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Research Article

FORMULATION AND EVALUATION OF POLYHERBAL FACIAL SCRUB

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Many of the marketed product when applied on the skin cause dryness of skin after its long-term use which result less life of skin problems acnes and redness. Solution for this problem is use of scrub which consist of all herbal ingredient which increase cleansing, softening, moisturizing, fairness of skin. The use of natural ingredient to fight against acne. Wrinkle and also to control secretion of oil is known as natural and herbal cosmetics herbal cosmeceutical usually contain the plant parts which processes antimicrobial, antioxidant and anti- angina properties. Herbal cosmetics are the safest product to use routine with no side effect and cosmeceuticals are the product which influences the biological functions of skin.

Key words (herbal scrub, exfoliants Phyto-ingredient, antioxidant, acne, skin)

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INTRODUCTION:

Herbal cosmetics, here referred as items are formulated, using different permissible cosmetic ingredient to form the base in which one or more herbal ingredient are utilized to supply characterized corrective preference as it were, might be called “Herbal cosmetic” starting 1990’s cosmetic manufacturing update a term ‘cosmeceutical’ to describe the OTC skin care items that claim therapeutic advantage by addition plant based active ingredient such as alpha hydroxy acid , retinoic acid, ascorbic acid and coenzyme These active ingredients serve numerous purpose viz. increase skin flexibility , daily in skin aging by decreasing the wrinkles, protection against UV radiation by antioxidant property and to check degradation of collagen respectively.

The word cosmetic was obtained from the Greek word “Kosm Tikos” meaning having the powder, order, ability decorating. The birth of beauty care products for a continuous narrative throughout the history of man as they created. The man in old times 3000Bc used color for the enrichment to charm to creatures that he wished to chase additionally the man survived assault from the equal by coloring his skin and embellished his body for assurance to incite fear in an enemy (whether man or animal)

The wellbeing, habits, schedule work, climatic condition and upkeep were capable for people skin and hair beauty. The skin due to excessive exposure to heat will dehydrate during summer and causes wrinkle, spots, blemishes, pigmentation and sunburn. The extreme winter cause harm to the skin and hair within the forms of cracks, cuts, maceration, contamination and hair fall. The skin disease is common among all age groups and can due to exposure towards organism, chemical agents, biological toxin within the environment, additionally to amplify due to malnutrition. The only factor they had to relay on was the information and data of nature assemble within the Ayurveda. he science of Ayurveda had utilized numerous herbs and floras to form beauty care product for beautification and protection from outside effect. The beauty care products, according to the Drug and Cosmetic Act characterized by as a article intended to rubbed, poured, powdered and sprayed on, present into or other various products.[1]



Fig. no. 1: Formulation of Polyherbal Facial Scrub

Definition of Cosmetics:

The cosmetics, according to the Drugs and Cosmetic Act is characterized as article intended to be rubbed, poured, sprinkle and sprayed on, introduce into or otherwise applied to the human body or any part there of for cleansing, beautifying, advancing attractiveness or modifying the appearance. The cosmetic does not come beneath the preview of drug license”

❖ Advantages and Disadvantages of herbal facial scrub:

➤ Advantages:

As opposed to pharmaceutical products.

- ❖ **Reduce the risk of side effect** – Most herbal medicines are well tolerated by the patient, with fewer unintended consequences than pharmaceutical drugs. Herbs typically have fewer side effects than traditional medicines, and may be Safar to use over time.
- ❖ **Effective with chronic conditions-** Herbal medicines tend to be more effective for long-standing health complaints that don’t respond well to traditional medicine. One example is the herbs and alternative remedies used to treat arthritis, was recalled due to increased risk of cardiovascular complications.

- ❖ **Lower cost-** Another advantage to herbal medicine is cost. Herbs cost much less than prescription medications. Research, testing and marketing and considerably to the cost of prescription medicines. Herbs tend to be inexpensive compared to drug
- ❖ **Widespread availability** - Yet another advantage of herbal medicines is their availability. Herbs are available without a prescription. You can grow some simple herbs, such as peppermint and chamomile, at home. In some remote parts of the world, herbs may be the only treatment available to the majority of people.

➤ **Disadvantage:**

Herbs are not without disadvantage, and herbal medicine is not appropriate in all situations. These are a few of the disadvantage to consider;

- ❖ **Inappropriate for many condition-** Modern medicine treats sudden and serious illnesses and accidents much more effectively than herbal or alternative treatments. An herbalist would not be able to treat serious trauma, such as a broken leg, nor would he be able to heal an appendicitis or a heart attack as effectively as a conventional doctor

using modern diagnostic tests, surgery and drugs

- ❖ **Lack of dosage instructions:** Another disadvantage of herbal medicine is the very real risks of doing yourself harm through self-dosing with herbs. While you can argue that the same thing can happen with medications, such as accidentally overdosing on cold remedies, many herbs do not come with instructions or package inserts. There's a very real risk of overdose.
- ❖ **Poisons risk associated with wild herbs:** Harvesting herbs in the wild a risky, if not foolhardy, yet some people try to identify and pick wild herbs. They run a very real risk of poisoning themselves if they don't correctly identify the herb, or if they use the wrong part of the plant.
- ❖ **Medication interactions:** Herbal treatment can interact with medications. Nearly all herbs come with some warning, and many, like the herbs used for anxiety such as valerian and St. John's Wort, can interact with prescription medication like antidepressants. It's important to discuss your medications and herbal supplements with your doctor to avoid dangerous interactions.

HERBS USED IN MEDICINAL PREPARATION

Herbs	Botanical name	Category
Kalonji	Nigella Sativa L.	Anti-bacterial, Anti- fungal
Red Dragon food	Seleniferous Undatus	Anti-oxidants, Natural Moisturizer
Poppy seeds	Papaver Somniferum	Scrubbing agent
Wheat cover	Triticum aeastivum	Anti- Oxidants, Astringents, Protective
Sunflower seeds	Helianthus annuus	Photo protective
Lemon syrup	Citrus Limon L.	Natural Anti-Oxidant

Table. No. 1. Herbs Used In Medicinal Preparation

Sr. No.	Material Name	Function in Formulation	Source / Obtained From
1	Kalonji Powder	Anti-acne, antimicrobial herbal ingredient	Local Ayurvedic store / Herbal supplier
2	Wheat Cover Powder	Natural exfoliant, antioxidant	Grocery store / Processed manually from husk
3	Sunflower Seed Powder	Moisturizing, skin softening	Organic store / Ground fresh seeds
4	Poppy Seed Powder	Gentle exfoliating agent	Grocery store / Market
5	Dragon Fruit (Fresh Juice)	Hydrating, antioxidant-rich fruit base	Fresh fruit market
6	Lime Juice (Fresh)	Brightening, natural astringent	Local fruit market
7	Glycerin	Humectants (moisture-retaining agent)	Pharmacy / Chemical lab
8	Mineral Oil (Light)	Cream base, emollient	Laboratory chemical store
9	Cetostearyl Alcohol	Emulsifier and thickener	Laboratory chemical store
10	Stearic Acid	Cream builder and stabilizer	Laboratory chemical store
11	Glyceryl Monostearate (GMS)	Emulsifier	Laboratory chemical store
12	Cetyl Alcohol	Skin conditioner, improves texture	Laboratory chemical store
13	Propylene Glycol	Humectants, solvent	Pharmacy / Lab chemicals
14	Isopropyl Myristate (IPM)	Enhances spreadability	Cosmetic chemical store
15	Rose oil	Fragrance and soothing base	Local cosmetic
16	Propyl Paraben	Preservative	Laboratory chemical store
17	Sodium Lauryl Sulphate (SLS)	Foamability	Chemical lab store

Table No.2.Methods & Materials

Plan of work:**1. Selection of Topic and Herbal Ingredients**

The project begins with choosing a suitable topic related to natural skincare. Based on current trends and benefits, a polyherbal facial scrub containing ingredients like dragon fruit, kalonji, wheat cover, sunflower seeds, poppy seeds, and lime juice is selected.

2. Collection of Raw Materials

Herbal ingredients are sourced from local markets or verified suppliers. Fresh dragon fruit and lime are collected for juice extraction, and seeds/powders

are gathered for formulation.

3. Literature Review on Herbal Facial Scrubs

A detailed review of scientific papers, journals, and traditional Ayurvedic texts is conducted to understand the therapeutic value, properties, and prior usage of each ingredient.

4. Preparation of Herbal Powders and Juices

Herbal ingredients are dried (if needed), ground into powder, and filtered. Dragon fruit and lime juices are freshly extracted and stored under hygienic conditions.

5. Formulation of the Facial Scrub

The cream base is prepared using emulsifiers and

oils, then blended with herbal powders and fresh juices to create the scrub. Emulsion is carefully maintained for consistency.

6. Evaluation of Physical and Cosmetic Properties

The scrub is tested for key parameters such as pH, spreadability, consistency, grittiness, washability, and any signs of irritation.

7. Packaging and Labeling

The final formulation is filled into sterile containers and labeled with product name, ingredients, usage instructions, batch number, and other relevant details.

OTHERS- HOME-MADE REMEDIES FOR HERBAL SCRUB [15]

1) Gentle Oat Scrub

- ✓ Soothing and anti-inflammatory oats are ideal for sensitive skin. Ground oats gently unclog pores while their natural saponins cleanse and absorb dirt and oil.
- ✓ ½ cup old-fashioned oats (uncooked)
- ✓ Water
- ✓ In a blender, pulse the dry oats until finely ground. Place a pinch of the ground oats into the palm of your hand, then add water until a paste forms. Gently massage into your face and neck. Store the ground oats in an airtight container for later use.
- ✓ Bonus: Instead of water, you can use milk or yogurt, both of which have lactic acid as a chemical exfoliant. Or add apple cider vinegar that contains malic acid for brightening properties.

2) Honey & Brown Sugar Scrub

- ✓ Honey and sugar are natural humectants (moisture preservers) that make a gentle scrub to buff away flakes, clear out pores, and lock in moisture.
- ✓ 1 tablespoon brown sugar (the finer, the better)
- ✓ 1 tablespoon honey, preferably raw
- ✓ Mix the brown sugar and honey together. Then with clean fingertips, very gently apply the scrub to your face in small circular motions to aid in the exfoliation process without damaging the skin. Rinse with warm water and use a washcloth to remove any residual honey, if needed.

3) Baking Soda Add-In

- ✓ With its superfine texture, baking soda acts like an at-home microdermabrasion for all skin types. This inexpensive ingredient also absorbs excess oil, so it's especially helpful for oily skin.
- ✓ 1 teaspoon baking soda
- ✓ Your regular liquid skin cleanser

- ✓ Possibly the easiest scrub to make, just add 1 teaspoon of baking soda into a small amount of your regular cleanser, and you've just made your product work double duty as an exfoliating cleanser.

4) Coffee & Oil Scrub

- ✓ Leftover coffee grounds are mild enough to use all over the body—even on sensitive areas like the face. Plus, the used grounds are still chock full of caffeine and antioxidants [source] that leave the skin looking perky and toned.
- ✓ 1 tablespoon used coffee grounds
- ✓ 1 tablespoon oil (jojoba, olive, or rosehip)
- ✓ Talk about reduce, reuse, and recycle! Don't throw away the used coffee grounds after making your morning brew. Just add 1 tablespoon of oil to them, and you've got a gentle, collagen-boosting scrub ready to go. Coffee scrubs (with added essential oil) are also great for cellulite-prone areas of the body [source].

5) Rice & Egg White Exfoliating Facial Scrub

- ✓ Ground rice powder makes an excellent cleanser for brightening complexions and lightening skin discolorations. Brown rice flour has oil-absorbing and anti-inflammatory benefits that help treat oily and sensitive skin. Combine with a tablespoon of ground almonds if you're battling aging.
- ✓ 2 tablespoons brown rice
- ✓ 1 egg white
- ✓ Using a coffee grinder, grind brown rice grains until fine. Add an egg white and whip to create a paste. Then gently massage the scrub into the skin in small circular motions to exfoliate dead cells. Rinse with warm water to remove.

6) Aloe Vera Gel & Sugar Facial Scrub

- ✓ Superfine sugar is a great kitchen ingredient to add to your scrub, the finer in grit, the better for your skin. Aloe vera is known to be soothing and healing [source] for all skin types.
- ✓ Combine the two ingredients, and after gently massaging them into your skin, leave the mixture on for a few extra minutes and then rinse well to remove.
- ✓ 1 tablespoon aloe vera gel
- ✓ a sprinkle of superfine sugar

7) Almond Jojoba Scrub

- ✓ Another easy to find kitchen ingredient is raw almonds. While you will need to grind them very finely in a coffee grinder or food processor, the

end result will be skin smoother than when you started. Jojoba oil is non-comedogenic and great to use on skin prone to breakouts.

- ✓ 12 raw almonds
 - ✓ 1–2 tablespoons jojoba oil
 - ✓ After grinding the raw almonds to a fine powder, add in the jojoba oil and gently exfoliate in circular motions. Remove with a warm washcloth.
- 8) **Flax Seed Scrub**
- ✓ Flax seeds are both anti-inflammatory internally and externally [source]. You can add a number of options to a handful of flax seeds and create a scrub so simple and effective.
 - ✓ 1 teaspoon ground flax seeds or flaxseed meal
 - ✓ 1 tablespoon carrier ingredient (aloe vera gel, yogurt, honey, jojoba oil, rosehip oil)
 - ✓ Mix well with a mortar and pestle and then remove with warm water. [22]

Experimental work:

The experimental work for the formulation of a polyherbal facial scrub was carried out in the cosmetic laboratory using herbal and pharmaceutical-grade ingredients. The study involved the preparation of herbal powders, fresh juice extraction, formulation of an emulsion-based scrub, and its evaluation based on various parameters.

1. Extraction of Herbal Juices and Powder Preparation
 - Fresh dragon fruit and lime were collected, washed thoroughly, peeled, and blended.
 - The juices were filtered using a muslin cloth to remove fibers and pulp.
 - Dried Kalonji seeds, wheat husk, sunflower seeds, and poppy seeds were ground into a fine powder using a grinder and passed through a fine sieve to obtain a uniform texture suitable for

facial application.

2. Formulation of Cream Base (Emulsion Preparation)
 - The oil phase was prepared by heating mineral oil, stearic acid, cetostearyl alcohol, cetyl alcohol, Glyceryl monostearate (GMS), and isopropyl myristate (IPM) to 75–80°C.
 - The aqueous phase was prepared by heating glycerin, propylene glycol, rose water and sodium Lauryl sulfate (SLS) to the same temperature.
 - The oil phase was then slowly added to the aqueous phase with continuous stirring to form a stable cream-based emulsion.
3. Addition of Herbal Actives
 - Once the emulsion cooled to below 45°C, the herbal powders (kalonji, wheat cover, sunflower, poppy seed) were added gradually while stirring.
 - Fresh dragon fruit juice and lime juice were then added to the emulsion.
 - The mixture was stirred slowly to ensure uniform distribution of actives and avoid clumping.
4. Addition of Preservative
 - Propyl Paraben was added to act as a preservative..
5. Packaging
 - The final product was transferred into clean, airtight containers.
 - The containers were labeled with relevant product information, including ingredients, batch number, manufacturing date, and expiry.

Table. no. 3.Formula

Ingredient	For 50 g	For 100 g	For 150 g	Function
Kalonji powder	2.5 g	5 g	7.5 g	Anti-acne, antibacterial
Wheat cover powder	5 g	10 g	15 g	Exfoliant, antioxidant
Sunflower seed powder	5 g	10 g	15 g	Skin softener
Poppy seed powder	5 g	10 g	15 g	Gentle exfoliation
Dragon fruit juice (fresh)	4 g	8 g	12 g	Hydrating, brightening
Lime juice (fresh)	1 g	2 g	3 g	Natural astringent, brightens skin
Glycerin	2.5 g	5 g	7.5 g	Moisturizer (Humectant)
Almond oil (sweet)	5 g	10 g	15 g	Emollient, rich in vitamin E
Cetostearyl alcohol	2.5 g	5 g	7.5 g	Emulsifier, cream stabilizer

Stearic acid	1 g	2 g	3 g	Thickener, texture builder
Glyceryl monostearate	1 g	2 g	3 g	Emulsifier
Cetyl alcohol	1 g	2 g	3 g	Skin softener, cream texture
Propylene glycol	1 g	2 g	3 g	Humectant
Isopropyl myristate (IPM)	0.75 g	1.5 g	2.25 g	Enhances spreadability
Sodium Lauryl Sulfate (SLS)	0.5 g	1 g	1.5 g	Cleansing, mild foaming
Rose water	7.25 g	14.5 g	21.75 g	Soothing aqueous base
Propyl Paraben	0.25 g	0.5 g	0.75 g	Preservative

Evaluation Parameters:

The prepared face wash gel was evaluated for various parameters as follows.

- 1. Colour-** The colour of the face wash gel was checked visually.
- 2. Odour-** The formulation was evaluated for its odour by smelling it.
- 3. pH -** pH of the prepared gel was evaluated. Small amount of the gel was applied on the pH paper.
- 4. Consistency -** It was determined manually.
- 5. Spread ability-** 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 spread ability.
- 6. Extrudability -** Small amount of gel was taken into a collapsible ointment tube. One end closed and the other end kept opened. Slight pressure was applied on the closed side. The time taken to extrude and the amount of gel extruded was noted.
- 7. Viscosity -** Brookfield viscometer was used to measure the viscosity of gel
- 8. Irritability -** Small amount of the gel was applied on the skin and kept for few minutes and found to be non irritant.
- 9. Washability -** Formulations were applied on the skin easily remove by washing with water were checked manually grittiness. The product was checked for the presence of any gritty particles by applying it on the skin.
- 10. Foamability -** Small amount of gel was taken in a beaker containing water. Initial volume was noted beaker was shaken for 10 times and the final volume was noted.

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

RESULT AND DISCUSSION:

Sr. No.	Parameter	Observation	Inference
1	Color	Light pink, uniform	Aesthetically pleasing and visually acceptable
2	Odor	Mild, fruity-floral	Pleasant, user-friendly fragrance
3	pH	5.6 – 6.2	Suitable for facial skin, non-irritating
4	Spreadability	Smooth and even	Easy application over the skin
5	Consistency	Creamy, stable	Good texture and user experience
6	Grittiness	Fine exfoliating particles, no harsh granules	Safe for sensitive skin; effective exfoliation
7	Washability	Easily rinsed off with water	Leaves skin clean and non-greasy
8	Irritation Test	No redness, itching, or irritation observed	Safe and compatible for skin

Table. No. 1.4 Observation

DISCUSSION:

The results confirm that the developed scrub is stable, safe, and cosmetically active. The blend of dragon fruit juice (antioxidant and vitamin C) and lime juice (astringent and brightening) boosts the product's anti-pigmentation and moisturizing abilities.

The addition of herbal powders gave efficient exfoliation without harming the skin. The cream base gave moisturization, spreadability, and rich texture, while propyl paraben maintained the product throughout the test duration.

The product provides a natural, functional, and environmentally friendly alternative to chemical facial scrubs. It is in line with consumer preference for herbal skincare with few side effects

CONCLUSION:

The polyherbal facial scrub was successfully formulated using natural ingredients such as dragon fruit juice, kalonji, wheat cover, sunflower seeds, poppy seeds, and lime juice in a cream-based emulsion. The prepared scrub demonstrated excellent physical characteristics including pleasant appearance, smooth consistency, and good spreadability.

Evaluation results showed that the scrub had a skin-friendly pH (5.6–6.2), was non-irritating, and provided effective exfoliation without being harsh. The presence of herbal powders ensured gentle scrubbing action, while fresh fruit juices contributed to hydration, antioxidant protection, and skin brightening.

REFERENCE:

1. Kambhoj VP Herbal Medicine Curr Med 2000;78:35-39
2. <https://www.slideshare.net/rahimbrave/herbal-cosmetics-69811712>
3. Definition of facial scrub, in British English <https://www.collinsdictionary.com/dictionary/english/facial-scrub>
4. Ghadge P.K. Mahamuni and S.S Kachare, Formulation and Evaluation of herbal Scrub using tamarind Peel, International Journal of Research,2020,volume IX (VII): 1-10.
5. Best face scrub for oily skin, April 18, 2022, written by Oyendrilakanji Lal, certified skin care coach. <https://www.stylecraze.com/articles/best-scrub-for-oily-skin>
6. Benefits of a body scrub, by Dr. Patrik Proffer, on July 20, 2021
7. Dr. Shweta P. Ghade, et-al., Formulation and Evaluation of facial Scrub containing Sunflower Seeds & other Natural Ingredients,2019, Vol 8(9):1772- 1781. S.V.N.H.T.'s College of B. Pharmacy, Shri Shivajinagar, Rahuri Factory 27
8. Ferdoushi Tahan, et al., latinal He And spices: A great resource for Skin Care Cosmetics, Journal of Plant Science and Research, 2019, 7: 86 -99.
9. Nilani Packianathan, Rukmani Kandasamy: Skin Care with Herbal Exfoliants, Functional Plant Science and Biotechnology 2010;5(1):94-97)
10. Often should you actually exfoliate your face? Review by Cynthia Cobb, DNP, written by Lawren Sharkey, Nov 25, how 2019
11. Homemade remedies from kitchen
12. <https://helloglow.co/homemade-face-scrubs/>
13. <https://www.healthline.com/health/beauty-skin-care/how-often-should-youexfoliate-your-face>
14. "Formulation and evaluation of herbal scrub using tamarind peel" Ghadge P.K.*1,Mahamuni S.S.I, Kachare D.S.2
15. Chakravarty BK Herbal medicines. Safety and efficacy guidelines. Regulatory Affairs J 1993;4:699-701
16. World Health Organization, WHO guidelines on good agricultural and collection practices (GACP) for medicinal Plants.
17. Dubey N K, Kumar R, Tripathi P. Global promotion of herbal medicine: India's opportunity Curr Med 2004 86:37-41
18. Definition of facial scrub, in British English
19. <https://www.collinsdictionary.com/dictionary/english/facial-scrub>
20. 10 of the best scrubs: how to choose review by BokkyAremu, APRN- written by Danielle Dresden on November 29, 2021
21. <https://www.medicalnewstoday.com/articles/best-face-scrubs#benefits>
22. Best face scrub for oily skin, April 18, 2022, written by Oyendrila kanjilal, certified skin care coach.
23. 3447International Journal of Research Publication and Reviews, Vol 3, no 6, pp 3439-3448, June 2022
24. <https://www.stylecraze.com/articles/best-scrub-for-oily-skin/>
25. J. Prathyusha,N.S.Yamani,G.Santosh, A. Arvind, B. Naresh : Formulation and evaluation of polyherbal face scrubber for oily skin in gel form, National
26. general of pharmaceutical science and drug research 2019; 11(4):126-128
27. Ghadge P.K, Mahamuni S. S, Kachare D. S, Formulation and evaluation of herbal scrub using tamarind peel; International journal of Research;