



Quality Aspects of Herbal Drugs and Formulation of Herbal Face Scrub

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ABSTRACT

Many of the marketed products when applied on the skin cause dryness of skin after its long-term use Which results less life of skin problems of acne and redness. Solution for this problem is use of scrub Which consist of all herbal ingredients which increases cleansing, softening, moisturizing, fairness of skin. The use of natural ingredients to fight against acne, wrinkles and also to control secretion of oil is known as natural or herbal cosmetics. Herbal cosmeceuticals 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.

In today's life for both women and men cosmetics plays an important role to glowing and altering the appearance of skin. The study's goal is to develop an herbal face scrub. The skin on the face is frequently in contact with dirt, pollution, and other pollutants. The scrub contains Natural ingredients that are safe to use and have anti- depilation, antibacterial, anti-infective, antioxidant, and anti-aging qualities. The primary goal of this study is to create an herbal facial scrub utilizing natural ingredients to prevent and fight against numerous skin problems, as well as to control oil secretion on the Skin's surface. To treat all of these issues and de-tan the face, uses scrub made entirely of natural substances that improves washing, softening, moisturizing, and Skin fairness.

The use of natural ingredients to remain healthy and of good appearance the skin surface requires frequent cleansing to remove oil, sebum and other secretions, dead cells, crusts, and applied make-ups. The objective of this work to formulate and evaluate herbal face scrub for skin exfoliation & glowing skin by using natural ingredients with varying concentration¹.

Keywords: Herbal Face Scrub, Nagarmotha, Herbs, Preparation, Evaluation.

INTRODUCTION:

Some people are born attractive, while others are created to look beautiful. Those of herbal products have expanded dramatically in the current circumstances. Demands for herbal products are increasing day by day due to the great health benefits of synthetic components, which contribute to environmental destruction. Individuals' confidence can be increased by using skin care products. Women were supposed to be the main consumers of skin care products, but males are now just as concerned about their appearance. A balanced diet should be consumed to keep the skin healthy. Environmental variables such as UV radiation, pollution, dust, and climatic fluctuations will exacerbate skin problems. Herbal products come in a variety of forms, each with their unique function on the skin. Skin gets dull and lacks luster due to a variety of factors, which can be efficiently addressed with the use of scrubs. On the skin, there are two types of scrubs: facial scrub and body scrub. It exfoliates the skin and eliminates dead skin cells. Scrub can be used on any skin type.

There are many different sorts of cosmetics, and each one affects the skin in a different way. Skin attributable to a number of factors and these can be successfully treated with the application of scrubs. Two different types of scrubs are used on the skin, including face scrub and body scrub. The only difference between these two is how much sugar and oil are put to each. Face scrub uses a lot of oil, which makes it less abrasive It removes dead skin cells from the skin and exfoliates it. Scrub can be applied to any skin type. Only the essential oil utilized as an ingredient in the scrub will change depending on the kind of skin.

Skin Anatomy:

Skin has its own unique anatomy and that describes and determines its behavior and explains How it functions the way it does. Understanding skin anatomy also helps to put in context and Clarify the common skin disorders reviewed in later section of this paper. It also helps to identify Skin components which are dysfunctional and to plan for the right treatment. With the current Interest of the authors, two main layers of skin namely Epidermis and Dermis. The body's largest organ is the skin. It acts as a key organ of protection for other body parts. The skin serves as a barrier to protect the inside from external dangers like the corrosive effects of the sun, wind, and pollution as well as dirt and germs that are present in daily air. The health of a person can also be determined by their skin, another sensory organ.

Parts of skin:**Epidermis:**

Human skin consists of three layers as shown in Figure.2 and the outermost is called epidermis, giving the color skin that people see. Epidermis gives the first impression of a person and often the basis for categorizing people as fair or dark skin. Hence, the psychological effect of epidermis on people having skin disorders is tremendous. Epidermis is the thinnest layer of skin with Approximately 0.01 cm thickness.

Dermis:

Dermis is the middle layer of human skin sandwiched between epidermis and hypodermis. Dermis lies on the subcutaneous tissue in hypodermis that houses lipocytes which are small lobes of fat cells. There are two main layers in dermis called papillary region, adjacent to epidermis, and Reticular dermis, next to hypodermis. The main constituents in dermis are collagen, elastic fibers, And extrafibrillar matrix.

The supporting matrix is the basis of the dermis where protein and Polysaccharides are bonded together to produce macromolecules, responsible for retaining water Capacity of skin. Dermis plays important roles in providing mechanical support and nourishment to human skin.

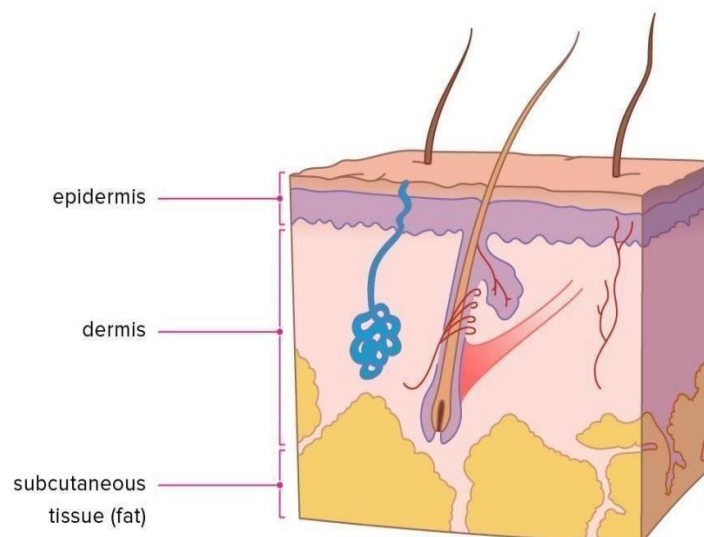


Fig no 1: Anatomy of Skin

1 Common Skin Disorders:

With prior knowledge of skin anatomy in the above paragraph discussed skin disorders. Skin disorders are related to the dysfunction of skin components or the layer's defect of human skin which can manifest as irritation and itchiness in some cases. Specific defects in enzymes, structural proteins or lipid metabolism have been identified as the Root cause of skin disorders in most of the cases. There are also stratum corneum defects which May lead to protein or lipid abnormalities of barrier function defect, which in turn may lead to an Increasing trans epidermal water loss. This unwanted condition eventually affects the integrity of skin. On an outward perspective, skin diseases can be categorized into three: Dry Skin (Eczema, Xerosis, Atopic Dermatitis and Psoriasis), Hyperpigmentation (Post- Inflammatory, Vitiligo and Melasma) and Acne.²



2 Herbal face scrub:

Ideal Properties of Scrub: An ideal scrub is accepted to possess the following properties. It should be-

- Nontoxic.
- Possess small gritty particles.
- Mild abrasive.
- Non irritating.
- Nonstick.
- Able to remove dead skin cells.

3 Benefits Of Scrubbing Skin:

Frees Your Skin from Flakes: Flaky skin gives rise to dry patches. It allows dead cells to accumulate over time. Scrubbing your skin can help you deal with flaky skin effectively.

Helps in Removing Dead Cells: Dead cells make your skin look dull and tired. Scrub them off with a gentle scrub.

Adds Glow to Skin: Exfoliation can make your skin glow.

Removes Dark Patches: Use scrub twice a week to get a good result. It is especially effective on knuckles, elbows, and knees.

Removes Acne Scars: Exfoliation helps in doing away with acne scars.

For Smooth Skin: Smooth skin is the key to a more beautiful you. The scrub will not only make your skin look flawlessly smooth but will also make it soft and well- Nourished.

Improves the Texture of Your Skin: Scrubbing your skin gives you clean and smooth skin with an improved texture.

Promotes Clear Complexion: As soon as the flakes, dead cells, blemishes, and accumulated impurities are done away. The scrub has a natural skin whitening ingredient.

4 Advantages:

- Rejuvenation of the skin.
- Deals with flaky skin.
- Removes dead skin.
- Imparts glow to the skin.
- Removes scar.

5 Disadvantages:

1. Chemicals and hard-scrubbing motions may irritate the skin and result in redness and inflammation.
2. People with delicate skin may experience allergic reactions to the ingredients in synthetic scrubs.
3. Excessive cleaning can leave pores open, exposing skin to both UV radiation and debris³.



Fig 2: Face scrub used on face

6 Objective:

1. To remove Acne and blemishes and add moisture to the skin.
2. Gets rid of the problem of dry skin while also providing the skin with much needed nourishment.
3. To remove dead cells that can clog your pores.
4. It helps in exfoliating your skin.
5. To prevent Ingrown Hair.
6. To improves the texture of skin.
7. To provides Smoother skin.³

7 Authentication of Nagarmotha:

The nutgrass (*Cyperus rotundos*) is a slender, erect, perennial sedge which spreads by means of a fibrous root system. It is slender, underground, known as rhizomes, are initially white, fleshy, and covered with scaly, modified leaves, but become brown and woody with age. On reaching the surface, a rhizome may swell into a small, rounded structure called a (basal bulb), from which shoots, roots and further rhizomes arise. The rhizomes of the nutgrass also form tubers, which store starch as a food reserve and can give rise to new rhizomes or new plants. The tubers measure around 1 to 3.5 cm in length and are white and succulent when young, later turning brown and hard. The shape of the tubers gives the nutgrass its scientific name, (rotundas), meaning (round). The stems of the nutgrass are smooth and erect, usually reaching around 30 to 40 cm in height, and are triangular in cross-section. The leaves originate from the base of the plant and are arranged on the stem in groups of three. They are smooth, shiny and dark green, with a grooved upper surface and a sharp tip, and are long and narrow, 20 to 30 cm in length and 0.2 to 1 cm in width. The flowers of this species are borne in clusters (inflorescences) at the ends of the stems. The inflorescence consists of around three to nine stalks of varying lengths, at the ends of which are reddish-brown to purple (spikelet's). The color of the spikelet gives the nutgrass its alternative name of (purple nutsedge).

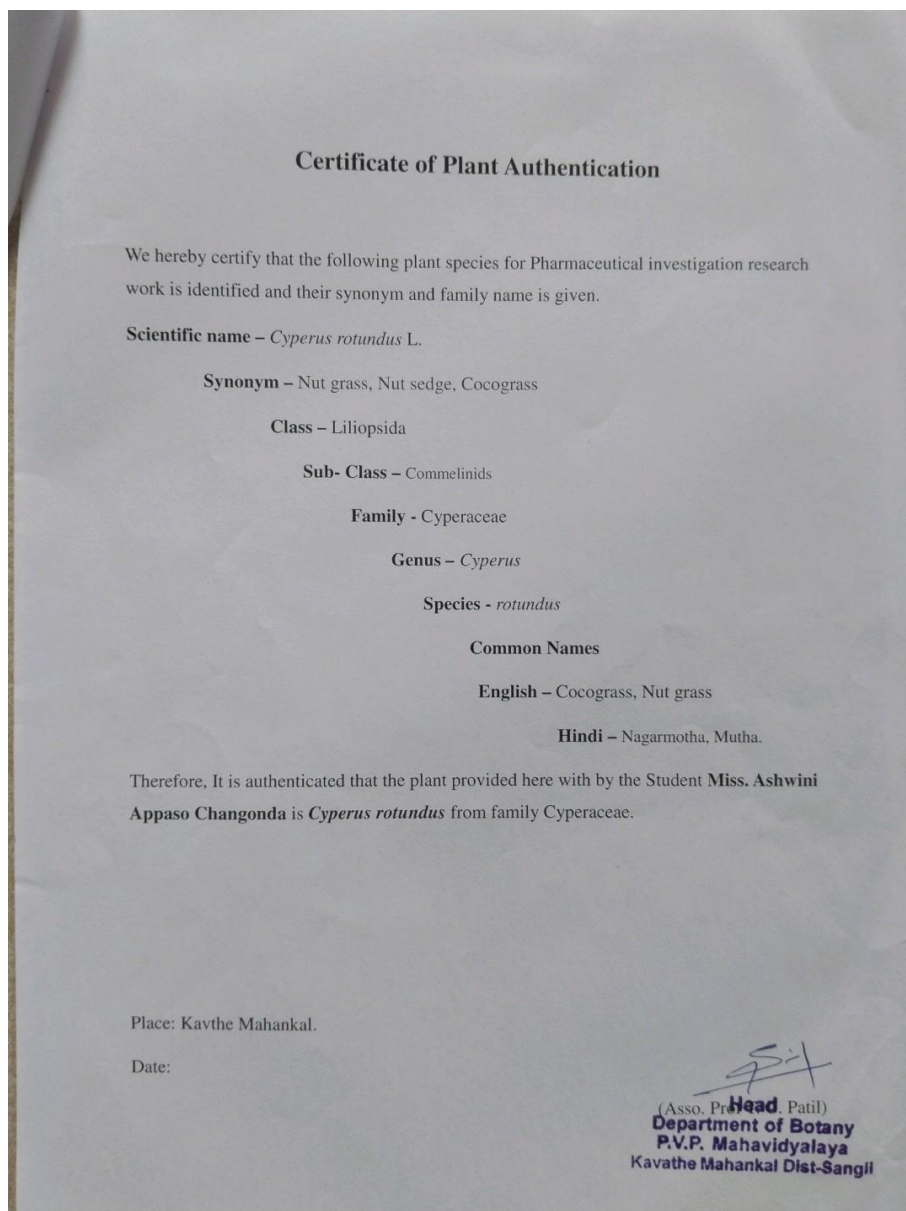
Each spikelet 3.5 cm in length and consists of 10 to 40 flowers, which lack petals, but instead sit within dry, membranous, oval-shaped bracts, known as (glumes). The nutgrass produces a dry, single-seeded fruit, which is up to two millimeters long, and brown to black with a network of grey lines⁴.



Fig: 3 Rhizomes of Nagarmotha

Authentication:

Information	
Botanical Name- <i>Cyperus rotundus</i> L.	
Kingdom – Plantae (Plants)	
Division – Angiosperms	
Class – Liliopsida	
Sub – Class – Commelinids	
Order - Poales	
Family - Cyperaceae	
Genus - <i>Cyperus</i>	
Species - <i>rotundus</i>	
Common Names	
Hindi	Nagarmotha, Ambuda
English	Cocoglass, Nutgrass, Nut sedge
Sanskrit	Chakrankasha, Ambuda
Urdu	Saad kuf
Arabic	Soad, Soade kufi
Bengali	Moothoo, Musta
Gujarati	Nagarmothya
Distribution	It is all over distribution in india.
Specimen Collected From	In the local area of Kavathemahankal Dist- Sangli, Maharashtra
Morphology	It is highly variable perennial sedge. Flowering stem are erect. Up to 60 cm tall, 3 sided smooth with swollen bases. Leaves have distinct midrib are linear usually shorter up to 7 mm wide. Plants die back to the ground in fall, with new shoots emerging in spring from underground tubers white, fleshy rhizomes up to 25 mm in dimension.
Chemical Constituents	Leaves- luteolin, kaempferol, Sugeonyl acetate. Rhizome- Cyperene, Isocyperol. Stem- flavonoids, Cyperotundone.



8 Herbs profile:

9 Herbs Used in Scrub:

1. Nagarmotha:

Scientific name – *Cyperus Rotundas*

Chemical constituents – sesquiterpenoids, luteolin, cyperene, Quercetin. Use - useful for moisture the skin, and cure the acne, blisters of Skin.⁶



Fig 4: Powder of Nagarmotha rhizomes.

2. Rose:

Scientific name – *RosaRubiginosa*. Chemical constituents – Tannin, flavonoids, Triterpenes Use - remove excess oil and makes the skin clean.⁵



Fig 5: Powder of rose flowers.

3. Aloe vera:

Scientific name – *Aloe Barbedensis Miller*. Chemical constituents – aloin, salicylic acid, lignin. Use – It softens the skin and brightens the skin.



Fig 6: Aloe vera gel.

4. **Lemon:**

Scientific name – *Citrus lemon* Chemical constituents – citric acid, linalool, citronellal, limonene. Use – To lighten the skin, reduce the blemish.



Fig 7: Lemon juice

5. **Reetha:**

Scientific name -*Sapindus Mukorossi* Chemical constituent – saponin, sugar

Use - It has natural conditioning property and prevents the skin dryness.⁷



Fig 8: Powder of Reetha fruit

6. **Fenugreek:**

Scientific name – *Trigonella foenum graceum*. Chemical constituents – isovitexin, saponin, Quercetin Use – it mainly removes dead cells.



Fig 9: Powder of fenugreek seed

Formulation Table:**Table No. 1 Formulation Table**

SR No.	Ingredient	F1	F2
1.	Aloe vera	10 gm	12 gm
2.	Rose powder	1.5 gm	1.5 gm
3.	Fenugreek powder	1.5gm	1 gm
4.	Nagarmotha powder	2 gm	2.5gm
5.	Reetha powder	1 gm	1 gm
6.	Lemon juice	3.5 ml	2 ml

10 Formulation of scrub:**11 Preparation Of Herbal Face Scrub:**

For the preparation of herbal scrub, I have selected the important ingredients such as Aloe vera, Nagarmotha, Fenugreek, Reetha, Lemon juice, Rose etc.

All ingredient collected from the local area.

Collected the rhizomes of Nagarmotha plant, dried it and grinded it into a grinder to make a powder.

Also, fenugreek seed grinded to convert it into powder.

All the required powder mixtures were precisely weighed. And mixed properly.

Two batches (F1 and F2) of herbal face scrub with an average weight of 20gm prepared properly.

Once satisfied with the consistency and fragrance of your scrub, spoon it into a container⁹.

**Fig 10: Formulated facial herbal scrub.****12 Evaluation parameters of herbal face scrub:**

color: The color of the herbal face scrub was checked visually.

Odour: The formulation was evaluated odour by smelling it.

Washability: Formulations were applied on the skin easily removed by washing with water were checked manually.

Irritability: Small amount of the herbal face scrub was applied on the skin and kept for few minutes and found to be nonirritant.

Grittiness: The product was checked for the presence of any gritty particles by applying it on the skin.

PH: pH of the prepared face scrub was evaluated. A small amount of the herbal face scrub was applied on the pH paper.

Spreadability: Small amount of the herbal face scrub was placed on the glass slide and another glass slide was placed on the herbal face scrub. Then the slide is pressed with some amount of force. time required for the herbal face scrub to spread, and the area was measured. The amount and the area of scrub on the glass slide represents the efficiency of spreadability.

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

Whereas S = Spreadability m = Weight placed on slide l = Length of glass slide

t = Time taken in seconds

13 Results and discussion:

The formulation was prepared by mixing all ingredients properly with each other. All the evaluated parameters of scrub were studied properly are listed in table no.2. All evaluation tests give correct results. The formulated herbal face scrub was in brown color. The Washability, irritability, Grittiness, pH, and Spreadability were shown in table no.2.

Table no.2 evaluation parameters of Nagarmotha

Sr no.	Evaluation Parameters	F1	F2
1.	color	Brown	Brown
2.	Odor	Pungent	Pungent
3.	Washability	Easily washable	Easily washable
4.	Irritability	Non irritant	Non irritant
5.	Grittiness	Small gritty particles	Small gritty particles
6.	PH	6.9	7.1
7.	Spreadability	5.2 g. cm /sec	5. g. cm/sec



Fig 11: PH of formulation



Fig 12: Washability test

**Fig 13: Irritability test - Nonirritant to skin****Fig 14: Grittiness of scrub**

14 Conclusion:

The present study attempted to make an herbal face scrub. The prepared scrub was compared with various parameters like color, odor, consistency, Ph, irritability, spread ability, wash ability 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 & glowing skin.

These all-natural ingredients were used, so that they had no side effects or fewer side effects. The prepared herbal scrub was found to be satisfied for the application on the skin to make it healthy and glowing. The application of scrub which helps to improve blood circulation and increases oxygen supply to all surface of the skin. After application of scrub skin becomes softer, cleaner and refreshed.

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Conflict of Interest Statement:

The authors have no conflicts of interest to declare.

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