

A Research on: Essential Oil Scrub

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➤ **Introduction**

Products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating the appearance of body" is the definition of cosmetics. Both synthetic and natural chemicals can be used to make body scrubs. Regular usage of scrubs results in smooth, velvety, glowing, and healthy skin because new skin cells are exposed and dead skin cells are eliminated. Various tests are used to evaluate the prepared herbal formulation, including appearance, washability, PH, irritation, and spread ability. As a result, the body scrub's formulated mixture worked well for maintaining clear, healthy skin.

Herbal exfoliating scrubs counteract environmental damage and lessen age-related changes by removing superficial dead cells and promoting the growth of cells in the sub-epidermal layer. Using a scrub or herbal products with antiaging, vitamin, antioxidant, and antibacterial properties will technically clean the surface and help eliminate these dead skin cells while also cleansing the skin deeply and making it shine. Utilizing the facial scrub was easy: select a standard scrub that is appropriate for your skin type, massage it in for a minute on hydrated skin, and then rinse it off. For every type of skin, the scrub is suitable. Depending on the kind of skin, only these essential oils will change when used as a scrub ingredient. There are three different varieties of skin: dry, oily, and sensitive.

Commercially available cosmetics are designed to enhance the look of skin through the processes of washing, beautifying, and attractiveness-promoting. Various plants have been utilized for management, cleansing, and aesthetic purposes since ancient times. The majority of the body, or the skin on the face, is a good indicator of someone's health. It is composed of substances including lipids, carbohydrates, and amino acids, among others. In order to maintain clear, shiny, and healthy skin, a balanced diet is necessary. The herbal paste known as "Mukha Lepa" in Ayurveda is applied as a face treatment. This paste made of herbs is applied to the face to cure pigmentation, scars, markings, and acne.

The term "Herbal Cosmetics" may be used to describe products that are manufactured with several approved cosmetic substances to provide a base upon which one or more herbal ingredients are added to provide defined, or "corrective," preferences. Alpha-hydroxy acid, retinoic acid, ascorbic acid, and coenzyme are examples of over-the-counter skin care products that claim therapeutic benefits.

Beginning in the 1990s, cosmetic manufacturers used the word "cosmeceuticals" to characterize these products. These active compounds have multiple functions, including improving skin elasticity, delaying the aging process of the skin by reducing wrinkles, providing protection against UV radiation through antioxidant properties, and preventing collagen degradation.

➤ **Skin anatomy:**

The skin covers the whole exterior surface of the body, making it the biggest organ. The epidermis, dermis, and hypodermis are its three constituent layers, and each has a distinctly different architecture and function. The complex network that makes up the skin acts as the body's first line of defence against viruses, UV rays, toxins, and mechanical trauma. It also controls the volume of water released into the environment and the temperature. The pertinent anatomical structures of the epidermal layer of the skin, together with its structure, function, embryology, vascular supply, innervation, surgical considerations, and clinical significance, are covered in this article.

Skin Thickness:

Each layer of skin has a different thickness based on the area of the body it covers and is classified by the thickness of the dermal and epidermal layers. The stratum lucidum, an additional layer of epidermis, gives the hairless skin on the palms of hands and soles of feet its thickness. Based on dermal thickness, the upper back is thought to be the thickest; nevertheless, histologically, it is referred to be "thin skin" since the epidermal thickness is thinner than hairless skin and does not have the stratum lucidum layer.

Layers of Epidermis:

The layers of the epidermis include the stratum Basale (the deepest portion of the epidermis), stratum spinosum, stratum granulosum, stratum lucidum, and stratum corneum (the most superficial portion of the epidermis).

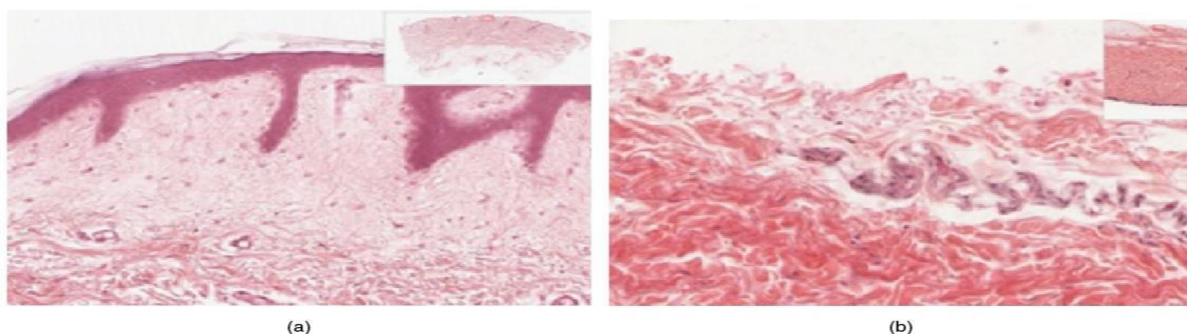


Fig no. 1: Thin skin versus thick skin. This slide shows cross section of epidermis and dermis of (a) thin and (b) thick skin.^[2]

Stratum Basale:

The lowest layer is called stratum Basale, or stratum germinativum. Haemosome's bind the stratum Basale to the basement membrane, which separates it from the dermis. The cuboidal to columnar mitotically active stem cells that make up this layer are continuously generating keratinocytes. Melanocytes are also present in this stratum.

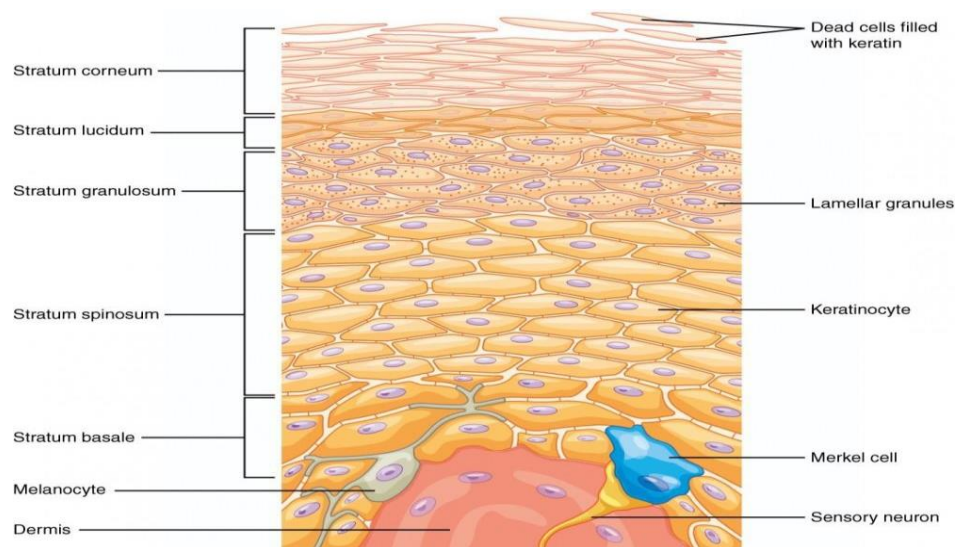


Fig no.2: layers of epidermis. the epidermis of thick skin has five layers, stratum Basale, stratum spinosum, stratum granulosum, stratum lucidum, stratum corneum ^[2]

Stratum spinosum:

The prickle cell layer, or stratum spinosum, is made up of eight to ten layers of irregular, polyhedral cells with cytoplasmic processes that jut outward and connect to other cells through desmosomes. These processes are frequently referred to as "spines." This layer contains dendritic cells. ^[1]

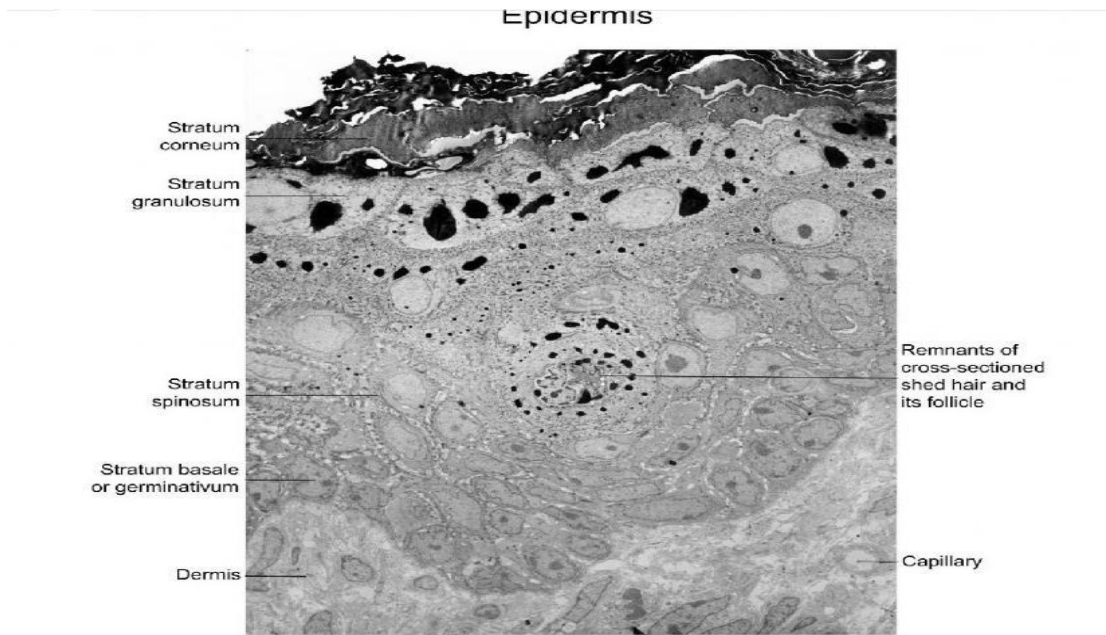


Fig no.3: cells of epidermis. the cells I the different layers of epidermis originate from basal cells located in stratum Basale ^[2].

➤ Methods of cleaning skin :

- ☐ Soaps
- ☐ Cleansing
- ☐ Brushing
- ☐ Face pack
- ☐ Face scrub

Soaps:

A fatty acid salt is what soap is made of and is used in many different lubricating and cleaning goods. Soaps are surfactants that are typically used in homes for cleaning, bathing, and other household tasks. Soaps are employed in industrial contexts as catalyst precursors, thickeners, and as parts of some lubricants.

Soap dissolves dirt and debris when used for cleaning, making it easier to remove from the item being cleaned. When soap is lathered with a small amount of water during hand washing, it acts as a surfactant and kills bacteria by denaturing their proteins and disrupting their membrane lipid bilayer.^[4]

**Fig.no 4:** soaps ^[3].**Cleansing:**

A skincare routine or procedure called face cleansing involves cleaning the face of dirt. It assists in getting rid of all the debris, dead skin cells, extra oil, and sebum that builds up on the skin's outer layers and clog pores. Frequent face washing helps to keep microorganisms at bay, leaving your skin looking younger, healthier, and more vibrant. This procedure functions best in conjunction with additional skin care practices. These include moisturizing and toning, but you should only perform these after taking your skin type into account. For instance, an oil-free moisturizer is best for oily skin types, whereas a deep moisturizer is best for dry skin types.^[4] One benefit of these lipid-free cleaning lotions is that they leave less residue on the face after usage. Additionally, these agents contain humectants (like propylene glycol) and/or emollients (like fatty alcohols) that balance off the surfactant's tendency to irritate or dry up skin.^[6]

**Fig no 5:** cleansing bottle ^[5].**Brushing:**

While it has ancient roots, dry brushing is a relatively new trend in skincare. Skin brushing is popular in Ayurvedic medicine, but it has been used for skin cleansing and beauty by many civilizations, including

the Japanese and the ancient Greeks. Although it's done at day spas, you can also perform it on yourself at home.

The reason it's termed "dry" brushing is that, unlike traditional bathing or showering, you just brush a stiff, bristles brush from toe to head. With the possible exception of a small amount of body oil, the skin and brush are both totally dry. This article reviews several common misconceptions regarding dry brushing and clarifies dry brushing techniques and practical issues. Additionally, it describes who shouldn't use dry brushing because of skin or other medical issues.^[7]



Fig no.6: health benefits of dry brushing ^[7].

Face pack:

The smooth powder used for facial application is called a face pack. These preparations are applied to the face as liquids or pastes, then left to dry and solidify to form a film that tightens, fortifies, and cleanses the skin. Typically, they are applied to the skin for ten to twenty-five minutes in order to completely evaporate the water; this causes the ensuing film to constrict, harden, and remove with ease. While the colloidal and adsorption clays employed in these preparations remove oil and debris from the skin of the face, the warmth and tightening impact of a face pack gives the invigorating sense of a renewed face.

In essence, face packs are additives that provide a few extra advantages. For different skin types, several kinds of herbal face packs are employed. Herbal facial masks can help lessen dark bags, wrinkles, acne, and zits. enhance the skin's smoothness and fairness as well. It also facilitates confidence building. The most effective and practical method for accomplishing this is Ayurveda.



Fig no.7: ayurvedic face pack^[33].

Face scrub:

Herbal exfoliating scrub lessens aging-related changes and offsets environmental damage by removing superficial dead cells and promoting the growth of cells in the sub-epidermal layer. Technically cleaning the surface with a scrub or utilize in herbal products that include vitamins, antioxidants, and antibacterial properties that help to deeply cleanse the skin, give it a shine, and get rid of these dead skin cells. Using the facial scrub was easy: just pick a standard scrub that works for your skin type, massage it in for a minute on hydrated skin, and then wash it off. For all skin types, the scrub is suitable. The type of essential oil that is used as a scrub ingredient will vary depending on the type of skin. For all skin types, the scrub is suitable. It is recommended to massage all regions of the skin gently after using the scrub gel to promote blood circulation and oxygenation. The ideal scrub should have small rough grains, be slightly abrasive, non-irritant, to non-sticky, and be able to remove dead skin cells. It should also not be harmful.^[8].



Fig no. 8: face scrub ^[11].

Advantages of scrub:

- ☐ Luminous, healthy skin that minimizes spores, lessens acne and breakouts, and conceals wrinkles
- ☐ permits product absorption, enhances tan, and keeps pH levels of the body stable.
- ☐ One of the most crucial steps in a facial skincare routine is exfoliating the skin to remove dead or dry skin cells.
- ☐ Scrubbing improves blood circulation, which contributes to healthy, radiant skin and helps with a variety of skin issues.
- ☐ For mechanical exfoliation, scrub cleaners with abrasives are utilized.

Disadvantages of scrub:

- ☐ Both vigorous scrubbing movements and chemicals have the potential to irritate skin, resulting in redness and inflammation. Allergy reactions to the chemicals in synthetic scrubs can also occur in those with sensitive skin.
- ☐ Excessive cleaning may leave pores open, leaving them vulnerable to both UV light and pollutants. Additionally, it makes your skin more vulnerable to sunburn and infections.

➤ Types of scrub:

1. Synthetic scrub
2. Herbal scrub

1. Synthetic scrub:

- ☐ Because synthetic products are made from synthetic materials, they may contain certain hazardous compounds.
- ☐ Since synthetic materials are used to make them, some potentially dangerous substances may be present in them.
- ☐ They could damage skin that is too sensitive.
- ☐ greater adverse effects than in herbal products
- ☐ E.g., Cetaphil Extra gentle daily scrub

2. Herbal scrub:

- ☐ Because herbal medicines are made naturally, they are entirely devoid of any dangerous ingredients.
- ☐ Products made from plants for their medical properties are referred to as herbal.
- ☐ safer to use than cosmetics made of chemicals.
- ☐ Products that are made from chemicals are referred to as synthetic.
- ☐ E.g., Plum Green Tea gentle revival face scrub ^[9].

Materials can be used as active ingredient:

Wheat cover powderNeem leaves powderTulsi leaves powder Turmeric powder Orange peel powder

Sandalwood powderMultani mitti

Honey Aloe vera

Jojoba Beads

Khus Khus Sugar and saltWalnut

beetroot powder poppyseeds peppermint oil orange powder beetroot powder rosemary essential oil

➤ Material and Methodology :

1. beetroot powder
2. poppyseeds
3. peppermint oil
4. orange peel powder
5. rosemary essential oil
6. almond oil
7. water
8. methyl paraben
9. Honey
10. Triethanolamine

1. beetroot powder:

Some Vernacular Name:Bengali: Bita gacha Hindi: cuqandar

Gujarati: saladaMalay: bit Punjabi: beet

Tamil: carkkarai vali kilanku cetiTelegu: dumpamokka

Kannada: gajarugaddeMatathi: Bita ^[12].

Taxonomical Properties:

species: beta vulgaris

subspecies: beta vulgarissubsp. Vulgariscultivar group: conditiva group



Fig no. 9: beet root powder ^[24].

The taproot section of a beet plant is called beetroot, or golden beet in British English. In North America, beets are typically referred to as beets, but the vegetable is also called table beet, garden beet, red beet, dinner beet, or golden beet.

In many nations, pickled beetroot is a traditional dish.[10] Commonly referred to as "chukander," beet root (*Beta vulgaris* L.) is prized for its sweetness and high sugar content, despite having very few calories. Beetroot is classified botanically as an herbaceous biennial belonging to the *Chenopodiaceae* family. In essence, it is the global cultivation of cool-season vegetable crops. Beetroot comes in a variety of bulb hues, ranging from yellow to red, and is rich in antioxidants and nutrients such as magnesium, sodium, potassium, vitamin C, and betalaine. Beet roots with a deep red hue are the most widely consumed by humans, whether they are cooked or consumed raw in salads or juice. ^[12].

2. Poppyseeds:

Some Vernacular Name:

Hindi and Bengali: Khas, Khas-Khas, Khus-Khus, KhusGujarati Valo

Marathi: Vala

Telugu: Kuruveeru, Vettiveellu, VettiveerumTamil: Vattiver

Kannad: Vattiveeru, Laamancha, Kaddu, Karidappasajje HulluMalyalam: Ramaccham, Vettiveru

Ayurvedic name: Ushira

Taxonomical properties:

Kingdom- Plantae Subkingdom – Tracheobionta Super division SpermatophyteDivision –

Magnoliophytes Class – Liliopsida

Subclass – Commelinidae

Order – Cyperales Family – Poaceae (grass) Subclass – Commelinidae

Species – Vetiveria Zizanoides (L.) Nas



Fig no.10: Khas Khas ^[14].

Uses:

- ☐ Numerous tribes treat a wide range of illnesses, including rheumatism, fever, headaches, boils, mouthulcers, burns, snakebite, and scorpion stings, with various portions of the grass.
- ☐ In addition to its therapeutic use, the culms and panicles make an excellent sweeping brush.
- ☐ The tribes and villagers also make considerable use of the culms and leaves for thatching their mudwalls and other structures ^[13].

3. peppermint oil: taxonomical properties:kingdom: plantae

clade: tracheophytes clade: angiospermsclade: eudicots order: lamiales family: lamiaceae genus:

Mentha

species: M X piperita ^[16].



fig no.11: peppermint oil ^[15].

The hybrid species of peppermint (*Mentha × piperita*) is a cross between spearmint and water mint. Originally from Europe and the Middle East, the plant is now widely grown throughout the world. Occasionally, it can be seen in the wild alongside its parent species.^[16]

4). Orange peel: Taxonomical properties: Scientific name: *Citrus reticulata*. Synonym: Sweet orange.

Family: Rutaceae.

Chemical constitute:

Limonene (90%)

Citral (4%) Vitamin C

Pectin Aurantimaric acid Octanol (39%)

Decanal (42%)

Monoterpene (91%)

contains no less than 2.5% volatile oil.



Fig no.12: orange peel powder.^[18]

Uses:

- 1) Lighten and brighten skin.
- 2) Cells build up around the pores enhance the shadows and make the pores appear larger.

- 3) Hydrates Dehydrates skin.
- 4) Promotes healthy skin glow.

It prevents the skin from free radical damage, skin hydration and oxidative stress. Also, it has instant glowproperty prevent acne, blemishes, wrinkles and aging.^[17].

5). rosemary essential oil:Taxonomical Properties: Kingdom: plantae

Clade: tracheophyteOrder: lamiales

Family: lamiaceaeGenus: salvia

Species: rosemarinus ^[20].



Fig no.13: rosemary oil ^[18].

Uses:

- ☐ May Improve Brain Function
- ☐ May Increase Circulation
- ☐ Antimicrobial properties help to manage acne breakouts
- ☐ Diluted rosemary essential oil helps to improve skin tone and texture
- ☐ Ability to balance the sebum secretion ^[25].

6). Almond oil:



fig no.14: Almond oil ^[22]

Taxonomical properties:

Kingdom: plantae clade: tracheophytesclade: angiosperms clade: Rosales family: Rosaceae genus: prunus

subgenus: prunus sub amygladus ^[23].

7). Water:

Other names: Hydrogen oxide Hydroxylic acid Dihydrogen oxide

taxonomical properties:

formula: H₂O

appearance: Almost colourlessOdor: odorless

melting point: 0.00 °C

boiling point: 99.98 °C



fig no.15: water ^[27].

- ☐ In the context of cosmetics, water has been called "the universal solvent." Water can be combined with "thicker" components, including butters and oils, together with emulsifiers to help create emulsions that can be used to make creams and lotions.
- ☐ water is necessary for the extraction and production of many natural raw materials; occasionally, it is combined with other solvents like glycerine or ethanol for this purpose.
- ☐ Water is mostly utilized as a solvent in cosmetics and other personal care products, dissolving many of the components, like conditioning and cleansing agents, that provide benefits to the skin.
- ☐ Water also creates emulsions, which blend the product's water and oil components to create creams and lotions.^[26]

8). Methyl paraben:

Other names

- ☐ Methyl paraben;
- ☐ Methyl p-hydroxybenzoate;
- ☐ Methyl Para hydroxybenzoate;



Fig no.16: Methyl paraben^[29].

One of the parabens, methyl paraben, has the chemical formula $\text{CH}_3(\text{C}_6\text{H}_4(\text{OH})\text{COO})$, which makes it a preservative. It is p-hydroxybenzoic acid's methyl ester.^[28]

9). Honey:



Fig no.17: Honey^[30]

The most famous type of bees are honey bees, although other bees can also produce the sticky, delicious substance known as honey. Bee colonies are fed via the production and storage of honey. The sugary secretions of plants, usually flower nectar, or other insects, such as aphid honeydew, are collected and refined by bees to generate honey.

Uses:

- ☐ Anti inflammatory
- ☐ Anti-oxidant
- ☐ Antibacterial
- ☐ Best exfoliator^[31].

10). Triethanolamine



Fig no. triethanolamine^[21].

The chemical formula for triethanolamine, also known as TEOA, is $N(CH_2CH_2OH)_3$. It is a viscous, colourless liquid. It is a triol as well as a tertiary amine. A molecule with three alcohol groups is called a triol.

Uses:

- ☐ active component used to stabilize and balance the pH of formulations without affecting the skin.
- ☐ This component enhances the product's texture and its ability to work with skin.^[33].

➤ Methodology:

The main ingredient used in essential oils scrub is poppyseeds (khuskhus) they were collected from

local market. Beet root powder was obtained by oven drying process, peppermint oil was obtained by performing steam distillation orange powder orange powder was obtained by crushing the shade dried peels of oranges, rosemary essential oil was obtained from.

Formulation And Development Essential Scrub:

Ingredient		Quantity	
		B1	B2
Phase A	Methyl paraben	0.2	0.2
	Almond Oil	1ml	1ml
Phase B	Triethanolamine	1	1.5
	Water	q. s	q. s
	Glycerine	4	4
	Methyl paraben	0.2	0.2
Phase C	Sodium lauryl ether sulphate	0.5	0.7
Phase D	Poppyseeds	2gm	2gm
	Beetroot powder	2gm	2gm
	Orange powder	1gm	1gm
	Rosemary oil	0.5ml	0.5ml
	Peppermint oil	0.2ml	0.2ml
	Honey	2ml	2ml

Procedure:

Method for Setting Up a Face Scrub Base:

1. Accurately weigh each component of Phases A and B.
2. Reach a temperature of 75–80°C by heating Phases A and B independently in a water bath. Stirring constantly, add Phase A to Phase B.
3. Then, transfer the mixture to a mortar and thoroughly triturate to create an emulsion. In a mortar, add Phase C after trituration.
4. To create a homogenous emulsion, add Phase D at 45 °C last and thoroughly triturate.

5. Creating and Getting Ready for Face Scrub
6. Active (exfoliant) was added to Face Scrub Base Batches B1, B2, and during the formulation process.
7. Two distinct exfoliants were used in this study: beetroot powder and poppyseed powder are natural exfoliant used.
8. Mix the mixture of scrub cool it
9. Store in cool dry place.

➤ **Quality control test:**

Evaluation Parameters:

Colour: The colour of the face scrub can be checked visually.

Odour: The odour of the scrub is checked by smelling it.

pH: The pH of the product can be checked by applying it on ph. paper.

Consistency: Consistency can be determined manually.

Spreadability: $S = m \times l / t$

S=Spread ability m=Weight placed on slide l=Length of the glass slide t= Time taken in seconds

Irritability:

Small amount of the scrub can be applied on the skin and kept for few minutes and found to be non-irritant.

Washability: Formulations can be applied on the skin easily remove by washing with water is checked manually **Grittiness** The product can checked for the presence of any gritty particles by applying it on the skin

Stability studies:

The stability of the formulation can be tested by filling the scrub in plastic containers and placing it in humidity chamber at 45°C and 75% relative humidity. The stability of the formulation can be inspected for 3 months at interval of one month each.

➤ **Conclusion:**

The aforementioned findings indicate that the new scrub formulation is risk-free to use and that the beetroot powder works well as a scrubbing agent. Since most of the ingredients are natural, the likelihood of negative effects is minimal. All skin types, including normal, oily, and dry, can use it. Better outcomes are obtained, and the skin appears brighter and more radiant. After applying a small amount of anti-oxidant.

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