



Formulation and Evaluation of Polyherbal Facial Scrub

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ABSTRACT :

The main objective of present study was to prepare a polyherbal 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 cosmetics 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 cosmetics are the product which influences the biological function of skin. In this preparation fenugreek, coffee, coconut oil, rose water, turmeric, Aloe Vera gel, amla, honey, sodium lauryl sulfate, methyl parabens, glycerine is used as active ingredients and incorporated into the gel which is prepared with carbopol of different grades. The main objective of present study was to prepare a polyherbal 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.

Key words : Antiseptic, Anti- Infective, Antioxidant, Anti- aging and humectant, etc.

INTRODUCTION:

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.[1]

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.[2]

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.[3]

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 filling soft and .
9. Reduces Stress: Exfoliation or scrubbing the skin gives good massage, which gives relaxing feeling and reduces stress.[4]

Facial scrubs are solid or semisolid systems of at least two constituents, containing various natural and chemical ingredients which are safer to use and having fewer side effects and they also possess antiseptic, anti-infective, antioxidant, anti-aging and humectant properties.

The scrubs are made by simple mixing methods of two or more ingredients herbal or chemical such as honey, aloe vera, turmeric powder, Glycerine, Coffee powder, lauryl sulphate, anhydrous citric acid, etc.

OBJECTIVE

The main objective of present study was to prepare a herbal facial scrub. In this formulation of herbal facial scrub, we used fenugreek 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.

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.[5]

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 was evaluated using various parameters and found to be satisfied upon application to skin.[6]

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 apricoat scrub:An HerbalFormulation, International Journal 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 .[7]

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. [8]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.[9,10]

● Face scrub description.

There are two types of facial soap

1. Face wash.
2. Face Scrub.

Facial wash is used to clean the face from dirt and dust. Facial scrubs are used to help exfoliate dead skin cells. Scrub functions to remove dead skin cells on the surface of body's skin which is rough and dull.[11,12]

INGREDIENTS AND THEIR USES:● **Formula:**

Sr.No.	INGREDIENTS	QUANTITY	CATEGORY
1.	Aloe Vera	1ml	Antioxidant
2.	Honey	0.4ml	Antiseptic
3.	Fenugreek	5 gm	Scrubbing agent
4.	Amla Powder	1gm	Antioxidant
5.	Coffee	0.2gm	Scrubbing agent
6.	Sodium lauryl sulphate	0.4gm	Foaming agent
7.	Turmeric	0.005gm	Antiseptic
8.	Coconut oil	0.2ml	Moisturizer
9.	Methyl paraben	0.3ml	Preservative
10.	Glycerine	1ml	Emollient
11.	Rose water	Q.S.	Perfume

Table 1.1:Ingredients and their uses● **FENUGREEK :****Fig.1.1:Fenugreek seeds**

Fenugreek seeds are used for various cosmetic purposes.

It has various skin benefits such as:

- i. **Glowing Skin:** The presence of vitamin C in fenugreek seeds lightens the skin complexion and gives it a beautiful glow.[13]
- ii. **Cleanses Skin**
- iii. **Facial Toner**
- iv. **Exfoliates Skin:** It not only removes the dead skin cells but also reduces excess oil from the skin.
- v. **Moisturizes Skin:** Fenugreek seeds nourish and moisturize the skin by removing all the dryness.[14]
- vi. **Reduces Blemishes and Dark Circles:** Fenugreek seeds contain vitamin K and vitamin C that help in reducing blemishes and dark circles from the skin.[15]
- vii. **Anti-Aging Properties:** It kills the free radicals which cause wrinkles and dark spots on the skin.
- viii. **Cure Acne:** Fenugreek seeds are enriched with antibacterial properties which can help to cure acne.[16]

● **Fenugreek also has various benefits for hair such as :**

- i. **Prevents Hair Loss:** Fenugreek seeds are very effective in making the hair strong from their roots and dealing with the follicular problems. These seeds fight irritation on the scalp and dandruff, which are two key reasons for hair loss[17].
- ii. **Fight Dandruff:** Both antibacterial and antifungal properties of fenugreek seeds make it useful to treat an itchy scalp and dandruff.
- iii. **For Shiny Conditioned Hair:** Take Fenugreek seeds in your diet. These seeds not only condition the hair strands but also their roots and follicles.[18]
- iv. **Promotes Hair Growth:** Fenugreek seeds not only kill the bacteria and fungi present on the scalp but strengthen the hair follicles and promote hair growth.
- v. **Prevents Premature Grey Hair:** The high content of potassium in fenugreek seeds makes it an important kitchen spice which is capable of tackling premature greying of hair.

● **COFFEE:**



Fig.1.2: Coffee powder

Coffee has various benefits in skin and hair care, such as:

- i. **Exfoliates:** Coffee grounds don't dissolve when added to water. This makes them perfect being the main ingredient in exfoliating scrubs. The removal of dead skin and the nourishing of the skin are easily some of a coffee face mask's benefits.
- ii. **Cleans and Nourishes the Feet.**
- iii. **Colours Hair.**
- iv. **Balances PH Levels in Hair:** Coffee is naturally acidic. By rinsing your hair with cold water, or scrubbing your scalp with coffee grounds you can balance the pH levels in your hair and rid your scalp of dead skin.
- v. **Fights Acne:** The stimulants, acids, and antioxidants found in coffee make it the perfect scrub and/or face mask to use on acne to completely clean the pores.
- vi. **Reduces Puffy Eyes.**
- vii. **Helps Reduce Cellulite:** The caffeine in coffee helps promote better blood flow and when used as a scrub in areas where cellulite may be present can reduce the fat deposits and leave skin looking firmer.
- viii. **Protects Against the Sun:** Antioxidants help the skin fight the signs of aging caused by prolonged exposure to the sun. Coffee is full of these antioxidants.
- ix. **Promotes Hair Growth:** Coffee is a natural stimulant that is known to increase the flow of blood to hair follicles. This makes your hair grow faster for those who simply want it stimulated and can help kick start the regrowth process in people who may be suffering from hair loss[19].

- **COCONUT OIL :**



Fig.1.3:Coconut oil

Coconut oil is beneficial for use in cosmetics, typically as a moisturizer, and in soaps. Historically, coconut oil was used as a remedy for treating illnesses and infection, healing wounds, promoting the growth of strong bones, and protecting skin against blemishes. In cosmetic it is used as, emollient, protectively hydrating, lubricating, cooling, soothing.[20]

- **ROSE WATER :**



Fig.1.4:Rose water

Rose water uses for different purposes like helps soothe skin irritation, Soothes sore throats, reduces skin redness, helps prevent and treats infections, contains antioxidants, heals cuts, scars, and burns, enhances mood, relieves headaches, it has anti-aging properties, soothes digestion problems.[21]

- **Turmeric:**



Fig.1.5:Turmeric powder

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.[22,23,24]

- **Aloe Vera :**



Fig.1.6:Aloevera

The word aloe Vera means "aloe meaning shining bitter substance while "vera" means true. Aloe Vera contains vitamin A and C and it is also shows anti-inflammatory properties[25]. Aloe Vera belongs to family "Liliaceae and commonly known as Ghritkumari. Aloe Vera used as moisturizing and softening agent on skin[26]. The aloe gel gives cooling effect on skin It has role in rejuvenation of aging skin, Aloe Vera has been used for variety of medicinal purpose. Aloe Vera also be used as a moisturizer.[27,28]

- **Amla :**



Fig.1.7:Amla powder

Amla commonly known as Indian gooseberry It belongs to family Euphorbiaceae. The species are native to India and also grows in tropical and subtropical regions including, Pakistan, China, South East Asia, Shrilanka, etc Amla has an important position in Ayurveda. It is loaded with antioxidants and vitamin C that helps to reduce dark spots hyper pigmentation and restore natural glow of skin.[29,30]

- **Honey:**



Fig.1.8:Honey

Highly popular and used in cosmetic treatment honey used in preparing hair conditioner and face wash, etc. Honey is the only insect derived natural product which has therapeutic and cosmetic as well as nutritional values Honey has been used for both as food and in medicines since ancient times[31]. Honey is one of the most appreciated and valued natural products approximately 300 varieties of honey have been identified although there

are many nutritional studies of honey.[32,33]

- **Sodium lauryl sulphate (SLS):**

In cosmetics, sodium lauryl sulphate is most often used as an emulsifier or surfactant. As an emulsifier, sodium lauryl sulphate helps to stabilize and thicken solutions with ingredients of differing solubility. This allows products to achieve a more uniform texture for easier, and smoother application.[34]

- **METHYL PARABEN :**

Methyl paraben is one of the most common parabens. You can find it as part of a paraben mix in most cosmetic products, where it prevents germ growth. It can also be found naturally in some fruits and may be used as a food preservative or an antifungal preservative.[35]

- **GLYCERIN:**

Glycerine is reported to function in cosmetics as a denaturant, fragrance ingredient, hair conditioning agent, humectant, oral care agent, oral health-care drug, skin protectant, skin conditioning agent—humectant, and viscosity-decreasing agent.[36]

Sr. No	Ingredients/ Equipment's	Make
1	Fenugreek seeds	Natural
2	Amla powder	Patanjali
3	Honey	Saffola
4	Aloe vera gel	Patanjali
5	Coconut oil	Parachute
6	Coffee powder	Bru
7	Rose water	Dabour
8	Turmeric	Natural
9	Measuring cylinder	Borosil
10	Beaker	Borosil
11	Sieve	Kumar
12	PH paper	Merck
13	Weighing Balance	Dolphina
14	Mortar Pestle	Porcelain material

Table1.2:Equipment

EVALUATION:

Evaluation parameter for facial scrub:

- ◆ **Appearance :**

- **Colour:**

Yellowish brown colour of facial scrub was observed by visual examination

- **Odour:**

Odour found to be characteristics. Sweet and simple syrup like odour.

- **State:**

Semisolid state of scrub observed by visually.

- **Consistency:**

Consistency was found to be smooth with visual observation.

- **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 4-6.

- **Spreadability:**

It is used to identify spreadability of the gel on the skin.

Small quantity of sample placed on a glass slide then another slide placed above them.

Amount of weight placed on slide, then it spread on slide and how much time it taken for spread is measured.

It calculated by using formula:

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

S= spreadability

M= weight placed on slide (1gm)

L= length of glass slide (7.5cm)

T= time taken in seconds (22 sec)

Spreadability was found to be 0.34gm.cm/sec

➤ **Irritability:**

Small amount of gel applied on skin and kept for few minutes and found to be non- irritable.

➤ **Washability:**

Small quantity of gel applied on the skin and wash with water after few minutes found to be washable with water.

➤ **Grittiness:**

Exfoliants need to abrasive property so fenugreek seeds powdered and pass through sieve then this preparation has few gritty particles observed.

➤ **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.

Foaming index =1000/a

Where, a = in ml in the test tube showing 1cm height.

❖ **Result & Discussion :**

Sr .No.	Parameter	Results
1.	Colour	Yellowish brown
2.	Odour	Maple syrup like, sweet
3.	PH	4-6
4.	Irritability	Non irritant
5.	Feel on application	Greasy
6.	Stability	Stable
7.	Consistency	Semisolid
8.	Spreadability	Uniform
9.	Washability	Easily washable
10.	Homogeneity By visual By touch	Smooth Consistent
11.	Removal	Easily Removable

Table 1.3:Result

CONCLUSION :

In comparison to other cosmetic products available in the market, natural and herbal cosmetics are easy,safe and effective to use. One of the main reason of herbal products use is that they can be used for all skin types.The major use of herbal products is for health promotion and therapy for serious skin conditions. However, usage of traditional remedies increases when conventional products is ineffective or may causes harmful effects. The use of polyherbal face scrub gives effectiveness and healthier skin type . The antioxidant, antiseptic, anti aging effect of fenugreek, turmeric and amla enhance the importance of use of polyherbal face scrub. The prepared formulation was suitable to skin and was evaluated using various parameters. The formulation have passed all the tests included in evaluation.

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