and antiseptic effect.<sup>[4]</sup>

This business is seeing a boom thanks to the idea of beauty, attractiveness, and appearance. Men's skin is rougher than women's, thus cosmeceutical companies design their products to match the customer's skin's texture.<sup>[5]</sup>

There is a scrub for every type of skin. Only the essential oil is used as an ingredient in the scrub will change depending on the skin type three distinct skin types are sensitive ,oily & dry.<sup>[8]</sup>

***Prime benefits of exfoliating your skin.***

- For Spot-Free, Clear Skin After exfoliating, your skin is clean and free of debris, sweat, and oil.
- Eliminates Dry Skin Flakes: Blisters on the skin are nasty!
- Enhances skin's glow,
- Improves smoothness, gets rid of dark patches, fades acne scars,
- Prevents ingrown hairs.
- Assists in the clearance of dead cells.

**❖ Aim:-**

Formulation, Development & Evaluation Of Polyherbal Scrub.



Fig 1:- Polyherbal Scrub.

**❖ Objective:-**

The major goal of the research was to create a herbal scrub with gel-based natural components. Cosmetics have a significant part in today's society in beautifying and changing the appearance of skin for both men and women. The skin surface needs frequent cleansing to get rid of oil, sebum, and other secretions, dead cells, crusts, and any makeup that has been applied in order to be healthy and attractive. Because herbal cosmetics have few or no side effects, their use is growing.

**❖ Literature Review:-****1. Skin care with herbal exfoliants**

Herbal skin exfoliation is a crucial component of routine skin care. It reduces wrinkles, discoloration, and blemishes while unclogging pores, smoothing and chemically balancing the skin, and stimulating the creation of new cells. This helps the skin stay clear, moisturised, and healthy.<sup>[28]</sup>

**2. Formulation and evaluation of multipurpose herbal scrub in gel from using limonia acidissima:**

The formula is based on the natural scrub limonia acidissima. The study's objective was to develop an all-purpose herbal gel containing limonia acidissima as one of its components that has both medicinal and aesthetic properties. The plant's most prized parts, which are used for a variety of therapeutic purposes, are the roots, fruits, bark, and leaves.

Extracted fruit components were added to the gel phase. The fruit pulp from *Limonia acidissima*, which has antioxidant, anti-aging, anti-wrinkle, skin-tightening, lightening, and brightening qualities, is extracted using ethanol in the recipe. They may exfoliate skin without scratching the surface by applying pressure on them. In order to create a proper herbal extract, appropriate base components, such as gelling agents, preservatives, neutralizers, and foaming agents were chosen and included. The formulation was assessed using a number of characteristics, and after being applied to skin, it was confirmed to be satisfactory.<sup>[29]</sup>

**3. Clinical review of deep cleansing apricot scrub:**

Exfoliating regularly promotes healthier, smoother, more even-toned skin, which has key aesthetic benefits like preventing acne, having smaller pores, and having fewer wrinkles, among others. Exfoliation also helps with the natural shedding of skin. The use of herbal remedies for chronic and lifestyle-related disorders has considerably expanded in recent years. Deep cleansing apricot scrub, a proprietary and trademarked polyherbal blend, claims to thoroughly cleanse the skin and leave it feeling hydrated and vibrant. Exfoliation involves removing the oldest superficial dead skin cells from the skin's outer layer. Both

mechanical and chemical exfoliation techniques are effective. The mechanical procedure entails physically rubbing an abrasive across the skin.<sup>[30]</sup>

#### 4. *Antioxidant facial scrub from red dragon fruit extract :*

The body is harmed by free radicals, which are created by air pollution and UV rays. Radicals are produced by the body. Antioxidants that are present in the body naturally can be used to counteract free face scrub, a skin care treatment. Abrasive cosmetics, often known as cosmetics with coarse grains, are used to moisturise the skin while exfoliating dead skin cells. Some women normally favour this kind of cosmetic procedure. A facial is a form of therapy used to clear the skin of impurities left behind by various face-treatment procedures. For instance, blackheads, whiteheads, and acne.<sup>[31]</sup>

#### ❖ *Benefits of Scrubbing Your Skin:*

##### 1. **For Sparkling Clean Skin:**

Scrubbing leaves your skin clean, free of sweat, oil, and debris. In actuality, the containers of cleansing milk, face wash, and facial cleansers are unable to remove all the dust that gathers in your skin's pores. Scrubbing does this task well.

##### 2. **Removes Flakes from Your Skin:**

Dry spots are caused by flaky skin. You can easily treat flaky skin by exfoliating it.

##### 3. **Assists in Getting Rid of Dead Cells:**

Dead cells give your skin a lifeless, worn-out appearance. With a soft scrub, remove them.

##### 4. **Enhances Skin Glow:**

Exfoliation can truly enhance the glow of your skin.

##### 5. **Removes Dark Patches:**

To see results, use the scrub twice weekly. It works particularly well on the knees, elbows, and knuckles.

##### 6. **Prevents Ingrown Hair:**

Scrubbing is the answer to the problem of ingrown hair, which is a recurring issue.

##### 7. **For Smooth Skin:**

The secret to a more attractive you is smooth skin. Your skin will not only look absolutely smooth thanks to the scrub, but it will also feel supple and well-nourished.

##### 8. **Enhances Skin Texture:**

Scrubbing your skin leaves it clean, smooth, and with a better texture.<sup>[22]</sup>

#### ❖ *Ideal Properties of Scrub:-*

- It should not be poisonous, include tiny rough granules, be somewhat abrasive, not irritate the skin, not be sticky, and be able to remove dead skin cells.<sup>[6]</sup>
- It ought to be lightly abrasive.<sup>[6,7]</sup>

#### ❖ *Material & Method:-*

All the herbal Material can be used in present study i.e, Orange Peel, Alove Vera, Sandal Wood Powder, Almond Oil, Glycerin, Neem Extract, Honey, Turmeric, Tulsi, Rose Water.

❖ **Formulation Table :-**

Sr.No.	Ingredient	Uses	Quantity
1	Orange Peel	Scrubbing Agent	6gm
2	Alove Vera Extract	Cooling Agent	2ml
3	Sandal Wood Powder	Smoothing, cooling effect, Sun protective.	0.5%
4	Almond Oil	Foaming Agent	0.5%
5	Glycerin	Emollient	2ml
6	Neem Extract	Skin conditioner, antiseptic	3%
7	Honey	Antiseptic, antioxidant	2ml
8	Turmeric	Antiseptic, improves fairness	0.5%
9	Tulsi	Anti-Acne, antimicrobial	0.5%
10	Rose Water	Vehical	Q.S

Table 1:- Ingredient &amp; Uses.

❖ **Ingredients:-**1) **Orange Peel (*Citrus sinensis*) :-**

- **Synonyms** :- Orange cortex, Bigarade orange, Seville orange, china Orange, Bitter orange peel.
- **Biological Source** :- Orange Peel is consists of fresh and dried outer part of the pericarp of citrus aurantium Linn.
- **Family** :- Rutaceae.

It is often referred to as sweet orange to distinguish it from the closely related Citrusaurantium, commonly referred to as bitter orange. B-carotene, a powerful antioxidant that moisturises, evens out, and softens skin, is found in orange peel and is turned into Vitamin A by the body. Oily skin is hydrated and given new life by orange peel. <sup>[9,10]</sup>



Fig 2:- Orange Peel.



Fig 3:- Orange Peel Powder.

2) **Alove Vera Extract:-**

- **Family**: Asphodelaceae.
- **Kingdom**: Plantae.
- **Species**: A. vera. <sup>[23]</sup>

The definitions of "aloe Vera" and "vera" are dissimilar. Aloe denotes a bright, acrid material, while vera denotes the truth. Aloe vera contains vitamins A and C and has anti-inflammatory properties<sup>[11]</sup>. Aloe vera is also known as ghrirkumari. Aloe Vera is used to soften and moisturise skin<sup>[12]</sup>. Regularly using aloe vera to the face can help with a variety of skin conditions, including acne, eczema, and sunburn. <sup>[13]</sup>



Fig 4:- Aloe vera Extract

### 3) Sandal Wood Powder:-

- Synonym:- Sandalwood tree
- Biological source:-It consists of dried bark of Santalum album.
- Family:- Santalaceae
- Description:-
  - Colour - Brown
  - Odour - Aromatic
  - Taste - Unpleasant
- Chief chemical constituents:- Santalol, Cedrol, Esters
- Uses:- Soothe sunburn, Remove suntan, Reduce signs of aging skin.<sup>[14]</sup>



Fig 5:-Sandal wood.



Fig 6:-Sandal wood Powder.

#### 4) *Almond oil:-*

- Family:- Rosaceae.
- Genus:- Prunus.
- Species:- P. amygdalus.
- Kingdom:- Plantae.

The almond tree, *Prunus amygdalus* (also known as *Prunus dulcis*), is a species of tree that is indigenous to Iran and its neighbouring nations.<sup>[15]</sup> Almond oil is rich in vitamin D, E, and minerals that reduce inflammation, shield the skin from UV ray damage, and rehydrate it. In addition, it contains a lot of potassium, magnesium, calcium, and vitamins A and B. It penetrates deeply and is rich in unsaturated fats, which will soften your skin.<sup>[16]</sup>



Fig 7:- Almond Oil

#### 5) *Neem Extract:-*

- Synonym:- Neem
- Biological source- It consists of dried leaves of *Azadirachta indica*.
- Family:- Meliaceae.
- Description-
  - Colour - Green
  - Odour - Pungent
  - Taste - Bitter
- Chief chemical constituents:- Nimbinin, Nimbidin, Quercetin
- Uses:- Skin toner, Lightens skin blemishes, Remove blackheads.<sup>[14]</sup>

Neem is anti-inflammatory, antibacterial, and very helpful for skin that is greasy and prone to acne. The antibacterial, anti-inflammatory, and anti-oxidant properties of several chemical components cause an anti-acne effect. Acne treatment is one of neem's most well-known skin advantages.

#### ➤ **Pharmacological actions:-**

Abortifacient, analgesic, anthelmintic, antibacterial, antiyeast, antiulcer, antifertility, antifilarial, antifungal, antihyperglycemic, anti-inflammatory, antiviral, antimalarial, diuretic, antinematodal, antipyretic, antispasmodic, insecticidal, antispermatogenic, antitumor, hypercholesteremic, hypoglycaemic, immunomodulator.<sup>[25,26]</sup>



Fig 8 :- Neem Extract.

## 6) Honey:-

- Synonym:- Shahad
- Biological source:- It consists of saccharine liquid prepared from the nectar of the flowers by the hive-bee *Apis mellifica*.
- Family:- Apadae.
- Description:-
  - Colour - Yellow brown coloured liquid
  - Odour - Sweet
  - Taste - Sweet
- Chief chemical constituents:-
  - Dextrose and laevulose (70-80%),
  - Dextrin (0.06-1.25%),
  - Proteins.
- Uses:-
  - Good for wrinkles and aging.
  - Prevent acne.
  - Remove dirt from pores.

Honey is a very common ingredient used in cosmetic treatments like face wash and hair conditioner. The only naturally derived insect product with medicinal, cosmetic, and nutritional benefits is honey. Since ancient times, honey has been used both as food and as a medicine.<sup>[17]</sup>

Honey bees, one of the most well-known species of bees, are responsible for producing the sticky, sweet substance known as honey. Honey production and storage provide food for bee colonies. Honey is made by bees by gathering and processing the sweet plant fluids, primarily flower nectar, or the secretions of other insects, such as aphid honeydew. This refinement occurs during storage in the hive, where water evaporation concentrates the honey's carbohydrates into a thick, viscous material, as well as within individual bees, through regurgitation and enzymatic activity.<sup>[27]</sup>



Fig 9:- Honey

### 7) *Turmeric*:-

- Family:- Zingiberaceae.
- Genus:- Curcuma.
- Species:- C. longa.
- Kingdom:- Plantae.

Turmeric widely used condiment and colouring agent. It is also known as the "golden spice", "yellow root" Turmeric shows anti-inflammatory property, a vanishing cream base prepared with turmeric and sandalwood showed anti inflammatory activities turmeric typically mixed with water or honey to a pasty consistency and applied directly to the skin.<sup>[18,19,20]</sup>

#### ➤ **Controls oily skin:**

Turmeric is beneficial for oily skin since it aids in controlling sebum production, an oily material created by the sebaceous glands.

#### ➤ **Treats acne:**

Due to its antiseptic and antibacterial properties<sup>[32]</sup> that prevent breakouts and pimples, turmeric is used to treat acne. It lessens inflammation, evens out skin discolorations, and removes redness from acne scars and other types of scarring.

#### ➤ **Gets rid of face hair:**

Although studies have not been able to demonstrate that the ingredient is effective at reducing hair growth, kasturi turmeric is used in many cultures to reduce facial hair. Even if you don't want to risk facial darkening, you can combine Kasturi turmeric and chickpea flour.<sup>[32]</sup>



Fig 10:- Turmeric.

Fig 11:- Turmeric Powder.

## 8) *Tulsi* :-

- Synonym:- Tulsi
- Biological source:-
  - It consists of dried leaves of *Ocimum sanctum* L .
- Family:- Lamiaceae.
- Description:-
  - Colour - Green
  - Odour - Aromatic
  - Taste - Pungent
- Chief Chemical constituents:-
  - Oleanolic acid, ursolic acid, rosmarinic acid
- Uses-
  - Prevents acne and pimples, Improve skin texture, Cleanser.
  - The holy basil plant is a small annual or short-lived perennial shrub, up to 1 metre (3.3 feet) in height. The stems are hairy and bear simple toothed or entire leaves oppositely along the stem.

Tulsi (*Ocimum sanctum* L.), sometimes known as holy basil in English and tulsi in Sanskrit, is a Lamiaceae plant native to the Indian subcontinent that is widely utilised in Ayurvedic treatment and has been for over three thousand years. Tulsi is utilised to treat a wide range of common health problems and is usually referred to in the Ayurvedic framework as a "Solution of Life" for its curative properties. The Indian Materia Medica lists tulsi leaf separates as a remedy for pyrexia, sickness, and bronchitis. It is regarded as a common plant in India. It is an upright, considerably expanded subshrub that is 30–60 cm tall with fuzzy stems and simple, inverted green, pungent leaves.

Tulsi is revered as the supreme leader of all living things and has a significant impact on how we spend our life. It is the most well-known family plant in India and is revered in Hindu religion. The function, attributes, and application of tulsi are explained in a variety of Hindu tales and legends. Tulsi is an upright, fragrant bush with a three to five foot growth potential. It usually flourishes in yards and around the perimeter of sanctuaries. This astoundingly high carbon dioxide retention capacity is unique to this plant. It releases oxygen in the morning, which is good for humans.<sup>[24]</sup>



Fig 12:- Tulsi

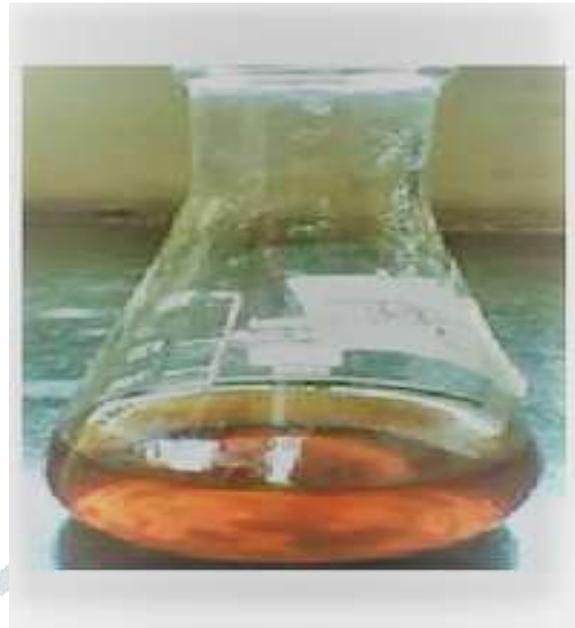


Fig 13:- Tulsi Extract

### 9) *Rose water:-*

Rose water is used for a variety of things, including calming skin irritability, soothing sore throats, reducing skin redness, assisting in the prevention and treatment of infections, containing antioxidants, enhancing mood, calming headaches, and soothing stomach issues.<sup>[21]</sup>

It should not be a surprise that rose water helps reduce skin redness and enhance complexion given that it has been used as a cosmetic for thousands of years. The antibacterial properties might make acne less severe. The anti-inflammatory properties can lessen skin inflammation and redness.



Fig 14:- Rose water.

### ❖ *Evaluation:-*

#### ➤ *Apperance:-*

1. Colour:- Yellowish brown colour of facial scrub was observed by visual examination.
2. Odour:- Odour found to be characteristics. Sweet and simple syrup like odour.
3. State:- Semisolid state of scrub observed by visually.
4. pH:- pH of the prepared gel evaluated by using pH paper . Small amount of scrub applied on pH paper. pH was found in the range of 4-7
5. Consistency:- It was found to be semi solid with visual observation.

6. Spreadability:- It is used to identify spreadability of the gel on the skin.

Two slides are taken and 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 represents the efficiency of spreadability.

It calculated by using formula:

$$S = m \times L/t$$

S= spreadability.

M= weight placed on slide.

L= length of glass slide.

T= time taken in seconds.

7. Irritability:- Small amount of gel applied on skin and kept for few minutes and found to be non- irritable.
8. Washability:- Small quantity of gel applied on the skin and wash with water after few minutes found to be washable with water.
9. Grittiness:- The formulation was checked for the presence of any gritty particles by applying it on the skin.
10. Foaming Index:- Add 1 gm formulation in 5ml water in test tube, shake it for 5 min. Allow it to stand for 15min. Observe the foam in cm. If the height of foam is less than 1 cm ,the foaming index is less than 100.If the height of foam is more than 1 cm then it is over 1000.

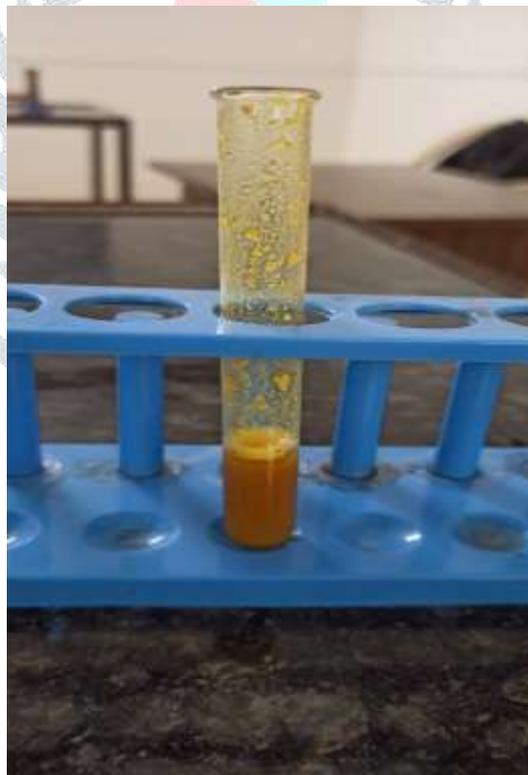


Fig 15:- Foaming Test.

❖ **Result & Discussion:-**

Herbal scrub was formulated using simple gel preparation method. From results it was showed that scrub was soft, easy to spread and applies comfortably to the skin based on spreadability test. Spreadability, viscosity and pH of formulation was found to be good.

Sr.No.	Parameter	Observation
1	Colour	Yellowish Brown
2	Odour	Sweet and simple syrup like odour
3	State	Semi-solid
4	pH	4-7
5	Spreadability	Uniform
6	Irritability	Non Irritant
7	Washability	Easily Washable
8	Grittiness	Small Gritty Particles
9	Foaming Index	Less Than 100

Table 2:- Result

**Conclusion:-**

From the above results it is concluded that new formulation herbal scrub can be safe to use and the Orange peel used as a scrubbing/cleansing agent showing good effects and as mostly ingredients are natural ingredients so chances for side effects are less. It can be used for any type of skin i.e. normal, oily and dry. It gives best results and make the skin glowing and healthy.

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