

FORMULATION AND EVALUATION OF POLY HERBAL FACIAL SCRUB

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ABSTRACT

Natural beauty is a blessing, and cosmetics aid in displaying and enhancing human attractiveness and individuality. Cosmetics are described as items used for beautifying, washing, boosting attractiveness, or changing one's look. The purpose of this study is to create and assess a Polyherbal face scrub that may be used as an alternative to chemical products. Natural ingredients are used in herbal cosmetics because they have the ability to work against wrinkles, acne, and to regulate the flow of oil from the skin's open pores. Natural elements are the safest and greatest products to use in everyday life since they have no negative effects, and these cosmetics also benefit the environment. In this formulation of facial scrub Amla, Honey, Aloe-vera, Turmeric, Green tea, Coconut oil, Carrot powder, Rice flour, Walnut, Rose water are used as active ingredients. Except

beautification this cosmetic product helps in many pharmaceutical ways like Skin Exfoliating agent, Antioxidant, Antitanning, Anti-inflammatory, Moisturizer, Antiageing, and Acne Removing agent. The prepared facial scrub was evaluated for various parameters such as Appearance, State, Consistency, pH, viscosity, Spreadability, Foamability, Washability, Irritability, Homogeneity, Grittiness and all needed characterizations were judged to be satisfactory. As a result, this composition may be used as an effective face scrub to maintain healthy and beautiful skin. Herbal cosmetics are fast expanding since most women choose natural alternatives over artificial items for personal care.

KEYWORDS:- Polyherbal Face Scrub; skin exfoliating agent; Herbal Cosmeti; Anti Oxidant; Anti Ageing.

INTRODUCTION

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. Cosmetics are widely used to improve attractiveness and available in a many of forms like Skin protection, sunscreen, anti-acne, and anti-wrinkle products for skin beautification. The term Herbal Cosmetic implies that herbal cosmetics are entirely natural and free of all dangerous synthetic ingredients that would otherwise be hazardous to the skin. Face scrubs exfoliate and stimulate blood circulation and promotes skin turnover by removing dead skin cells and adherent cells in the stratum corneum. Face scrub washes the skin eliminates the debris and oil from pores, accelerates the renewal of skin cells. There are three different varieties of skin, including dry skin, oily skin, and sensitive skin. Because dead skin cells are eliminated by using scrub on daily basis, new skin cells are exposed, resulting in skin that is glowing, soft, and healthier. After using scrub, it is recommended as to gently massage on the skin to promote blood flow and improve oxygenation of the skin's surface.

Facial scrub is a cosmetic or a beauty product or a treatment which cleanses and exfoliates the skin of the face or body. Facial scrubs are beneficial to remove dirt, skin cells and sebum or oil, blackheads and Whiteheads. It helps to maintain skin appearance.

There are three kinds of skin types, oily skin, sensitive skin and dry skin. For a person with dry skin must use the facial scrub, which contains the moisturizing and hydrating ingredients. If the person is having sensitive skin, he or she should use gentle scrub. And the person with oily skin should be using an exfoliation which prevents pimples dullness and breakouts and helps to control oiliness.

Depending on the skin types facial scrubs are advised to use twice or thrice a week. But for the newbies, facial scrubs are recommended to use weekly. People with dry or sensitive skin types should only exfoliate one or two times a week. In some conditions, people with acne prone skin are recommended to use products containing salicylic acid and dermatologist-grade 4% glycolic and polyhydroxy acid complex. This helps to exfoliate skin and clear acne with giving smoother appearance.

Benefits of scrubbing skin

1. Helps in removing dead cells: Facial or body scrubs are the cosmetic which goes beyond surface level to remove dead skin and reveal the healthy glowing skin below.

2. Free the skin from flakes: Loss of upper layer of skin (epidermis) is called as flaky skin. It gives rise to dry patches. Scrubbing your skin can help you to deal with flaky skin effectively.
3. Deep cleaning of skin: Scrubbing your skin helps skin to get free from dirt, oil and sweat. Other cleansing like face wash facial cleansers cannot clean the skin.
4. Thoroughly removing dust accumulated in the course of the skin, scrubbing does this work effectively.
5. Clears blemishes: Accumulation of dead skin, can block the pores of skin and causes blemishes. Scrubbing frequently helps to remove dead skin and clears blemishes.
6. Gives glow to Skin and Smooth texture: Scrubbing actually helps to give glow and smooth texture to skin.
7. Remove the acne scars: As scrubbing used to remove dead skin cells, it also remove the acne scars from skin.
8. Promotes hydration of skin: Facial scrubs contain moisturizing agents and hydrating agents. Exfoliation of skin helps to absorb moisture and it leaves our skin with feeling soft and.
9. Reduces stress: Exfoliation or scrubbing the skin gives good massage, which gives relaxing feeling and reduces stress.

Ideal features of a face scrub

- It must be non-toxic, mildly abrasive as well as non-sticky.
- Dead skin cells and grime must be removed.
- It must be non-irritating.
- It must have minute grit in it.

Choosing scrub depending on skin

➤ For greasy skin

People with oily skin frequently battle with acne problems because their skin pores become blocked by extra sebum oil. Thus, a face scrub that not only removes the skin's dead cells but also has anti-pimple properties is necessary. The Salicylic acid's anti-acne abilities are widely known. If you have oily skin, you should get a face cleanser with salicylic acid or other anti-acne ingredients.

➤ ***For dry skin***

Anyone with dry skin can use any facial cleanser that has ingredients meant to eliminate dead skin cells. Glycolic acid is one such chemical that swiftly gets rid of flaky skin and dead skin cells. It is a renowned and effective exfoliator. Look for a face scrub with glycolic acid that hydrates the skin while also improving it.

➤ ***For sensitive skin***

Those who have sensitive skin should use greater caution while selecting skincare products. The ideal facial cleanser for sensitive skin is one that is both antibacterial and anti-inflammatory. Propylene glycol possesses both bacterial and fungal resistance. Organic foods with anti-inflammatory effects include yoghurt and turmeric. For sensitive skin, sugar scrubs are regarded as good. With the use of sugar, a natural skin exfoliant, dead skin cells may be readily removed.

➤ ***For combination skin***

Because combination skin is a mix of dry and greasy skin, selecting a face scrub may be difficult. However, advise those with mix skin to use a face scrub to eliminate surplus oil without drying out skin surface.

Literature review

1. Skin care with herbal exfoliants

(Nilani Packianathan, Ruckmani Kandasamy: Skin Care with Herbal Exfoliants, Functional Plant Science and Biotechnology, 2010; 5(1): 94-97.

The given article gives the different types of exfoliation methods such as manual or mechanical skin exfoliation, chemical exfoliation, enzyme exfoliation. The formulation is from luffa, algae extract, grapefruit seed extract, apricot shell, cucumber extract, papaya extract, mung dal, pineapple extract, rosehip seed powder, cranberry, green tea, tree tomato. Herbal skin exfoliation is important part of general skin maintenance. It smoothens and chemically balances skin, unclogs pores and stimulates fresh cell growth, reducing blemishes, discoloration and wrinkles which helps the skin stays healthy and clean, hydrated and blemish free.

2. Formulation and Evaluation of multipurpose herbal scrub in gel from using limonia acidissima

(Mr. Vishal Ashok Chaudhari, Dr. Manoj V. Girase, Mr. Bhushan Gulab Borase, Mr. Shashikant Kailas Bhoi, Miss. Kalyani Ashok Chaudhari: Formulation and Evaluation of Multipurpose Herbal Scrub In Gel Form Using Limonia Acidissima, International Journal of Research and Analytical Reviews, 2020; 7(2)).

The Formulation is based on herbal scrub using limonia acidissima. The objective behind the study was to prepare multi purposeherbal scrub in the form of gel that are used for their medicinal and cosmetic properties and limonia acidissima is one of them. The valuable part of plant includes its roots, fruits bark and leaves which are used for various therapeutic purposes. Extractionof fruit parts were done and incorporated to gel phase. The formulation contains ethanol extract of Limonia acidissima fruit pulp which possess antioxidant, anti-aging, anti-wrinkle, skin tightening, lightening and brightening property. They can exfoliate skin without scratching skin surface by applying pressure on them. Suitable base materials such as gelling agents, preservative, neutralizer and foaming agents were selected and incorporated into extract to design a suitableherbal gel. The formulation wasevaluated using various parameters and found to be satisfied upon application to skin.

3. Clinical review of deep cleansing apricoat scrub

An herbal formulation: (Debbarma Dona, Moharana PK, Mishra Baidyanath, Ramana Vivekananda and W Dimple: Clinical Review of deep cleansing apricoatscrub:An HerbalFormulation, InternationalJournal of Bioassays, 2015; 4(9): 4251-4253.

Exfoliation to your skin care routine helps the natural shedding process of skin and encourages healthier, smoother more even-toned skin some of the big beauty benefits like acne prevention, smaller pores, wrinkles, etc. Herbal medicines have been extensively used in recent years for chronic and lifestyle related disorder. Deep cleansing apricot scrub is a proprietary & patented polyherbal formulation designed to deep cleanse the skin and makes it healthy and glowing.

Exfoliation involves the removal of the oldest superficial dead skin cells on the skin's outermost surface. Exfoliation can be achieved through mechanical or chemical means mechanical process involves physically scrubbing the skin with abrasive.

4. Antioxidant facial scrub from red dragon fruit extract

(Ligaya Taliana: Facial skin health: Antioxidant Facial Scrub From Red Dragon Fruit Extract, Journal of Asian Multicultural Research For Medical and Health Science Study, 2020; 1(2): 01-05).

Air pollution and UV rays are Sources of free radicals that are harmful to body. Radicals produced in the body. Can be neutralized by antioxidant that come from the body under normal circumstances, free facial scrub is a skin care. Cosmetic product that contains coarse granules or so called abrasive cosmetics which functions to remove dead skin cells and nourish the skin.

This type of facial treatment is type of treatment generally chosen by some women's. Facial is a procedure to clear facial skin from all types of facial treatment impurities. Such as pimples, Whiteheads, blackheads and others.

OBJECTIVES

The main objective of present study was to prepare a herbal facial scrub. In this formulation of herbal facials scrub, we used rice flour and carrot powder as a active ingredient and honey, amla powder, coffee, rose water, aloe vera, turmeric etc are other ingredients used in this facial scrub formulation. Different evaluations tests are carried out for the prepared herbal facial scrub formulation, such as appearance, spreadability, irritability, PH, washability, etc.

Prepared formulation passes all the given evaluation tests. Thus, the prepared formulation of herbal facial scrub was effective for healthy, clear and glowing skin.

Ingredients and Their uses

1. Rice flour



- **Synonym-** Orzya sativa.
- **Biological source-** It is the seed of the grass species orzya sativa or orzya glaberrima.
- **Family-** Gramineae (Poaceae).

- **Description**

Colour- It is white, long grained.

Odour- Characterstic.

Taste- Bland.

- **Chief chemical constituents-**Rice is composed of amylose and amylopectin.
- **Uses-** oil- retaining properties, potent skin clearing agent, reduce UV damage, prevent skinaging, Anti- inflammatory agent

2. Carrot powder



- **Synonym-** Gajor, Daucus carota sativa.
 - **Biological source-** Carrot paucus carota is a rootvegetable, usually orange in colour.
 - **Family-** Apiaceae.
 - **Description**
- Colour- Orange.
- Odour – Spring.
- Taste- Bitter or soapy
- **Chief chemical constituents-** Carotens, especially alpha and beta carotenes, vit. A and C anddietry fiber. Red carrots contains lycopene.
 - **Uses-** To produce a natural color, reduce inflammation, brighten skin.

3. Amla powder



- **Synonym-** Indian Gooseberry, Amalaki, Emblica.
- **Biological source:-** It is obtained from dried and fresh fruits of the plant *Emblica Officinalis*.
- **Family-** *Phyllanthaceae*.
- **Description**
Colour- Brown.
Odour- Acidic Astringent.
Taste- Slightly Bitter and Sour.
- **Chief chemical constituents-** The fruit of amla is rich in vitamin C (Ascorbic acid) and contains higher amount of polyphenols.
- **Uses-** Anti-oxidants, helps to reduce dark Spots and Hyper pigmentation and restore natural glow of skin, eliminates dead skin cells.

4. Honey



- **Synonym-** Madhu, Honey purified, Madh, Madhvika.

- **Biological source-** Honey is sugary substance deposited in the honeycomb by the bee *Apis mellifera*.
- **Family-** Apidae.
- **Description**
Colour- Pale Yellow to reddish brown.
Odour- Pleasant and characteristic.
Taste- Sweet, slightly acrid.
- **Chief chemical constituent-** Glucose, fructose, sucrose, dextrin, formic acid, succinic acid, gums.
- **Uses-** Demulcent, antiseptic, antioxidant, vehicle for ayurvedic formulation, anti-inflammatory, topically to treat burns, sweetening agent and promote wound healing.

5. Aloe vera



- **Synonym-** Aloe; Ghritakumari.
- **Biological source-** Dried juice collected from incision from the bases of the leaves of *Aloe Barbadensis* or *aloe officinalis*.
- **Family-** Liliaceae.
- **Description**
Colour- The leaves are grey to green.
Odour- Penetrating odour.
Taste- Nauseous and bitter.
- **Chief chemical constituent-** Aloe-emodin is main constituent. It also contains vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.
- **Uses-** Moisturize skin, treat various skin conditions, including acne, eczema, and sunburn, anti-cancer, anti-oxidant, anti-diabetic.

6. Green Tea



- **Synonym-** Camellia sinensis.
- **Biological source-** It contains of leaves of camellia sinensis that have undergone minimaloxidation during processing.
- **Family-** Theaceae.
- **Description**
Colour- Dark green.
Odour- Characteristic.
Taste- Slightly bitter and astringent flavor.
- **Chief chemical constituents-** Phenols, alkaloids, Flavoniods, tennins and steroids. Catechins like epigallocatechin gallate (EGCG), epigallocatechin (EGC), epicatechin-3-gallate and epicatechin (EC).
- **Uses-** To treat flatulence (gas), regulating body temperature and blood sugar, anti-inflammatory properties to reduce skin irritation, skin redness, and swelling.

7. Turmeric



- **Synonym-** Haldi, Haridra, Curcumin.
- **Biological source-** Turmeric consist of dried as well as fresh rhizomes of the plant *Curcuma longa*.
- **Family-** Zingiberaceae.
- **Description**
Colour- Brilliant yellow.
Odour- mildly aromatic.
Taste- Pleasantly bitter and earthy.
- **Chief chemical constituents-** Non-volatile curcuminoids and the volatile oil; Curcuminoids contain curcumin, demethoxycurcumin, bisdemethoxycurcumin.
- **Uses-** Anti-septic; traditionally used for disorders of skin; anti-inflammatory; fights free radical damages.

8. Walnut



- **Synonym-** Juglance.
- **Biological source-** It is obtained from the edible seed of any tree of the genus *Juglans*, particularly the Persian or English walnut, *Juglans regia*.
- **Family-** Juglandaceae.
- **Description**
Colour- Light brown to dark chocolate with some blonde or yellow as well.
Odour- An aromatic smell similar to the smell of citrus lemon-lime soda.
Taste- mild, earthy and a little tangy.
- **Chief chemical constituents-** Monounsaturated fatty acids (Omega 3), arachidonic acid, phyto-chemical substance.

- **Uses-** Exfoliate the skin, Removes dead skin cells, Removes blackheads and whiteheads, Restores freshness, reduce scars, reduce dark spots.

9. Coconut Oil



- **Synonym-** Coconut butter, Copra oil.
- **Biological source-** Coconut oil is the oil expressed from the dried solid part of endosperm of coconut, *Cocos nucifera* L.
- **Family-** Palmae.
- **Description**
Colour- White or pearl white.
Odour- with peculiar coconut odour.
Taste- Bland.
- **Chief chemical constituent-** Mix. of triglyceride of saturated fatty acid, caprylic acid, capric acid, lauric acid, myristic acid.
- **Uses-** Nourish dry and cracked skin, replenishing lost moisture and strengthening the skin barrier to retain it.

10. Rose water



- **Synonym-** Attar of rose, lavender water, scented liquid.
- **Biological source-** Rose water is obtained from sepals and petals of *Rosa damascena* through steam distillation.
- **Family-** Rosaceae.
- **Description**
Colour- a light pink-blush color.
Odour- exactly like fresh petals.
Taste- Predominantly floral flavor that is not quite savory, and not quite sweet.
- **Chief chemical constituent-** The volatiles mainly consist of 2- phenylethanol, linalool, citronellol, nerol, geraniol, etc.
- **Uses-** Smoothens skin irritation, reduce skin redness, heals cuts and scars, treat burns.

11. SLS

- **Synonyms-** lauryl sodium sulphate, sodium salt.
- **IUPAC name-** Sodium dodecyl sulphate.
- **Molecular formula-** $C_{12}H_{25}NaO_4S$.
- **Molecular weight-** 288.38 g/mol.
- **Description**
Colour- White or cream to pale yellow-coloured crystals, flakes, or powder.
Odour- Faint odour of fatty substances.
Taste- A soapy, bitter taste.
- **Uses-** Anionic emulsifier, as detergent in medicated shampoos, Skin cleanser in topical applications.

12. Methyl paraben

- **Synonym-** Methyl paraben, Methyl p-hydroxybenzoate, Methyl Para hydroxybenzoate, 4-hydroxybenzoic acid methyl ester.
- **IUPAC name-** Methyl-4-hydroxybenzoate.
- **Molecular formula-** $C_8H_8O_3$.
- **Molecular weight-** 152.15 g/mol.
- **Description**
Colour- Colourless crystals or a white crystalline powder.
Odour- Odourless.
Taste- A slight burning taste.

- **Uses-** It prevents germ growth, used as preservative.

13. Glycerin

- **Synonym-** Sugar alcohol, polyol, glycerol.
- **IUPAC name-** Propane-1,2,3-triol.
- **Molecular formula-** C₃H₈O₃.
- **Molecular weight-** 92.09382 g/ mol.
- **Description**

Colour- Colourless.

Odour- Odourless.

Taste- Sweet taste and non-toxic.

- **Uses-** Act as moisturizer, as a sweetnar in food and beverages, as a solvent.

Formulation

Sr. No.	Constituents	Quantity	Category
1.	Rice Flour	5 gm	Scrubbing agent
2.	Carrot powder	1 gm	Anti-aging and Skin whitening
3.	Amla powder	1 gm	Anti-oxidant
4.	Honey	0.4 ml	Anti-septic
5.	Green tea	0.2 gm	Scrubbing agent
6.	Aloe vera	1 ml	Anti-oxidant, Soothing and cooling action
7.	Turmeric	0.5 gm	Anti-septic, Anti-bacterial and Anti-inflammatory
8.	Walnut	1 gm	Moisturizer and Soothes skin
9.	Coconut oil	0.2 ml	Moisturizer
10.	Rose water	Q.S.	Perfume
11.	Sodium Lauryl Sulphate (SLS)	0.4 gm	Foaming agent
12.	Methyl paraben	0.3 ml	Preservative
13.	Glycerin	1 ml	Emollient

Method of preparation

- Weighed carefully all the herbal powders, such as green tea, amla, carrot powder, rice flour, and walnut, sieved through 120, and mixed them together with mortar and pestle to produce a homogenous mixture.
- Weighed fuller's earth, turmeric powder, honey, sodium lauryl sulphate, and methyl paraben precisely and triturated them to produce a homogenous mixture. In that combination, add previously made herbal medicine and triturate to get a consistent face scrub drug powder.

- In a mortar and pestle, combine coconut oil, glycerin, and aloe vera gel (As a basis), then triturate all of the herbal powder to achieve a paste-like consistency.
- Rose water was used to provide aroma.



Evaluation parameter

- **Colour** - Visual inspection revealed a yellowish brown face scrub.
- **Odour** - Sweet and simple syrup like odour is obtained.
- **State** - Semisolid state of scrub.
- **Consistency** - Consistency was found to be smooth with visual observation.
- **pH** - pH was to be 4-6.
- **Spreadability** - It determines the spreadability of the gel on the skin. A small amount of material was placed on a glass slide, followed by another slide placed over them. Amount of weight placed on slide, spread on slide, and time taken for spread are all measured.
- **Homogeneity** – Smooth consistence.
- **Irritability** – Small amount of gel applied on skin and kept for few minutes and found to be non-irritable.
- **Grittiness** – Few gritty particles observed in formulation.
- **Washability**- Small quantity of gel applied on skin and wash with water after few minutes found to be washable with water.

RESULT

- Polyherbal facial scrub was successfully formulated and evaluated.
- The formulation prepared is very effective and having no side effects.
- The result of evaluated parameters are mentioned in following table:

Sr. No.	Parameter	Result
1.	Colour	Yellowish brown
2.	Odour	Maple syrup like, sweet
3.	State	Semisolid
4.	Consistency	Smooth
5.	pH	4-6
6.	Spreadability	Uniform
7.	Homogeneity	Smooth consistence
8.	Irritability	Non-irritant
9.	Grittiness	Small gritty particles
10.	Foamability	Foam volume 85 ml at 5minute
11.	Washability	Easily washable

CONCLUSION

In the current study, a herbal face scrub was developed and tested for several evaluation parameter. The results shown that the formulation complies the tests. The formulation was discovered to be suitable for application on the skin in order to make it healthy and brighten it without causing any negative effects. Natural and herbal cosmetics are simpler, safer, and more effective to use than other cosmeceutics on the market. The fact that herbal treatments can be used on all skin type is one of their primary selling points. Effectiveness and healthuier skin type are provided bypolyherbal face scrub. The antioxidant, antiseptic, antiaging effect of rice flour, amla, turmeric, walnut, green tea, carrot powder and aloe vera enhance the importance of use of polyherbal face scrub.

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